Return on Investment Study: Habitat for Humanity AmeriCorps

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Executive Summary

Habitat for Humanity AmeriCorps

AmeriCorps contracted with ICF Incorporated, LLC (hereafter ICF) to explore and quantify the return on investment (ROI) of several programs that rely on AmeriCorps national service as a major resource to sustain operations. ROI analyses have the potential to help AmeriCorps measure the performance of programs and build the base of evidence for future resource allocation decisions. In addition, ROI study results will help AmeriCorps communicate the value of its programming to relevant stakeholders.

Key Results

This study estimates HFH AmeriCorps's ROI to be between $0.62 to $2.61 per funder dollar, depending on how long HFH AmeriCorps members experience increased earnings from their national service. The return on each dollar of federal support for the program is even higher, between $0.92 and $4.14. These results are driven by favorable employment and education outcomes for HFH AmeriCorps members following their service, as well as savings in homebuilding and rehabilitation work by HFH homeowners.

This ROI study measured the benefits of Habitat for Humanity (HFH) AmeriCorps against its costs. Habitat for Humanity International, Inc. (HFHI) is a non-profit homebuilding program that operates on a national and international scale. It provides low-income families living in substandard housing with volunteer-built, rehabilitated, or repaired homes and affordable mortgages. HFHI's U.S. arm coordinates and organizes the efforts of more than 1,200 local HFH organizations (i.e., affiliate sites).[1] These U.S. affiliate sites work with HFHI's national office to coordinate home construction, building site and partner selection, fundraising, and mortgage servicing. Families in need of decent and affordable housing apply for HFH homeownership with U.S. affiliate sites. If they qualify, homeowners contribute their own labor—termed "sweat equity"—and work alongside AmeriCorps members and non-national service member volunteers to build or improve their homes. HFH homeowners also pay an affordable mortgage with no interest, receive financial education, and participate in home maintenance classes to learn how to meet the demands of owning a home.[2]

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[1] Habitat for Humanity. (n.d.). Frequently asked questions. Retrieved from https://www.habitat.org/about/faq.

[2] Please see these websites for more information: https://www.habitat.org/our-work/financial-education. and https://www.habitat.org/stories/steps-homeownership.

Population Served

For the 2019-2020 program year, HFH AmeriCorps served 2,364 individuals and built 803 homes. HFH AmeriCorps selects U.S. families at the local level based on their need for safe and affordable housing, their willingness to partner with HFHI and work alongside volunteers, and their ability to repay the no-interest mortgage.[3] These families predominantly have low incomes (i.e., less than 60 percent of the affiliate site's service area median income), have at least one dependent under 18 years old, belong to racially underrepresented groups, live in overcrowded or sub-standard housing, or devote a large portion of their income to housing costs.[4]

HFH host sites are U.S. affiliate sites that leverage AmeriCorps State and National and AmeriCorps VISTA members and they comprise the HFH AmeriCorps program.[5] HFH AmeriCorps State and National members perform direct services including leading homebuilding and renovation efforts, planning and coordinating community projects, assisting in structure demolition, recruiting and educating qualified families, providing financial education and home maintenance classes, and training non-national service member volunteers. Additionally, HFH AmeriCorps VISTA members provide indirect services that strengthen and build the capacity of host sites including documenting construction operations, maintaining donor engagement, contributing to resource and project development, and implementing family and volunteer recruitment strategies.[6]

[3] Habitat for Humanity. (n.d.). Habitat homeowners. Habitat for Humanity. https://www.habitat.org/housing-help/habitat-homeowners.

[4] This information was provided directly by HFHI through ICF's personal communication with and data request to HFHI in 2021.

[5] Of note, some Habitat affiliate sites use AmeriCorps members while others do not. Affiliate sites that use AmeriCorps members are called host sites since they "host" AmeriCorps members for a service term.

[6] Habitat for Humanity. (n.d.). The AmeriCorps experience. Retrieved from https://www.habitat.org/volunteer/long-term-opportunities/americorps/americorps-experience

HFH AmeriCorps Impacts: Selected Evaluation Results

Below are findings from two HFH AmeriCorps evaluations on the program's performance and impact. According to the findings of Viola et al. (2018), as compared to non-host sites (who do not leverage AmeriCorps members) over a three-year period, host sites on average:

- Built 4.99 more HFH homes (20.36 vs. 15.37); this finding was nearly statistically significant.
- Rehabbed 8.24 more homes (15.35 vs. 7.11); this finding was statistically significant.

Relevant survey results from Mattessich et al. (2015) include the following:

- Fifty-seven percent of HFH homeowners who reported they themselves or a household member had a respiratory illness prior to moving into an HFH home indicated their condition improved after moving into an HFH home.
- Twenty-five percent of surveyed HFH homeowners reported that they received federal rental assistance prior to moving into their HFH home and indicated they no longer did after moving into their home.

Return on Investment Study Methods

This study focused on AmeriCorps' contribution to HFHI programing. For that reason, only benefits and costs related to the activities and positions of HFH AmeriCorps State and National and HFH AmeriCorps VISTA members (i.e., the HFH AmeriCorps program) are included in this methodology.

The methodology for the HFH AmeriCorps ROI study consisted of the following components:

1. **Measuring and monetizing program benefits**. This includes using data from previous evaluations and other third-party sources to determine the benefits across the following stakeholder groups:
   - **HFH homeowners.** HFH homeowners benefit from cost savings in buying a new home and regarding home rehabilitation work.
   - **HFH household members.** HFH household members benefit from out-of-pocket (OOP) medical cost savings due to their improved respiratory health after moving into an HFH home.
   - **Private insurance companies.** Private insurance companies benefit from medical cost savings due to the improved respiratory health of HFH household members.

- **Other healthcare payers.**[7] Other healthcare payers benefit from medical cost savings due to the improved respiratory health of HFH household members.
- **HFH AmeriCorps members.** HFH AmeriCorps members benefit from:
  a) Living allowances, stipends, and education awards
  b) Increased earnings due to reduced unemployment
  c) Increased lifetime earnings due to increased post-secondary education derived from the use of education awards
- **Government.** Government benefits from income, Social Security, and Medicare tax revenue from HFH AmeriCorps members' increased earnings, and sales tax revenue from the increased economic activity that results from those increased earnings. Government also benefits from reduced spending on corrections, public assistance, and social insurance and increased tax revenue associated with the increased educational attainment of HFH AmeriCorps members that is derived from their use of education awards post-service. Finally, government benefits from tax revenue from HFH AmeriCorps members' living allowances, stipends, and education awards, cost savings due to HFH homeowners' reduced federal rental assistance use, and Medicare and Medicaid cost savings due to the improved respiratory health of HFH household members.

This ROI analysis monetized HFH AmeriCorps benefits in 2020 dollars.

2. **Estimating forgone benefits (opportunity costs).** This ROI analysis estimated two types of forgone benefits. The first was the professional opportunity cost to HFH AmeriCorps members for their period of national service, during which they could have earned more pay by doing other work. This included both the forgone earnings of HFH AmeriCorps members and the associated tax revenue for government. The second was the investment opportunity cost for HFH AmeriCorps program funding that could have been used for other purposes. The analysis estimated the investment opportunity cost for both government and private funders based on the forgone return of investing program funds into U.S. Treasury bonds. The rates of return for U.S. Treasury bonds provide a market-based estimate of return for low-risk investments. For the ROI estimates, the analysis subtracted forgone benefits from program benefits to calculate net benefits. The net benefits were then compared to program costs.

[7] Other healthcare payers include those such as the Department of Veterans Affairs (excluding TRICARE), Indian Health Services, community and neighborhood clinics, worker's compensation, homeowner's or liability insurance, and others (AHRQ, 2021)

3. **Assessing program costs.** HFHI provided HFH AmeriCorps program costs for the 2019–2020 program year. Only the program costs that support the activities and positions of HFH AmeriCorps State and National and HFH AmeriCorps VISTA members (i.e., the HFH AmeriCorps program) are included in this study. These program costs included the AmeriCorps State and National and VISTA grants, the education awards received by HFH AmeriCorps members, and the fees received from HFH host sites paid to HFHI for hosting HFH AmeriCorps members (i.e., match funding).
4. **Calculating the ROI.** The ROI analysis consists of three ROI calculations: 1) *total benefits per federal dollar*, 2) *total benefits per funder dollar*, and 3) *federal government benefits per federal dollar*. This analysis calculated the value of these three ROI calculations under three scenarios representing different assumptions about the persistence of program outcomes. As mentioned above, the benefits used to calculate the ROI are the *net benefits* associated with the program (the program benefits minus the forgone benefits).

This analytical framework includes only those benefits that could be reasonably monetized given the available data, and that likely would not have occurred without the HFH AmeriCorps program. Figure ES 1 shows how HFH AmeriCorps activities can result in HFH homeowner, HFH household member, private insurance company, other healthcare payer, HFH AmeriCorps member, and government benefits.

Figure ES 1. Benefits among Stakeholder Groups Derived from HFH AmeriCorps

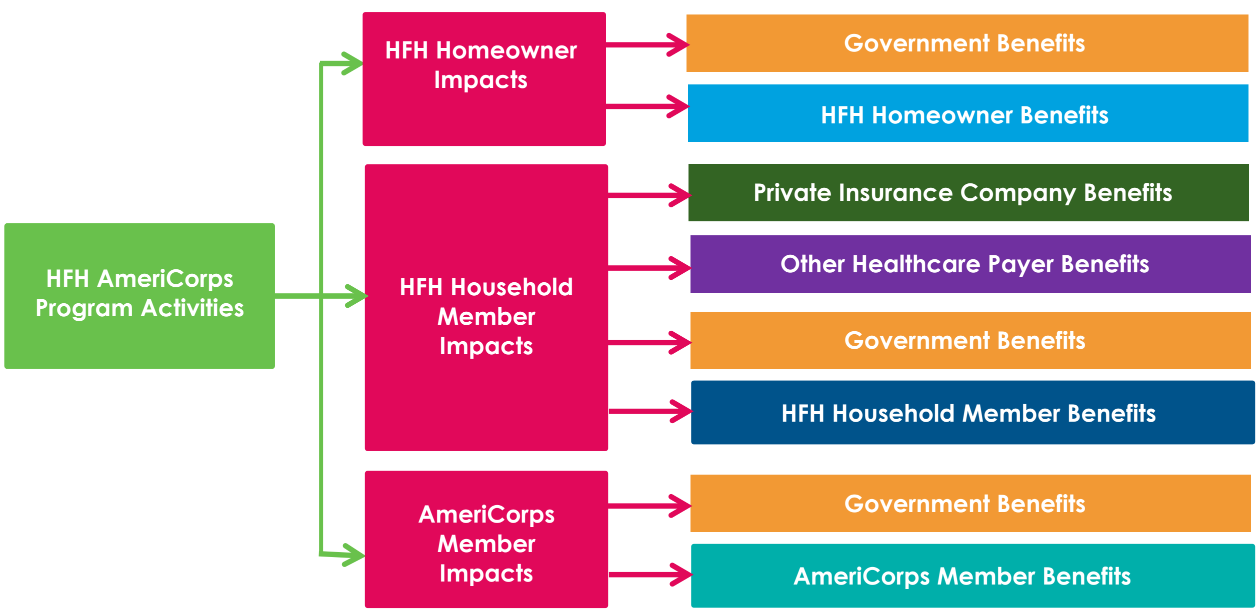

Table ES 1 shows the benefits, forgone benefits (opportunity costs), and costs that are included in each of the three types of ROI calculations.

Table ES 1. Benefits, Forgone Benefits, and Costs Included in the ROI Calculations

ROI Calculation	Benefits	Forgone Benefits	Costs
Total Benefits per Federal Dollar	• All HFH AmeriCorps member, HFH homeowner, HFH household member, private insurance company, other healthcare payer, and government benefits derived from the program	• Forgone benefits from total professional opportunity cost • Forgone benefits from Federal investment opportunity cost	• AmeriCorps federal funding
Total Benefits per Funder Dollar	• All HFH AmeriCorps member, HFH homeowner, HFH household member, private insurance company, other healthcare payer, and government benefits derived from the program	• Forgone benefits from total professional opportunity cost • Forgone benefits from total investment opportunity cost	• AmeriCorps federal funding • All match funding
Federal Government Benefits per Federal Dollar	• Additional federal government tax revenue generation and reduced spending attributable to the program	• Forgone benefits from Federal professional opportunity cost • Forgone benefit from Federal investment opportunity cost	• AmeriCorps federal funding

Available data established that HFH AmeriCorps members enjoy earnings impacts as a result of serving with HFH AmeriCorps. 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:[8]

- **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 2020 dollars.[9] 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 HFH 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 2020 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.

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

Table ES 2 shows the estimates of monetized program benefits of HFH AmeriCorps by stakeholder group for each of the three scenarios, and the percentage of the total program benefits that each represent. The majority of monetized benefits are realized by HFH AmeriCorps members and HFH homeowners. In all three scenarios, both HFH AmeriCorps members and HFH homeowners combined realized 80 percent or more of program benefits.

[8] These three scenarios consider varying durations of how long increased employment and earnings benefits last for HFH AmeriCorps members. They also consider varying durations for lifetime benefits that stem from HFH AmeriCorps. For example, lifetime benefits in terms of decreased public assistance, social insurance, and corrections costs result from HFH AmeriCorps members' higher education 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.

[9] 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).

Table ES 2. Program Benefits by Recipient

Recipient	Benefits by Scenario (2020$)*		
	Short term	Medium term	Long term
HFH Homeowners (percent of total program benefits)	$11,629,389 (61%)	$11,629,389 (37%)	$11,629,389 (28%)
HFH Household Members (percent of total Program benefits)	$15,137 (0%)	$15,137 (0%)	$15,137 (0%)
HFH AmeriCorps Members (percent of total program benefits)	$5,737,878 (30%)	$14,740,741 (47%)	$21,647,163 (52%)
Federal Government (percent of total program benefits)	$1,262,762 (7%)	$3,937,898 (12%)	$6,207,292 (15%)
State/Local Governments (percent of total program benefits)	$399,827 (2%)	$1,210,776 (4%)	$1,876,414 (5%)
Total (Total percent)	**$19,044,993 (100%)**	**$31,533,941 (100%)**	**$41,375,393 (100%)**

*Numbers may not sum due to rounding.

Table ES 3 shows the breakdown of forgone benefits of both HFH AmeriCorps participants and funders. These forgone benefits are subtracted from the program benefits (shown above) to calculate the net benefits of the program. Those net benefits are then compared to program cost to calculate the ROI. These forgone benefits are referred to as the professional and investment opportunity costs.

The professional opportunity cost includes the post-tax earnings HFH AmeriCorps members forgo—and the associated taxes forgone—due to their service with the HFH instead of other work. This opportunity cost is consistent across all three scenarios.

The investment opportunity cost represents the forgone accrued interest from investing HFH AmeriCorps program funding into U.S. Treasury bonds instead of into the HFH AmeriCorps program. The forgone accrued interest calculated varies by scenario because the analysis matched real interest rates for different maturity levels to the three scenarios. The period of forgone interest accrual was set to the length of each scenario.

Table ES 3. Forgone Benefits (Opportunity Cost) by Scenario

Forgone Benefits (Opportunity Cost)	ROI Scenario (2020$)*		
	Short term	Medium term	Long term
Professional Opportunity Cost	**$13,479,679**	**$13,479,679**	**$13,479,679**
Forgone Earnings of HFH AmeriCorps Members	$10,109,500	$10,109,500	$10,109,500
Forgone Taxes from Forgone Earnings	$3,370,180	$3,370,180	$3,370,180
Investment Opportunity Cost	**$192,101**	**$3,564,307**	**$8,331,983**
Forgone Accrued Interest on Total HFH AmeriCorps Funding	$114,712	$2,128,409	$4,975,404
Forgone Accrued Interest on Federal HFH AmeriCorps Funding Only	$77,389	$1,435,898	$3,356,579

*Numbers may not sum due to rounding.

Table ES 4 shows the cost of HFH AmeriCorps for the 2019–2020 program year by funding source. The table underscores what portion of HFH AmeriCorps funds were provided by AmeriCorps compared to other stakeholder groups (i.e., match funding from host sites). The table also highlights a further breakdown of these two funding streams, where applicable. Overall, the total cost of HFH AmeriCorps for this program year was $8.8 million. Sixty-seven percent of HFH AmeriCorps program costs (around $5.9 million) was funded by the federal government. This amount included the AmeriCorps State and National and AmeriCorps VISTA grants and the expected education awards. The remaining 33 percent (or $2.9 million) consisted of match funding from host sites.

Table ES 4. Program Cost by Funding Source for HFH AmeriCorps

Funder	Funding Provided for the Program Year ($)	Percent of Total (%)*
AmeriCorps	**$5,933,696**	**67.5%**
Education Awards	$1,620,396	18.4%
Grants	$4,313,300	49.0%
Host Sites (i.e., Match Funding)	**$2,861,727**	**32.5%**
Total	**$8,795,423**	**100.0%**

ROI Results

This analysis developed ROI estimates using the three scenarios (short-term, medium-term, and long-term). As noted above, the ROI calculations compared the net benefits of the HFH AmeriCorps program with program costs to calculate the ROI. Table ES 5 shows the gross program benefits, forgone benefits, net benefits, and program costs of the program, along with the results of the three ROI calculations.

Table ES 5. Benefits and Costs by ROI Scenario

Benefits and Costs	ROI Scenario (2020$)		
	Short term	Medium term	Long term
Total Gross Program Benefits	**$19,044,993**	**$31,533,941**	**$41,375,393**
HFH Homeowners	$11,629,389	$11,629,389	$11,629,389
HFH Household Members	$15,137	$15,137	$15,137
HFH AmeriCorps Member Benefits	$5,737,878	$14,740,741	$21,647,163
Federal Government Benefits	$1,262,762	$3,937,898	$6,207,292
State/Local Government/other funder Benefits	$399,827	$1,210,776	$1,876,414
Total Forgone Benefits (Opportunity Costs)	**$13,594,392**	**$15,608,089**	**$18,455,084**
Forgone Benefits to Members (Forgone Earnings Post-Taxes)	$10,109,500	$10,109,500	$10,109,500
Forgone Tax Revenue from Member Earnings	$3,370,180	$3,370,180	$3,370,180
Forgone Tax Revenue to Federal Government	$2,646,338	$2,646,338	$2,646,338
Forgone Tax Revenue to State/Local Government	$723,842	$723,842	$723,842
Forgone Benefits from Funding Provided (All Funders)	$114,712	$2,128,409	$4,975,404
Forgone Investment Benefits to Federal Government from Funding Provided	$77,389	$1,435,898	$3,356,579
Forgone Investment Benefits to State/Local Government and Other Funders from Funding Provided	$37,323	$692,511	$1,618,825
Total Program Net Benefits (Total Program Gross Benefits – Total Forgone Benefits)	**$5,450,601**	**$15,925,852**	**$22,920,309**
Net Benefits to HFH Homeowners (HFH homeowners benefits)	$11,629,389	$11,629,389	$11,629,389
Net Benefits HFH Household Members HFH household members benefits)	$15,137	$15,137	$15,137
Net Benefits to Members (Member Benefits – Forgone Benefits to Members)	-$4,371,622	$4,631,241	$11,537,663
Net Benefits to Federal Government (Federal Government Benefits – Forgone Tax Revenue to Federal Government – Forgone Investment Benefits to Federal Government from Funding Provided)	-$1,460,965	-$144,338	$204,375

Benefits and Costs	ROI Scenario (2020$)		
	Short term	Medium term	Long term
Net Benefits State/Local Government and other funders (State/Local Government Benefits – Forgone Tax Revenue to State/Local Government – Forgone Investment Benefits to State/Local Government and Other Funders from Funding Provided)	-$361,338	-$205,577	-$466,253
Total Program Costs	**$8,795,423**	**$8,795,423**	**$8,795,423**
Federal Government Cost	$5,933,696	$5,933,696	$5,933,696
Non-Federal Government Costs	$2,861,727	$2,861,727	$2,861,727
ROI for Total Benefits per Federal Dollar (Total Program Net Benefits / Federal Government Costs)	**$0.92**	**$2.80**	**$4.14**
ROI for Total Benefits per Funder Dollar (Total Program Net Benefits / Total Program Costs)	**$0.62**	**$1.81**	**$2.61**
Federal Government Benefits per Federal Dollar (Net Benefits Federal Government / Federal Government Costs)	**-$0.25**	**-$0.02**	**$0.03**

Table ES 6 shows the ROI results for the HFH AmeriCorps program. 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).[10]

Table ES 6. ROI Results for HFH AmeriCorps

ROI Calculation	ROI Scenario		
	Short term	Medium term	Long term
Total Benefits per Federal Dollar	$0.92	$2.80	$4.14
Total Benefits per Funder Dollar	$0.62	$1.81	$2.61
Federal Government Benefits per Federal Dollar	-$0.25	-$0.02	$0.03

HFH AmeriCorps produced strong returns for the medium- and long-term scenarios when benefits to HFH AmeriCorps members, HFH homeowners and household members, state/local governments, and other non-federal government stakeholder groups are included. This is indicated by the results of the *total benefits per federal dollar* and the *total benefits per funder dollar* ROI calculations for these two scenarios.

[10] 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.

In the short-term scenario—where benefits for only one year post-program are included—the ROI results indicate that costs outweigh the benefits in the first year after the program. A negative ROI or one 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 often requires several years of benefits to recoup the initial investment and generate positive returns, as indicated in the results for the first two ROI calculations for the medium- and long-term scenarios. During the program, AmeriCorps members gain the experience, skills, and knowledge that result in future benefits, such as improved employment and wages, which can be sustained throughout their working years. The results for the short-term scenario indicate that every $1 invested by the federal government results in a return of $0.92 to all stakeholders combined. When considering the program costs of all funders, for every $1 invested there is a return of $0.62 to all stakeholders combined. Moreover, for every $1 the federal government invests, the federal government loses its initial $1 investment plus an additional $0.25.

In the medium-term scenario, all stakeholder groups realized a combined return of $2.80 for every $1 invested by the federal government in the HFH AmeriCorps program. Moreover, for every $1 invested in the HFH AmeriCorps program from all funders, $1.81 is returned to both society and government combined. When considering only benefits to the federal government, the federal government loses its initial $1 investment plus an additional $0.02.

In the long-term scenario, the ROI for *total benefits per federal dollar* and *total benefits per funder dollar* are $4.14 and $2.61, respectively. When considering only the federal government return for every $1 of federal investment, the federal government realizes a return of $0.03 for the long-term scenario. Namely, for every $1 invested, the federal government loses $0.97 in potential tax revenue gains and cost savings.

The magnitude and direction of the ROI calculations are driven by several factors:

- **High educational attainment of HFH AmeriCorps members prior to service.** HFHI provided data indicating HFH AmeriCorps members' pre-service educational attainment levels for the 2019–2020 program year. Of the 345 HFH AmeriCorps members who served during this program year, 76 percent had a college degree prior to national service with 64 percent having a graduate degree. According to the U.S. Bureau of Labor Statistics (2020), gains in educational attainment—especially obtaining advanced degrees—translate to decreased unemployment and higher earnings. The high levels of educational attainment of this cohort of HFH AmeriCorps members significantly increased the professional opportunity cost to HFH AmeriCorps members. Specifically, this analysis calculated HFH AmeriCorps members' pre-service unemployment rate to be 2.6 percent using demographics data provided by HFHI and data from the Current Population Survey's Annual Social and Economic (ASEC) Supplement. The analysis also used the same data sources to estimate HFH AmeriCorps members' pre-service pre-tax annual earnings at $54,782 per person. In other words, if these HFH AmeriCorps members *did not serve* with HFH AmeriCorps, this analysis estimated that 97.4 percent would have been employed, each making an average salary of almost $55,000 annually. With this low unemployment rate and high earnings amount, the professional opportunity cost to HFH AmeriCorps members—for the one year service term—is significantly more than the total HFH AmeriCorps program cost for one year ($13,479,679 vs. $8,795,423). Since some variation of the professional opportunity cost is considered in each ROI calculation—across the three scenarios—this reduced the benefits attributed to the HFH AmeriCorps program.

- **Medium- and long-term accumulation of benefits.** In the short-term, the three ROI calculations resulted in losses because only one year of post-program employment and earnings gains as well as other program benefits are factored in while the entire program cost is considered. Additionally, the short-term scenario does not include any lifetime benefits in terms of reduced spending on corrections, public assistance, and social insurance or increased tax revenue. As these benefits accumulate over time, the analysis shows positive returns. This is indicated by the ROI results in the medium- and long-term scenarios (15 and 30 years post-program, respectively) when total benefits are considered.
- **The employment outcomes of HFH AmeriCorps members.** According to Friedman et al. (2016), the percentage of AmeriCorps members unemployed was 5 percentage points lower six months after serving in AmeriCorps versus six months before. This gain in employment results in increased earnings and tax revenue.
- **The educational attainment outcomes of HFH AmeriCorps members**. AmeriCorps State and National members and some AmeriCorps VISTA members receive an education award after serving in an AmeriCorps program; the award is used by a portion of members to help pay for post-secondary degrees post-service. The additional educational attainment resulting from the use of the education award generates additional lifetime earnings for HFH AmeriCorps members and additional tax revenue and savings for government.

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 HFH AmeriCorps serves as a catalyst for other funding, specifically that received by HFH host sites. This additional funding—amounting to $2.9 million for HFH AmeriCorps for the most recent program year—allowed the HFH AmeriCorps program to serve more families and communities 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 HFH AmeriCorps and thus to a greater impact as more individuals and families are served.

Introduction

AmeriCorps contracted with ICF Incorporated, LLC (hereafter ICF) to explore 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 subject of ROI studies in Fiscal Year 2021: Habitat for Humanity AmeriCorps, Washington Conservation Corps, YouthBuild AmeriCorps, and Birth & Beyond's Home Visitation Program. This ROI study measures the benefits of Habitat for Humanity (HFH) AmeriCorps against its costs based on the analytical approach and data sources specified in its respective feasibility study.

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. It 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 potential set of comparable ROI estimates for Habitat for Humanity AmeriCorps.
- ***ROI Methodology*** outlines how this analysis used various data sources to monetize benefits derived from Habitat for Humanity AmeriCorps, describes its associated program costs, and explains how opportunity costs were calculated.
- ***Benefits, Forgone Benefits (opportunity costs), 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

Habitat for Humanity International, Inc. (HFHI) is a non-profit homebuilding program that operates on a national and international scale. Specifically, it serves communities in all 50 United States and in more than 70 countries worldwide. It provides low-income families living in substandard housing with volunteer-built, rehabilitated, or repaired homes and affordable mortgages. HFHI's U.S. arm coordinates and organizes the efforts of more than 1,200 local Habitat for Humanity (HFH) organizations (i.e., affiliate sites).[11] These U.S. affiliate sites work with HFHI's national office to coordinate home construction, building site and partner selection, fundraising, and mortgage servicing. Some affiliate sites leverage the human capital and people power of AmeriCorps members in both rural and urban areas nationwide.

Families in need of decent and affordable housing apply for HFH homeownership with U.S. affiliate sites. If they qualify, homeowners contribute their own labor—termed "sweat equity"—and work alongside AmeriCorps members and non-national service member volunteers to build or improve their homes. HFH homeowners also pay an affordable mortgage with no interest, receive financial education, and participate in home maintenance classes.[12] Through this program, HFH homeowners become more self-reliant, learn to meet the demands of owning a home, and build better lives for themselves and their families.

HFH homes are modestly sized to keep construction costs low, while meeting homeowners' needs. Beyond home construction, HFH offers program services that facilitate aging in place among the senior population. HFH also spearheads neighborhood revitalization efforts, helps communities rebuild after natural disasters, and advocates on housing policies.[13] It should be noted that HFH's policy advocacy is not funded by AmeriCorps.

HFH host sites are U.S. affiliate sites that leverage AmeriCorps State and National and AmeriCorps VISTA members and they comprise the HFH AmeriCorps program.[14] HFH AmeriCorps State and National members perform direct services. These include leading homebuilding and renovation efforts, planning and coordinating community projects, assisting in structure demolition, recruiting and educating qualified families, providing financial education and home maintenance classes, and training non-national service member volunteers. HFH AmeriCorps VISTA members provide indirect services that

[11] Habitat for Humanity International, Inc. (n.d.). Frequently asked questions. Retrieved from https://www.habitat.org/about/faq

[12] Please see these websites for more information: https://www.habitat.org/our-work/financial-education and https://www.habitat.org/stories/steps-homeownership.

[13] Habitat for Humanity International, Inc. (n.d.). Our work. Retrieved from https://www.habitat.org/impact/our-work

[14] Of note, some Habitat affiliate sites use AmeriCorps members while others do not. Affiliate sites that use AmeriCorps members are called host sites since they "host" AmeriCorps members for a service term. Affiliate sites that do not host AmeriCorps members care called non-host sites.

strengthen and build the capacity of host sites. Such activities include documenting construction operations, maintaining donor engagement, contributing to resource and project development, and implementing family and volunteer recruitment strategies.[15]

Population Served

The families who partner with HFH affiliate sites to build their homes or improve their housing structures are selected at the local level and reside in both rural and urban communities nationally and internationally. The basis for a family's selection is their need for safe and affordable housing, their willingness to partner with HFHI and work alongside volunteers (e.g., HFH AmeriCorps members, non-national service member volunteers, etc.), and their ability to repay the no-interest mortgage.[16] Additionally, these families predominantly have low incomes, live in sub-standard or overcrowded housing, or devote a large portion of their disposable income to housing costs. Since 1976, HFHI has helped more than 35 million households build or improve their homes worldwide. In FY2020 alone, more than 5.9 million people received HFHI homebuilding and repair services.[17]

In the U.S., families served are predominantly low-income (i.e., at or below the federal poverty line), belong to racially underrepresented groups (e.g., African American, Hispanic, etc.), and have at least one dependent under 18 years old in the home. With regard to targeting those with economic need, affiliate sites make reasonable efforts to serve those whose income does not exceed 60 percent of the area median income (AMI), as defined for the affiliate site's service area by the U.S. Department of Housing and Urban Development. Affiliate sites are also in no case permitted to select households with incomes above 80 percent of the AMI and are encouraged to serve those whose income falls within the lowest AMI range possible.[18]

For the 2019–2020 program, HFHI provided data that indicated HFH AmeriCorps built 803 HFH homes and served 2,364 individuals as shown in Table 1. This represents 7.6 percent and 8.5 percent of all the HFH homes and individuals served through HFHI in the U.S. during the most recent program year, respectively. Table 1 also delineates selected demographics of HFH homeowners served by HFH AmeriCorps for this program year and the geographic distribution of HFH AmeriCorps homebuilding activities across the U.S. Specifically, HFH AmeriCorps predominantly served families and individuals in the Southern and Western regions of the nation. Additionally, most of the individuals and HFH homeowners served by the HFH AmeriCorps program either had dependents

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[15] Habitat for Humanity. (n.d.). The AmeriCorps experience. Retrieved from https://www.habitat.org/volunteer/long-term-opportunities/americorps/americorps-experience

[16] Habitat for Humanity. (n.d.). Habitat homeowners. Habitat for Humanity. https://www.habitat.org/housing-help/habitat-homeowners

[17] Habitat for Humanity International, Inc. (n.d.). Annual Report FY2020. https://www.habitat.org/sites/default/files/documents/HFHI_AR_20_FINAL_6NOV.pdf.

[18] This information was provided directly by HFHI through ICF's personal communication with and data request to HFHI in 2021.

under 18 years old living in the home or were 65 years old or older. HFH AmeriCorps also builds homes and provides services to those with disabilities, veterans, and other disadvantaged groups.

Table 1. Selected Demographic Characteristics of HFH Homeowners and Geographic Region Distribution of Program Activities for Most Recent Program Year

Characteristic	All HFH Homes Built in the U.S.	HFH Homes Built by HFH AmeriCorps	Percent of Total Homes Built (%)	All Individuals Served in the U.S.	Individuals Served by HFH AmeriCorps	Percent of Total Individuals Served (%)
Selected Demographics of HFH Homeowners						
Dependents under age 18 living in home	3,851	376	9.8%	12,820	1,334	10.4%
Disabled	3,044	161	5.3%	6,904	384	5.6%
Military or Veteran	960	55	5.7%	2,184	130	6.0%
Over 65 Years Old	4,142	264	6.4%	8,886	602	6.8%
Disaster-affected	1,022	43	4.2%	2,270	140	6.2%
Geographic Region						
Midwest	4,397	137	3.1%	11,050	404	3.7%
Northeast	624	58	9.3%	1,688	186	11.0%
South	3,602	253	7.0%	10,212	694	6.8%
West	1,935	330	18.3%	4,864	1,080	22.2%
Total	**10,558**	**803**	**7.6%**	**27,814**	**2,364**	**8.5%**

Source: HFHI

HFH Evaluation History

The two evaluations discussed below provide insight into the impacts of HFH AmeriCorps on AmeriCorps members, HFH homeowners, and HFH household members.

Viola et al. (2018): Evaluation of Habitat for Humanity AmeriCorps Program 2016–2019

HFH contracted third-party evaluators to conduct an external evaluation of its AmeriCorps program from 2016–2019. This evaluation updated HFH's 2013–2016 external evaluation (Olson et al., 2016) with new data from the 2016–2018 program years. This updated evaluation used survey data collected from three stakeholder groups:

- HFH host sites (that leveraged AmeriCorps members) as well as a matched comparison group of HFH non-host sites (that did not leverage AmeriCorps members)
- AmeriCorps State and National and VISTA members who served at HFH host sites during the study period
- AmeriCorps member alumni from the HFH AmeriCorps program

Similar to the previous version of this study, the updated version used a quasi-experimental design to match host and non-host sites based on their annual budget expense. This research design statistically tested the differences in organizational outcomes between the two groups during the three-year period. Additionally, the evaluation analyzed survey results from host sites concerning the perceived value-add of members. It also included survey results from HFH AmeriCorps members on their skill and social capital gains and survey results from HFH AmeriCorps member alumni regarding the impact of service on their career trajectory and knowledge gains. The surveys for host and non-host sites were collected in the fall of 2018. The surveys of AmeriCorps members that served during the study period were collected in August 2017 and again in August 2018. Results for the one-time HFH AmeriCorps member alumni survey were collected in September 2018.

According to the findings, compared to non-host sites over a three-year period, host sites on average:

- Built 4.99 more HFH homes (20.36 vs. 15.37); this finding was nearly statistically significant.
- Rehabbed 8.24 more homes (15.35 vs. 7.11); this finding was statistically significant.
- Engaged 63 more non-national service member volunteers (1,499 vs. 1,436); this finding was statistically significant.

Additionally, Table 2 shows the breakdown of the industries HFH AmeriCorps member alumni reported to be employed in following their service term. Results indicated that more than 75 percent of member alumni reported working in housing, construction, or other non-profit work after serving in the HFH AmeriCorps program.

Table 2. Distribution of Industries HFH AmeriCorps Alumni Became Employed in

Industry	Percent (%)*
Local habitat organization/HFHI	27%
Construction/Home remodeling	19%
Non-profit	18%
Affordable housing/homeless nonprofit	14%
Education	8%
Private Sector	6%
Government/Public Sector	5%
Healthcare	4%
Total	**100%**

*Sample size was 181 HFH AmeriCorps member alumni. Numbers may not sum due to rounding.

Mattessich et al. (2015): Impacts of Habitat for Humanity Homeownership: Connections to Quality of Life

HFH Minnesota contracted with Wilder Research to carry out a 2015 statewide study. The study analyzed the connection between HFH homeownership and the homeowner's and other household members' quality of life. Leveraging survey data, this report highlights the short- and long-term benefits that HFH homeowners and household members received due to moving into an HFH home. These benefits were related to personal safety, health, children's and adults' education, employment, social connectedness, and decreased use of government assistance. A sample of 402 HFH homeowners—who moved into their homes between 1989 and 2014—were surveyed. Results were analyzed overall, by geographical region, and by owners' longevity in their homes (i.e., lived in their HFH home for more than five years or for five years or less). The study also reported demographic information about the sample. This included items such as homeowners' race/ethnicity, family characteristics, gender, and marital status.

Relevant survey results from the study include the following:

- Of HFH homeowners who reported they themselves or a household member had a respiratory illness prior to moving into an HFH home, 57 percent indicated their condition improved after moving into an HFH home.
- Twenty-five percent of surveyed HFH homeowners reported that they received federal rental assistance prior to moving into their HFH home and indicated that they no longer did after moving.

Selection of HFH AmeriCorps for the AmeriCorps ROI Project

ICF recommended making the HFH AmeriCorps program the subject of an ROI study based on the findings from Viola et al. (2018) that documented strong program productivity and capacity outcomes. These were related to home construction, home rehabilitation, and volunteer recruitment for HFH affiliate sites that utilized AmeriCorps members. HFH is also a nationwide program that has received support from AmeriCorps—in terms of funding and deployed members—for several years. It targets and serves low-income families to ultimately help bring them out of poverty which aligns with AmeriCorps's mission of improving lives and strengthening communities. An ROI study for this program would also pioneer strategies for monetizing outcomes associated with homebuilding and home rehabilitation activities. These activities would be relevant to assessing an ROI for disaster recovery and relief services, another AmeriCorps focus area.

Comparable ROI Estimates

ROI studies of other programs that offer similar services provide context for a potential set of ROI estimates for HFH AmeriCorps.

Drabo et al. (2021) completed an ROI analysis of Bon Secours Hospital's House for Health program. This is a hospital-sponsored affordable housing program in Baltimore, Maryland that purchases, re-purposes, and develops units of affordable housing in communities with high concentrations of poverty and rising rates of vacant homes. At the time of the study, Bon Secours owned 801affordable housing units and through the program, provided reduced-rent housing along with wrap-around support services to occupants who were predominantly low-income families, individuals with disabilities, and seniors. The analysis considered the social, environmental, and economic benefits of the program and reported that the hospital's annual program expenses for maintenance, staffing, utilities, and other services totaled $5.7 million. The authors also noted that the initial $107 million investment to buy and renovate the affordable housing units was largely paid for by mechanisms such as low-income housing tax credits. Results indicated the program generates between $1.30 and $1.92 of social return in the community for every dollar in yearly operating costs.

As part of its findings, Mattessich et al. (2015) included a government assistance cost-benefit analysis. To quantify the reduction in government assistance program use due to HFH homeownership, the authors attached a monetary value to the percent reduction in individual government assistance program use reported by surveyed HFH homeowners who moved into their HFH home between 2009 and 2014. This analysis only calculated government assistance program savings for two regions in Minnesota: greater Minnesota and the Twin Cities. These findings were then scaled to the HFH homeowner population in the entire state. Savings as a result of HFH homeownership were calculated for the following government assistance programs: medical assistance and/or MinnesotaCare (i.e., healthcare), energy assistance, Section 8 housing rental assistance, Minnesota Family Investment Program (i.e., welfare), and food support (e.g., SNAP, WIC, etc.). Results indicated that 2,200 HFH homeowners in Minnesota were estimated to use between $6.4 and $9.3 million less in government assistance every year due to moving into an HFH home.

ROI Methodology

This study focuses on AmeriCorps' contribution to HFHI programing. For that reason, only benefits and costs related to the activities and positions of HFH AmeriCorps State and National and HFH AmeriCorps VISTA members (i.e., the HFH AmeriCorps program) are included in this methodology.

The methodology for the HFH AmeriCorps ROI study consisted of the following components:

1. **Measuring and monetizing program benefits**. This included using data from previous evaluations and other third-party sources to determine the benefits to HFH homeowners, HFH household members, HFH AmeriCorps members, government, and other relevant stakeholders. The benefits realized across stakeholder groups include:

    - **HFH homeowners.** HFH homeowners benefit from cost savings realized from buying a new home and for home improvements.
    - **HFH household members.** HFH household members benefit from out-of-pocket (OOP) medical cost savings due to their improved respiratory health after moving into an HFH home.
    - **Private insurance companies.** Private insurance companies benefit from medical cost savings due to the improved respiratory health of HFH household members.
    - **Other healthcare payers.**[19] Other healthcare payers benefit from medical cost savings due to the improved respiratory health of HFH household members.
    - **HFH AmeriCorps members**. HFH AmeriCorps members benefit from:
        a) living allowances, stipends, and education awards
        b) increased earnings due to reduced unemployment
        c) increased lifetime earnings due to increased post-secondary education derived from the use of education awards
    - **Government**. Government benefits from income, Social Security, and Medicare tax revenue from HFH AmeriCorps members' increased earnings, and sales tax revenue from the increased economic activity that results from those increased earnings. Government also benefits from reduced spending on corrections, public assistance, and social insurance and increased tax revenue associated with the increased educational attainment of HFH AmeriCorps members that is derived from their use of education awards

[19] Other healthcare payers include those such as the Department of Veterans Affairs (excluding TRICARE), Indian Health Services, community and neighborhood clinics, worker's compensation, homeowner's or liability insurance, and others (AHRQ, 2021).

post-service. Finally, government benefits from tax revenue from HFH AmeriCorps members' living allowances, stipends, and education awards, cost savings due to HFH homeowners' reduced federal rental assistance use, and Medicare and Medicaid cost savings due to the improved respiratory health of HFH household members.

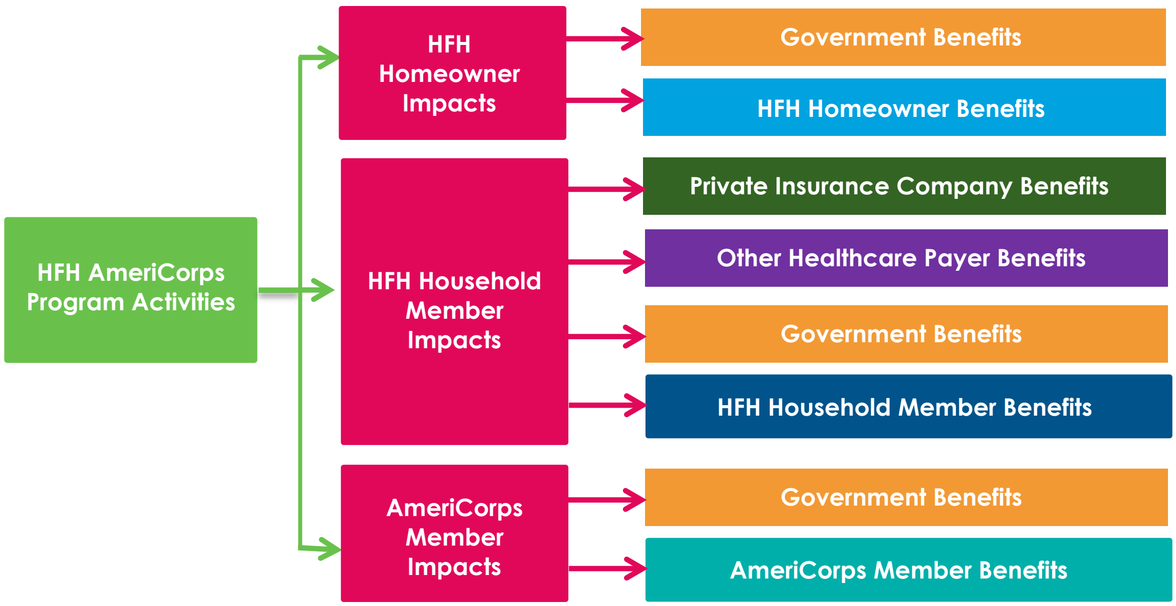
This ROI analysis monetized HFH AmeriCorps benefits in 2020 dollars.

2. **Estimating forgone benefits (opportunity costs).** This ROI analysis estimated two types of forgone benefits. The first was the professional opportunity cost to HFH AmeriCorps members for their period of national service, during which they could have earned more pay by doing other work. This included both the forgone earnings of HFH AmeriCorps members and the associated tax revenue for government. The second was the investment opportunity cost for HFH AmeriCorps program funding that could have been used for other purposes. The analysis estimated the investment opportunity cost for both government and private funders based on the forgone return of investing program funds into U.S. Treasury bonds. The rates of return for U.S. Treasury bonds provide a market-based estimate of return for low-risk investments. For the ROI estimates, the analysis subtracted forgone benefits from program benefits to calculate net benefits. The net benefits were then compared to program costs.
3. **Assessing program costs**. HFHI provided HFH AmeriCorps program costs for the 2019–2020 program year. Only the program costs that support the activities and positions of HFH AmeriCorps State and National and HFH AmeriCorps VISTA members (i.e., the HFH AmeriCorps program) are included in this study. The program costs included in this ROI are comprised of:
   - the expected education award amount HFH AmeriCorps members will collectively use post-service
   - the AmeriCorps State and National and AmeriCorps VISTA grants supplied by AmeriCorps
   - match funding (host site fees) received from HFH host sites paid to HFHI for hosting HFH AmeriCorps members
4. **Calculating the ROI**. The ROI analysis included 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 dollar*[20]
   - *Federal government benefits per federal dollar*

[20] The different funder groups whose investment is in this calculation include the federal government (i.e., AmeriCorps) and HFH host sites.

This analytical framework includes only those benefits that could be reasonably monetized given the available data, and that likely would not have occurred without the HFH AmeriCorps program. Figure 1 shows how HFH AmeriCorps activities can result in HFH homeowner, HFH household member, private insurance company, other healthcare payer, HFH AmeriCorps member, and government benefits.

Figure 1. Benefits among Stakeholder Groups Derived from HFH AmeriCorps



Available data established that HFH AmeriCorps members enjoy earnings impacts as a result of serving with HFH AmeriCorps. 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:[21]

- **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.

[21] These three scenarios consider varying durations of how long increased employment and earnings benefits last for HFH AmeriCorps members. They also consider varying durations for lifetime benefits that stem from HFH AmeriCorps. For example, lifetime benefits in terms of decreased public assistance, social insurance, and corrections costs result from HFH 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.

- **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 2020 dollars.[22] 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 HFH 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 2020 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 Cost), and Program Costs

This analysis monetized an array of benefits and included HFH AmeriCorps program costs and expected opportunity costs—all in 2020 dollars—to assess the ROI of HFH AmeriCorps. Additional details on the methodology employed and the calculations used for this analysis are in Appendix B.

Program Benefits

Outcomes of the HFH AmeriCorps program resulted in monetizable benefits to several stakeholders. Table 3 summarizes these benefits and data sources by stakeholder group.

Table 3. Benefits Realized from the HFH AmeriCorps Program by Stakeholder Group

Stakeholder Group	Benefits	Data Sources*
HFH Homeowners	• Cost savings in buying a new home • Cost savings in home rehabilitation work	• HFHI[23] • National Association of REALTORS (2020) • Viola et al. (2018) • Esajian (2021) • Characteristics of New Housing (U.S. Census Bureau, n.d.)

[22] 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).

[23] Unless otherwise cited, all information provided directly by HFHI for this report was received through ICF's personal communication with HFHI in 2021.

Stakeholder Group	Benefits	Data Sources*
HFH Household Members	• OOP medical cost savings due to improved respiratory health	• HFHI • Viola et al. (2018) • Mattessich et al. (2015) • Consumer Price Index (CPI; U.S. Bureau of Labor Statistics, n.d.) • Medical Expenditure Panel Survey (MEPS; AHRQ, 2021)
Private Insurance Companies & Other Healthcare Payers	• Medical cost savings due to improved respiratory health of HFH household members	• HFHI • Viola et al. (2018) • Mattessich et al. (2015) • CPI (U.S. Bureau of Labor Statistics, n.d.) • MEPS (AHRQ, 2021)
HFH AmeriCorps Members	• Additional earnings from reduced unemployment • Additional lifetime earnings from increased educational attainment as a result of education awards • Post-tax living allowances, stipends, and education awards	• HFHI • Friedman et al. (2016) • Trostel (2015) • Current Population Survey Annual Social and Economic Supplement (ASEC; U.S. Census Bureau, n.d.) • CPI (U.S. Bureau of Labor Statistics, n.d.) • National Center for Education Statistics (NCES) (2019) • NCES (2020) • AmeriCorps (n.d.) • U.S. Bureau of Labor Statistics (2019) • Viola et al. (2018)

Stakeholder Group	Benefits	Data Sources*
Government	• Tax revenue from increased earnings by HFH AmeriCorps members post-program and sales tax revenue from the induced increased economic activity • Tax revenue from living allowances, stipends, and education awards • Reduced lifetime spending on corrections, public assistance, and social insurance from increased educational attainment by HFH AmeriCorps members as a result of education awards • Lifetime tax revenue from increased educational attainment by HFH AmeriCorps members as a result of education awards • Reduced federal rental assistance use by HFH homeowners due to HFH homeownership • Medicare and Medicaid medical cost savings due to improved respiratory health of HFH household members	• HFHI • Viola et al. (2018) • Mattessich et al. (2015) • CPI (U.S. Bureau of Labor Statistics, n.d.) • MEPS (AHRQ, 2021) • Consumer Expenditure Survey (U.S. Bureau of Labor Statistics, 2021) • Federal and state income tax rates (El-Sibaie, 2019; Loughead, 2020) • Social Security tax rate (Social Security Administration (SSA), 2020) • Medicare tax rate (SSA, 2020) • Combined state and average local sales tax rates (Cammenga, 2020) • Trostel (2015) • CPI (U.S. Bureau of Labor Statistics, n.d.) • AmeriCorps (n.d.) • American Community Survey (2019) (ACS; U.S. Census Bureau, n.d.) • Center on Budget and Policy Priorities (CBPP) (2019) • Friedman et al. (2016)

*Usage of these data sources is discussed in more detail in the subsequent sections. Tax rates used on HFH AmeriCorps members' increased earnings, forgone earnings, education awards, stipends, and living allowances are national averages. See Appendix B for a detailed discussion.

Cost Savings in Home Buying and Home Rehabilitation Work (Benefits to HFH Homeowners)

As a result of HFH AmeriCorps, HFH homeowners experienced cost savings related to buying a home and having rehabilitation work completed on their existing home. Specifically, Viola et al. (2018) found that HFH AmeriCorps members increased the capacity and productivity of host sites (that leveraged HFH AmeriCorps members) compared to affiliate sites that did not utilize HFH AmeriCorps members (i.e., non-host sites). Results indicated that host sites built on average 4.99 more HFH homes and rehabbed 8.24 more homes than non-host sites during the three-year study period after controlling for sites' annual budget expense. Given these results, on an annual basis, host sites built on average 1.66 more HFH homes and rehabbed 2.75 more homes compared to non-host sites. To estimate the number of additional homes built and rehabbed nationwide by HFH host sites for the most recent program year, this analysis multiplied the number of HFH host sites in the U.S. by 1.66 and 2.75, respectively.

This analysis conservatively assumed that each home built and rehabbed had one homeowner. Thus, the number of additional homes built and rehabbed nationwide represents the number of HFH homeowners who purchased a new HFH home or had rehab work completed on their existing home, respectively. Additionally, this methodology attributed a portion of HFH host sites' output to national service. It captured the value of only the "additional" homes that host sites built and rehabbed based on the comparison of these productivity outcomes between host sites and non-host sites in Viola et al. (2018).

HFH AmeriCorps members play a vital role in recruiting, training, and managing non-national service member volunteers at their respective HFH host sites. Viola et al. (2018) reported that HFH host sites engaged 63 more non-AmeriCorps volunteers on average over a three-year period than non-host sites. This underscored the impact of national service on host sites' capacity-building efforts. The impact of this additional volunteer base was assumed to have contributed to the additional new homes built and rehabbed. To avoid double-counting benefits, the monetary contribution of this additional capacity to host sites was not quantified separately.

Cost Savings Due to Additional HFH Homes Built

To monetize the cost savings HFH homeowners realized when purchasing a home, this analysis subtracted the average cost of building a HFH home (which was the average selling price to HFH homeowners) from the median selling price of a similar home in the U.S. HFHI provided the average square footage and the average cost (i.e., selling price) per square foot of an HFH home in the U.S.[24] The product represents the average selling price of a HFH home for the 2019–2020 program year. The analysis then multiplied the average square footage of a HFH home by the median selling price per square foot of a home in the U.S. according to the National Association of REALTORS (2020). The product represents the median sales price a HFH homeowner would have paid for a similarly-sized home if they did not purchase a HFH home. The analysis then applied the difference in selling prices to the number of additional HFH homes built per HFH host site—as reported by Viola et al. (2018)—and to the number of HFH host sites in the U.S. to calculate the total savings realized by HFH homeowners.

[24] The median selling price per square foot for U.S. homes may differ slightly from that for HFH AmeriCorps homes, given the geographic distribution that HFH AmeriCorps operates in. For example, as shown in Table 1, the greatest proportion of HFH AmeriCorps homes (i.e., 44 percent) were built in the West region (among the four U.S. census regions) during the most recent program year. The West region has higher median housing costs than the U.S. in general. Thus, as done in this ROI analysis, using the U.S. median may have led to a lower estimated benefit to HFH homeowners—in the form of cost savings—for additional HFH homes built. Namely, using the U.S. median would result in an ROI estimate slightly lower than the actual.

Cost Savings Due to Additional Homes Rehabbed

To monetize HFH homeowners' cost savings in home rehabilitation work, this analysis subtracted the average cost of rehabilitation work for an HFH home from that of a similarly-sized home in the U.S. To calculate the latter, the analysis divided the average cost of home rehabilitation work in the U.S. according to Esajian (2021) by the median square footage of a U.S. house in 2019 (U.S. Census Bureau, n.d.). This represents the U.S. market rate for home rehabilitation work per square foot. To calculate the average rehabilitation cost for HFH homes, the analysis used the aforementioned selling price data to impute the average cost of rehab work for an HFH home per square foot. The difference between the market and HFH average rehabilitation costs per square foot represents the money saved by HFH homeowners by utilizing the resources and manpower of HFH AmeriCorps members. The analysis then multiplied the per square foot costs savings by the average square footage of an HFH home, the number of HFH host sites, and the number of additional homes rehabbed annually as stated in Viola et al. (2018). This represents nationwide cost savings to HFH homeowners with regard to home rehabilitation activities for the most recent program year.

Medical Cost Savings Due to Improved Respiratory Health of HFH Household Members (Benefits to Multiple Stakeholders)

Mattessich et al. (2015) found that 36 percent of HFH homeowners reported that they or someone in their household had a respiratory or lung illness (such as asthma or respiratory allergies) prior to moving into their HFH home. Of that subset, 35 percent reported that their or their household member's condition was "much better," 22 percent reported it was "somewhat better," 29 percent reported "there was no change," 10 percent reported it was "somewhat worse," and 4 percent reported it was "much worse" since moving into their HFH home. Qualitative data from Mattessich et al. (2015) underscored how HFH homes had less mold, less dusty conditions, and provided an overall healthier living environment. The net improved respiratory health reported by HFH homeowners leads to medical cost savings realized by the following stakeholders: HFH household members themselves, private insurance companies, the federal government, and other healthcare payers.[25]

To monetize the net improved respiratory health of HFH household members, this analysis used the average number of additional new homes built by HFH host sites provided by Viola et al. (2018) (e.g., 1.66). This outcome was multiplied by the number of U.S. host sites nationwide. The analysis then multiplied this product by 36 percent to determine the national population of HFH household members who had a respiratory illness before moving into their HFH home. The analysis then multiplied this product by 35 percent, 22 percent, 10 percent, and 4 percent, separately. These calculations estimated the national HFH population that reported their pre-moving respiratory condition had gotten "much better," "somewhat better," "somewhat worse," and

[25] Other healthcare payers include those such as the Department of Veterans Affairs (excluding TRICARE), Indian Health Services, community and neighborhood clinics, worker's compensation, homeowner's or liability insurance, and others (AHRQ, 2021).

"much worse" since moving, respectively. This resulted in four distinct populations of HFH household members who experienced some degree of improvement or deterioration in their respiratory health since moving into their HFH home.

These health outcomes were monetized in terms of medical cost savings or losses using data from the Medical Expenditure Panel Survey (MESP). Specifically, the analysis used the average annual cost for someone that has chronic obstructive pulmonary disease (COPD), asthma, or other respiratory conditions in the U.S. in 2018 (AHRQ, 2021). For HFH household members that reported an improvement in respiratory health, the analysis assumed that those HFH household members would see a cost reduction. Namely, they would still have to pay some amount of the annual cost from AHRQ (2021) given their condition was not eradicated. For HFH household members that reported their respiratory health worsened, the analysis assumed that those HFH household members would experience an increase in costs. This analysis defined the percentage reduction or increase in this cost for each of the four HFH household member populations using statistical methods. These methods leveraged the response distribution for this survey question which was provided by Mattessich et al. (2015). The analysis multiplied the resulting cost reduction and increase percentages by the annual cost from AHRQ (2021) and then by the HFH household member population whose condition got "much better," "somewhat better," "somewhat worse," and "much worse," separately. When summed, this determined the total cost savings related to HFH household members' net improved respiratory health since moving into an HFH home.[26]

The portion of medical cost savings paid out-of-pocket (OOP) represented a benefit to HFH household members themselves. Private insurance companies and other healthcare payers also realized cost savings due to HFH household members' net improved respiratory health. The portion of these costs paid by Medicare or Medicaid also represented savings to the federal government. This payment source segmentation was determined by using 2018 MEPS data (AHRQ,2021).[27]

[26] This analysis accounted for any random instances of HFH household members reporting improved or deteriorating respiratory health that were not attributable to moving into an HFH home by capturing both medical cost savings and additional medical costs incurred due to improved and worsening respiratory health, respectively.

[27] For all stakeholder groups that experience medical cost savings due to HFH household members' improved respiratory health after moving into an HFH home, the impact on healthcare providers is not captured in this ROI analysis. This analysis assumes that these healthcare providers are operating at 100 percent capacity. Thus, when they lose patients due to the favorable impacts of HFH, it is assumed they will serve another individual needing care and that they are not losing revenue.

Post-Tax Living Allowances, Stipends, and Education Awards (Benefits to HFH AmeriCorps Members)

Some member-specific benefits realized due to AmeriCorps members serving with HFH AmeriCorps include the post-tax living allowances AmeriCorps State and National and AmeriCorps VISTA members are allotted during their national service and the post-tax education awards or the post-tax stipends they receive after service completion. All are considered taxable income and thus result in increased government revenue.[28] Of note, only AmeriCorps VISTA members are given the option to receive an end-of-service cash stipend or an education award.[29] AmeriCorps State and National members are not offered the former as a benefit for their service. The post-tax award amounts (i.e., living allowance, stipend, and education awards used to repay student loans) were included in the ROI analysis as direct one-time benefits to HFH AmeriCorps members.

Additional Earnings from Reduced Unemployment (Benefit to HFH 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 (Friedman et al., 2016; Markovitz et al., 2008; Spera et al., 2013; Zeidenberg et al., 2016). Freidman et al. (2016) found that unemployment among AmeriCorps members six months after their period of national service was 5 percentage points lower compared to six months before.[30] To monetize this decrease in unemployment, the analysis first determined the demographic distribution of HFH AmeriCorps State and National and VISTA 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 HFHI. The analysis then proceeded to:

1. Estimate HFH 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 March 2019,
2. Use findings from Viola et al. (2018)—regarding the distribution of industries HFH AmeriCorps members reported to work in post-service—and Occupational Employment and Wage Statistics data (U.S. Bureau of Labor Statistics, 2019) to calculate HFH AmeriCorps members' weighted 25th percentile annual earnings,
3. Weigh the demographic- and industry-weighted annual earnings metrics equally to estimate the per-person earnings that were representative of HFH AmeriCorps members' demographic composition and labor profile,

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[28] The tax implications of the AmeriCorps member education award are stated here: AmeriCorps. (n.d.). Segal AmeriCorps Education Award. Retrieved from https://americorps.gov/members-volunteers/segal-americorps-education-award

[29] Please see this site for additional information: https://americorps.gov/members-volunteers/vista/benefits.

[30] See page 56 of Friedman et al. (2016).

4. Multiply the 5-percentage point reduction in unemployment from Freidman et al. (2016) to the number of HFH AmeriCorps members that served during the most recent program year to estimate the number of *additional* HFH AmeriCorps members employed post-service,
5. Multiply the per-person average annual earnings by the number of additional HFH AmeriCorps members employed to estimate the total increased earnings attributable to national service.

The earnings metrics for HFH AmeriCorps members were applied and discounted based on the short-term, medium-term, and long-term scenarios to represent net present 2020 dollars. The post-tax HFH AmeriCorps members' projected earnings represents the additional income earned by AmeriCorps members attributable to serving with the HFH AmeriCorps program.

Additional Lifetime Earnings from Increased Educational Attainment as a Result of Education Awards (Benefit to HFH 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

a) Pay for additional post-secondary educational attainment or
b) Repay student loans.

Friedman et al. (2016) reported that 46 percent of AmeriCorps State and National members and 31 percent of AmeriCorps VISTA members used their education award to pursue additional post-secondary education while 33 percent and 37 percent of them, respectively, used it to repay student loans.[31]

This analysis estimated the expected increase in lifetime earnings of HFH AmeriCorps members attributable to the use of education awards to pay for additional post-secondary schooling. Based on the findings from Friedman et al. (2016), this ROI analysis estimated the amount in post-tax education awards that HFH 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). These estimated additional post-tax lifetime earnings were included as a benefit to HFH AmeriCorps members.

Tax Revenue Generation and Reduced Spending (Benefits to Government)

The benefits of HFH AmeriCorps members, HFH homeowners, and HFH household members resulted in benefits to the various levels of government.

[31] Friedman et al. (2016). op. cit. Exhibit VIII-6.

Benefits to Government from Increased Earnings by HFH AmeriCorps Members

Government benefits from increased earnings by HFH AmeriCorps members. Those benefits included:

- **Income tax revenue from increased HFH AmeriCorps member earnings post-service.** Federal income taxes, state income taxes, Medicare taxes, and Social Security taxes were estimated for the additional pre-tax earnings of HFH 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 HFH 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 HFH AmeriCorps operates nationwide. Also, HFH AmeriCorps members may disperse to various locations following their service terms and continue to migrate over the course of their working years.

- **Sales tax revenue from the increased economic activity that resulted from increased HFH AmeriCorps member earnings post-service.** To estimate the additional sales tax revenue generated due to the additional post-tax earnings of HFH AmeriCorps members, the combined state and average local sales tax rate for the U.S.—weighted by states' populations—was calculated. This analysis applied that rate to the estimated taxable expenditures of HFH AmeriCorps members based on their post-service pre-tax earnings using Consumer Expenditure Survey data (U.S. Bureau of Labor Statistics, 2021).[32] The resulting product was then applied to the share of post-tax earnings attributable to serving with HFH AmeriCorps to estimate state and local government sales tax revenue.

[32] To calculate the estimated taxable expenditures, Consumer Expenditure Survey (CES) Table 1203 was used from 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 HFH 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.

Benefits to Government from Increased Educational Attainment by HFH AmeriCorps Members

Government benefits from increased post-secondary educational attainment by HFH AmeriCorps members. Those benefits included:

- **Tax revenue from education awards**. Education awards provided to HFH AmeriCorps members upon service completion are subject to taxes, resulting in additional government revenue. [33] 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 HFH AmeriCorps members to estimate these additional taxes. 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 & Blom, 2018; Harlow, 2003). Because HFH AmeriCorps members increased post-secondary educational attainment due to the use of the education award, government spends less. For the monetization of these benefits, the analysis paired the expected increase in post-secondary educational attainment of HFH AmeriCorps members with the expected difference in per-person lifetime government cost savings from Medicaid, SNAP, unemployment insurance, worker's compensation, and corrections for individuals with different levels of educational attainment. The latter values were provided by Trostel (2015).
- **Lifetime tax revenue from increased educational attainment as a result of education awards.** Another benefit related to HFH AmeriCorps members captured in this ROI study was the lifetime tax revenue generated from members' higher post-secondary educational attainment due to the use of the education award. Here, the estimated increase in HFH AmeriCorps members' post-secondary 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.

[33] The tax implications of the AmeriCorps member education award are stated here: AmeriCorps. (n.d.). Segal AmeriCorps Education Award. Retrieved from https://americorps.gov/members-volunteers/segal-americorps-education-award

Benefits to Government from Living Allowances and Stipends Received by HFH AmeriCorps Members

The living allowance provided to HFH AmeriCorps members during their service term and the end-of-year stipend earned by HFH AmeriCorps VISTA members upon service completion are 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 and stipend amounts received by HFH AmeriCorps members for the most recent program year. The analysis also applied a sales tax rate to the estimated taxable expenditures of HFH AmeriCorps members based on their post-tax living allowance and stipend amounts to estimate additional state and local government revenue. Of note, for the end-of-year stipend amount, federal income and Social Security taxes are withheld from the amount provided to HFH AmeriCorps members. These taxes are included in the analysis.[34]

Benefits to Government from Reduced Federal Rental Assistance Use by HFH Homeowners

According to Mattessich et al. (2015), 25 percent of surveyed HFH homeowners in Minnesota reported that they received federal rental assistance prior to moving into their HFH home and indicated they no longer did. To monetize this benefit to the federal government—which funds rental assistance programs through the U.S. Department of Housing and Urban Development (e.g., Section 8 project-based housing, public housing, housing choice vouchers, etc.)—this analysis first multiplied the number of additional HFH homes built nationwide due to HFH AmeriCorps (calculated earlier) by the 25 percent. This estimated the number of HFH households who were no longer using rental assistance since moving into their HFH home. Then using data from the Center on Budget and Policy Priorities (2019), the analysis calculated the average amount of federal rental assistance used per U.S. household receiving housing or rental assistance for 2019. The analysis applied this monetary amount to the number of HFH households no longer using rental assistance to estimate rental assistance cost savings to the federal government for the most recent program year.

Benefits to Government from Improved Respiratory Health of HFH Household Members

As mentioned in the previous section, findings from Mattessich et al. (2015) indicated net-improved self-reported respiratory health among HFH household members who had a respiratory condition prior to moving into their HFH home. This resulted in medical cost savings to several stakeholder groups, one being the federal government in terms of savings in Medicare and Medicaid costs. The portion of medical cost savings realized by the federal government was determined by using 2018 MEPS data (AHRQ, 2021). Further discussion of how this benefit was calculated can be found in Appendix B.

[34] The tax implications of the AmeriCorps VISTA member stipend (i.e., end-of-year benefit) are stated here: https://americorps.gov/members-volunteers/vista/benefits.

Forgone Benefits (Opportunity Costs)

The analysis estimated forgone benefits of both members and funders because of their participation and investment in the HFH AmeriCorps 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 HFH AmeriCorps Participants

The first opportunity cost was the professional opportunity cost to HFH AmeriCorps participants for their period of national service, during which they could otherwise be working and earning higher pay. To calculate this, this analysis estimated what HFH AmeriCorps participants would have earned if they did *not* participate in the HFH AmeriCorps program. Specifically, this analysis estimated the weighted average annual earnings of this group as well as their weighted unemployment rate using the demographic distribution of HFH AmeriCorps participants for the most recent program year and data from the Current Population Survey's Annual Social and Economic (ASEC) Supplement for March 2019. The HFH demographics included were gender, age, race/ethnicity, economically disadvantaged status, and pre-service highest level of education. The weighted average annual earnings represent the expected earnings of HFH AmeriCorps participants if they were employed, *not* participating in the HFH AmeriCorps program. The weighted unemployment rate represents how many of the HFH AmeriCorps participants would have been unemployed if they did *not* participate or serve in the HFH AmeriCorps program. These weighted metrics were first used to estimate the portion of HFH AmeriCorps program completers who would have been employed and then to calculate the aggregate earnings those employed individuals would have earned.

Some of the forgone earnings would have been paid in the form of taxes. To appropriately allocate opportunity costs between HFH AmeriCorps participants 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. These taxes combined represent what the various levels of government are forgoing in tax revenue when these individuals decide to serve and participate in the HFH AmeriCorps program instead of work.
The sum of all forgone taxes and the forgone post-tax earnings of HFH AmeriCorps participants is called the total professional opportunity cost.

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 (forgone federal income, Social Security, and Medicare taxes) are subtracted from all federal government benefits for that ROI calculation.

Investment Opportunity Cost to Funders

The second opportunity cost used in this ROI analysis was an investment opportunity cost. It estimates forgone return if all funds used to support HFH AmeriCorps during the most recent program year were invested in U.S. Treasury bonds instead. To calculate this, the analysis matched 2019 real interest rates provided by Office of Management and Budget (2020) to each of the scenarios in the ROI analysis: short-term, medium-term, and long-term.[35] 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, 1.45, and 1.5 percent, respectively. Also, the number of time periods elapsed on these bonds equaled the length of the short-term, medium-term, and long-term scenarios (1 year, 15 years, and 30 years, respectively). These bonds compound bi-annually according to Department of Treasury (n.d.).

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 done 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 HFH AmeriCorps 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 the HFH AmeriCorps program, used for this ROI analysis, include federal and required match funding and any other funding used to support program operations. The program costs are specific to funding the activities and positions of HFH AmeriCorps State and National and HFH AmeriCorps VISTA members whose outcomes are measured in this analysis.

Table 4 shows the segmentation of HFH AmeriCorps program costs by funder.[36] The federal funds included the AmeriCorps State and National grant and the AmeriCorps VISTA grant distributed to HFH host sites nationwide. Federal dollars also helped pay for the expected education award amounts granted to HFH AmeriCorps members once they completed their service term. All other funding was provided by HFH host sites. They pay HFHI a fee per HFH AmeriCorps member to host national service members at

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

[36] Program cost data were provided by the director of long term volunteer programs at HFHI.

their affiliate site. No other state/local government nor private funding supported HFH AmeriCorps during the 2019–2020 program year.

AmeriCorps (providing both the grants and the expected education award amounts) is the leading funder for the HFH AmeriCorps program, sponsoring more than two-thirds of program costs.[37] Moreover, HFH AmeriCorps's match funding—provided by host sites—was an amount equal to about 48 percent of AmeriCorps federal funds. This match provides HFH AmeriCorps with the resources to offer more services and support to low-income families than would be otherwise available only under the AmeriCorps federal funds. That translates into increased aggregate benefits realized across stakeholder groups.

Table 4. HFH AmeriCorps Costs by Funder Type

Funder	Funding Provided for the Program Year ($)	Percent of Total (%)
AmeriCorps	$5,933,696	67.5%
Host Sites (i.e., Match Funding)	$2,861,727	32.5%
Total	**$8,795,423**	**100.0%**

ROI Study Limitations

Study limitations included the use of self-reported outcomes data to determine stakeholder benefits and the ability to capture all benefits that stem from the HFH AmeriCorps program.

Limitation to Using Self-Reported Outcomes Data

Both the Viola et al. (2018) and Mattessich et al. (2015) evaluations used in this ROI analysis included outcomes data—related to HFH AmeriCorps members, HFH household members, and HFH homeowners—that were self-reported and collected through surveys. No third-party data were leveraged to corroborate what survey respondents reported. This introduced concerns related to accuracy and response bias. For instance, in Mattessich et al. (2015), HFH homeowners reported they themselves or a household member having a respiratory condition prior to moving into their HFH home and whether that respiratory condition improved, stayed the same, or worsened after moving into their HFH home. Prior to moving into their HFH home, they may or may not have been professionally diagnosed for such a medical condition. After moving into their HFH home, the status of their condition may or may not have been confirmed by

[37] The education award comes from the National Service Trust. This is a line-item in AmeriCorps's annual budget approved by Congress every year. Thus, the expected education award amounts to be realized by HFH AmeriCorps members post-service is grouped with the AmeriCorps State and National and VISTA grants as being supplied by AmeriCorps. For more information, see: https://americorps.gov/sites/default/files/documents/CNCS%20FY%202021%20Congressional%20Budget%20Justification%20w%20IG%20Message%20%28Final%29_508.pdf.

a medical professional. Additionally, outcomes from Viola et al. (2018) related to the additional HFH homes built and rehabbed due to the efforts of HFH AmeriCorps members were based on responses submitted by personnel at host sites and non-host sites. Affiliate site personnel may have referenced programmatic data using a reliable internal reporting system to answer survey questions. However, this was not confirmed.

Limitations to the Array of Benefits Captured

While Mattessich et al. (2015) captures self-reported HFH homeowner and household member outcomes, the study excludes any employment or educational attainment outcomes from these stakeholder groups that could be reasonably monetized. The inclusion of such outcomes in this ROI analysis—even if self-reported—would reap substantial benefits such as increased earnings and increased tax revenue as a result of those increased earnings. Specifically, according to the U.S. Bureau of Labor Statistics (2020), gains in educational attainment translate to decreased unemployment and higher earnings. Moreover, obtaining gainful employment provides a steady stream of income for families which in turn has significant ripple effects with regards to family stability. Specifically, research suggests that increased financial stability has positive impacts on food security, children's academic performance, children's future earnings, parents' mental health and cognitive functioning, parent-child relationships, and children's physical, emotional, and cognitive development (Duncan & Magnuson, 2013; Mani et al., 2013; Akee et al., 2018). Additional research demonstrates that affordable housing plays a critical role in providing stability to poor families and providing a pathway out of poverty, especially in the form of improving educational attainment and employment stability among household members (Cunningham & MacDonald, 2012; Brennan et al., 2014; Desmond & Gershenson, 2016). Given this, it can be inferred that owning an affordable HFH home can positively impact families' and individuals' economic well-being. Though the literature supports such benefits could be realized as a result of increased housing stability, of which HFH AmeriCorps provides, the two evaluations used in this ROI analysis do not speak to such impacts that are specific to the HFH AmeriCorps program.

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

The ROI for HFH AmeriCorps measures the benefits of the program compared to its costs to determine the return to different stakeholders. This section provides ICF's estimates of benefits, program costs, opportunity costs, and resulting ROI.

Program Benefits

Table 5 shows the estimates of monetized benefits of HFH AmeriCorps by stakeholder group for each of the three scenarios. The majority of monetized benefits are realized by HFH AmeriCorps members and HFH homeowners. In all three scenarios, both HFH AmeriCorps members and HFH homeowners combined realized eighty percent or more of program benefits.

Table 5. Program Benefits by Recipient

Recipient	Benefits by Scenario (2020$)* Short term	Medium term	Long term
HFH Homeowners (percent of total)	$11,629,389 (61%)	$11,629,389 (37%)	$11,629,389 (28%)
HFH Household Members (percent of total)	$15,137 (0%)	$15,137 (0%)	$15,137 (0%)
HFH AmeriCorps Members (percent of total)	$5,737,878 (30%)	$14,740,741 (47%)	$21,647,163 (52%)
Federal Government (percent of total)	$1,262,762 (7%)	$3,937,898 (12%)	$6,207,292 (15%)
State/Local Governments (percent of total)	$399,827 (2%)	$1,210,776 (4%)	$1,876,414 (5%)
Total (Total percent)	**$19,044,993 (100%)**	**$31,533,941 (100%)**	**$41,375,393 (100%)**

*Numbers may not sum due to rounding.

Forgone Benefits (Opportunity Costs)

Table 6 shows the breakdown of forgone benefit from the professional opportunity cost to HFH AmeriCorps members and government in net present 2020 dollars. It lists the amount of post-tax earnings members forgo and the associated taxes forgone—to serving with the HFH AmeriCorps 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 HFH AmeriCorps. The sum of these forgone federal taxes is called the federal professional opportunity cost.

Table 6. Forgone Benefits from Professional Opportunity Cost

Forgone Category	Professional Opportunity Cost Amount Across All Scenarios (2020$)
Post-Tax Earnings	$10,109,500[38]
Federal Income Taxes	$1,631,701
State Income Taxes	$507,395
Social Security and Medicare Taxes	$1,014,637
Sales Taxes	$216,446
Total	**$13,479,679**

Table 7 lists the forgone benefits from the investment opportunity costs incurred by scenario and for when:

a) Total HFH AmeriCorps funds for the program year are invested in U.S. Treasury bonds and

b) Only federal HFH AmeriCorps funds (both program and education award funding) are invested in these bonds.

Table 7 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 the HFH AmeriCorps program year analyzed began in 2019.

Table 7. Investment Opportunity Cost by Scenario and Funding Stream

Funding Stream	Forgone Accrued Interest by Scenario (2020$)		
	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 HFH AmeriCorps Funding	$114,712	$2,128,409	$4,975,404
Federal HFH AmeriCorps Funding Only	$77,389	$1,435,898	$3,356,579

[38] The forgone earnings of HFH AmeriCorps members are high given that 64 percent of HFH AmeriCorps members for the most recent program year had a graduate degree prior to serving. Such advanced levels of educational attainment resulted in an extremely low unemployment rate being calculated for this group (i.e., 2.6 percent) and greatly augmented their forgone earnings. This is because according to U.S. Bureau of Labor Statistics (2020), increased educational attainment results in reduced unemployment and higher earnings. Please see a more detailed discussion of this calculation in Appendix B.

Program Costs

Table 8 shows the cost of HFH AmeriCorps for the 2019–2020 program year by funding source. The table underscores what portion of HFH AmeriCorps funds were provided by AmeriCorps compared to other stakeholder groups (i.e., match funding from host sites). The table also highlights a further breakdown of these two funding streams, where applicable. Overall, the total cost of HFH AmeriCorps for this program year was $8.8 million. Sixty-seven percent of HFH AmeriCorps program costs (around $5.9 million) was funded by the federal government. This amount includes the AmeriCorps State and National and AmeriCorps VISTA grants and the expected education awards. The remaining 33 percent (or $2.9 million) consisted of match funding (i.e., host site fees) from host sites.

Table 8. Program Cost by Funding Source for HFH AmeriCorps

Funder	Funding Provided for the Program Year ($)	Percent of Total (%)*
AmeriCorps	**$5,933,696**	**67.5%**
Education Awards	$1,620,396	49.0%
Grants	$4,313,300	18.4%
Host Sites (i.e., Match Funding)	**$2,861,727**	**32.5%**
Total	**$8,795,423**	**100.0%**

ROI Results

Table 9 shows the benefits, forgone benefits (opportunity costs), and costs that are included in each of the three types of ROI calculations.

Table 9. Benefits, Forgone Benefits, and Costs Included in the ROI Calculations

ROI Calculation	Benefits	Forgone Benefits	Costs
Total Benefits per Federal Dollar	• All HFH AmeriCorps member, HFH homeowner, HFH household member, private insurance company, other healthcare payer, and government benefits derived from the program	• Forgone benefits from total professional opportunity cost • Forgone benefits from Federal investment opportunity cost	• AmeriCorps federal funding
Total Benefits per Funder Dollar	• All HFH AmeriCorps member, HFH homeowner, HFH household member, private insurance company, other healthcare payer, and government benefits derived from the program	• Forgone benefits from total professional opportunity cost • Forgone benefits from total investment opportunity cost	• AmeriCorps federal funding • All match funding
Federal Government Benefits per Federal Dollar	• Additional federal government tax revenue generation and reduced spending attributable to the program	• Forgone benefits from Federal professional opportunity cost • Forgone benefit from Federal investment opportunity cost	• AmeriCorps federal funding

This analysis developed ROI estimates using the three scenarios (short-term, medium-term, and long-term). As noted above, the ROI calculations compared the net benefits of the HFH AmeriCorps program with program costs to calculate the ROI. Table 10 shows the gross program benefits, forgone benefits, net benefits, and program costs of the HFH AmeriCorps program, along with the results of the three ROI calculations.

Table 10. Benefits and Costs by ROI Scenario

Benefits and Costs	ROI Scenario (2020$)		
	Short term	Medium term	Long term
Total Gross Program Benefits	**$19,044,993**	**$31,533,941**	**$41,375,393**
HFH Homeowners	$11,629,389	$11,629,389	$11,629,389
HFH Household Members	$15,137	$15,137	$15,137
HFH AmeriCorps Member Benefits	$5,737,878	$14,740,741	$21,647,163
Federal Government Benefits	$1,262,762	$3,937,898	$6,207,292
State/Local Government/other funder Benefits	$399,827	$1,210,776	$1,876,414
Total Forgone Benefits (Opportunity Costs)	**$13,594,392**	**$15,608,089**	**$18,455,084**
Forgone Benefits to Members (Forgone Earnings Post-Taxes)	$10,109,500	$10,109,500	$10,109,500
Forgone Tax Revenue from Member Earnings	$3,370,180	$3,370,180	$3,370,180
Forgone Tax Revenue to Federal Government	$2,646,338	$2,646,338	$2,646,338
Forgone Tax Revenue to State/Local Government	$723,842	$723,842	$723,842
Forgone Benefits from Funding Provided (All Funders)	$114,712	$2,128,409	$4,975,404
Forgone Investment Benefits to Federal Government from Funding Provided	$77,389	$1,435,898	$3,356,579
Forgone Investment Benefits to State/Local Government and Other Funders from Funding Provided	$37,323	$692,511	$1,618,825
Total Program Net Benefits (Total Program Gross Benefits – Total Forgone Benefits)	**$5,450,601**	**$15,925,852**	**$22,920,309**
Net Benefits to HFH Homeowners (HFH homeowners benefits)	$11,629,389	$11,629,389	$11,629,389
Net Benefits HFH Household Members HFH household members benefits)	$15,137	$15,137	$15,137
Net Benefits to Members (Member Benefits – Forgone Benefits to Members)	-$4,371,622	$4,631,241	$11,537,663
Net Benefits to Federal Government (Federal Government Benefits – Forgone Tax Revenue to Federal Government – Forgone Investment Benefits to Federal Government from Funding Provided)	-$1,460,965	-$144,338	$204,375

Benefits and Costs	ROI Scenario (2020$)		
	Short term	Medium term	Long term
Net Benefits State/Local Government and other funders (State/Local Government Benefits – Forgone Tax Revenue to State/Local Government – Forgone Investment Benefits to State/Local Government and Other Funders from Funding Provided)	-$361,338	-$205,577	-$466,253
Total Program Costs	**$8,795,423**	**$8,795,423**	**$8,795,423**
Federal Government Cost	$5,933,696	$5,933,696	$5,933,696
Non-Federal Government Costs	$2,861,727	$2,861,727	$2,861,727
ROI for Total Benefits per Federal Dollar (Total Program Net Benefits / Federal Government Costs)	**$0.92**	**$2.80**	**$4.14**
ROI for Total Benefits per Funder Dollar (Total Program Net Benefits / Total Program Costs)	**$0.62**	**$1.81**	**$2.61**
Federal Government Benefits per Federal Dollar (Net Benefits Federal Government / Federal Government Costs)	**-$0.25**	**-$0.02**	**$0.03**

Table 11 summarizes the ROI results for HFH AmeriCorps across the short-term, medium-term, and long-term scenarios. Three different ROI results are calculated for each scenario. Since two of the calculations include benefits to society (e.g., HFH AmeriCorps members, HFH homeowners, HFH household members, 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 $1.00 of investment (or program cost).[39] See Appendix B for the formulas used to calculate each ROI calculation.

Table 11. ROI Results for HFH AmeriCorps

ROI Calculation	ROI Scenario		
	Short term	Medium term	Long term
Total Benefits per Federal Dollar	$0.92	$2.80	$4.14
Total Benefits per Funder Dollar	$0.62	$1.81	$2.61
Federal Government Benefits per Federal Dollar	-$0.25	-$0.02	$0.03

[39] 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.

HFH AmeriCorps produces strong returns for the medium- and long-term scenarios when benefits to HFH AmeriCorps members, HFH homeowners and household members, state/local governments, and other non-federal government stakeholder groups are included. This is indicated by the results of the *total benefits per federal dollar* and the *total benefits per funder dollar* ROI calculations for these two scenarios.

In the short-term scenario—where benefits for only one year post-program are included—the ROI results indicate that costs outweigh the benefits in the first year after the program. A negative ROI or one 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 often requires several years of benefits to recoup the initial investment and generate positive returns. Part of the reason why the ROI calculations show losses in the short-term is because the professional opportunity cost to HFH AmeriCorps members is high given that over 60 percent of members for the most recent program year had a graduate degree pre-service. This augments the earnings they forgo due to serving with HFH AmeriCorps for one year. Additionally, as noted in the ROI methodology, lifetime benefits that stem from HFH AmeriCorps are not realized in the short-term scenario. Lastly, as stated in the ROI Study Limitations section, both employment and educational attainment outcomes for HFH homeowners or HFH household members were not included in this ROI analysis due to a lack of data; including such benefits would potentially increase the ROI results. Given this, and considering the forgone benefits in the first year (i.e., professional and investment opportunity costs), the ROI calculations for the short-term scenario all result in losses. Specifically, every $1 invested by the federal government results in a return of $0.92 to all stakeholders combined. When considering the program costs of all funders, for every $1 invested there is a return of $0.62 to all stakeholders combined. Moreover, for every $1 the federal government invests, the federal government loses its original $1 investment plus an additional $0.25.

In the medium-term scenario, all stakeholder groups realized a combined return of $2.80 for every $1 invested by the federal government in the HFH AmeriCorps program. Moreover, for every $1 invested in the HFH AmeriCorps program from all funders, $1.81 is returned to both society and government combined. When considering only benefits to the federal government, the federal government loses its original $1 investment plus an additional $0.02.

For the long-term scenario, the ROI for *total benefits per federal dollar* and *total benefits per funder dollar* are $4.14 and $2.61, respectively. When considering only the federal government return for every $1 of federal investment, the federal government realizes $0.03 for the long-term scenario. Namely, for every $1 invested, the federal government loses $0.97 in potential tax revenue gains and cost savings.

The magnitude and direction of the ROI calculations are driven by several factors:

- **High educational attainment of HFH AmeriCorps members prior to service.** HFHI provided data indicating HFH AmeriCorps members' pre-service educational attainment levels for the 2019–2020 program year. Of the 345 HFH AmeriCorps members who served during this program year, 76 percent had a college degree prior to national service with 64 percent having a graduate degree. According to the U.S. Bureau of Labor Statistics (2020), gains in educational attainment—especially obtaining advanced degrees—translated to decreased unemployment and higher earnings. The high levels of educational attainment of this cohort of HFH AmeriCorps members significantly increased the professional opportunity cost to HFH AmeriCorps members. Specifically, this analysis calculated HFH AmeriCorps members' pre-service unemployment rate to be 2.6 percent using demographics data provided by HFHI and ASEC data. The analysis also used the same data sources to estimate HFH AmeriCorps members' pre-service pre-tax annual earnings at $54,782 per person. In other words, if these HFH AmeriCorps members *did not serve* with HFH AmeriCorps, this analysis estimated that 97.4 percent would have been employed, each making an average salary of almost $55,000 annually. With this low unemployment rate and high earnings amount, the professional opportunity cost to HFH AmeriCorps members—for the one-year service term—is significantly more than the total HFH AmeriCorps program cost for one year ($13,479,679 vs. $8,795,423). Since some variation of the professional opportunity cost is considered in each ROI calculation—across the three scenarios—this reduced the benefits attributed to the HFH AmeriCorps program.
- **Medium- and long-term accumulation of benefits.** In the short-term, the three ROI calculations result in losses because only one year of post-program employment and earnings gains as well as other program benefits are factored in while the entire program cost is considered. Additionally, the short-term scenario does not include any lifetime benefits in terms of reduced spending on corrections, public assistance, and social insurance or increased tax revenue. As these benefits accumulate over time, the analysis shows positive returns. This is indicated by the ROI results in the medium- and long-term scenarios (15 and 30 years post-program, respectively) when total benefits are considered.
- **The employment outcomes of HFH AmeriCorps members.** According to Friedman et al. (2016), the percentage of AmeriCorps members unemployed was 5 percentage points lower six months after serving in AmeriCorps versus six months before. This gain in employment results in increased earnings and tax revenue.
- **The educational attainment outcomes of HFH AmeriCorps members.** AmeriCorps State and National members and some AmeriCorps VISTA members receive an education award after serving in an AmeriCorps program; the award is used by a portion of members to help pay for post-secondary degrees post-service. The additional educational attainment resulting from the use of the education award generated additional lifetime earnings for HFH AmeriCorps members and additional lifetime tax revenue and savings for government.

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 HFH AmeriCorps serves as a catalyst for other funding, specifically that received by HFH host sites. This additional funding—amounting to $2.9 million for HFH AmeriCorps for the most recent program year—allowed the HFH AmeriCorps program to serve more families and communities 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 HFH AmeriCorps 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 HFH AmeriCorps, 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 they require 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 employment status of AmeriCorps member alumni six months before, six months after, and during the summer of 2016. The authors indicated that data for the latter time-point was collected anywhere from three to 11 years after service completion depending on the AmeriCorps member alumni cohort (i.e., 2005, 2010, or 2013). Thus, instead of collecting outcome measures at a time that varied 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—it has 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 (UI) 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 HFH AmeriCorps members pursued higher education and which degrees were completed post-program, with the help of the education award. Where degree or employment outcomes data from third-party data sources (like NSC) is available, 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 HFH AmeriCorps members' service work in home construction and rehabilitation impacts the educational attainment, employment, and overall resilience of those HFH homeowners and their family members would result in a more comprehensive ROI.

Conclusion

Based upon these findings, investment in the HFH AmeriCorps program results in favorable impacts under the long- and medium-term scenarios, particularly when society and government benefits are both included. Specifically, impacts are realized by the following stakeholder groups in this ROI analysis: HFH AmeriCorps members, HFH homeowners, HFH household members, private insurance companies, other healthcare payers, and the various levels of government.

The ROI results indicate that the benefits realized across all stakeholder groups outweigh the investment made by all funders (e.g., AmeriCorps and HFH host sites) for the medium- and long-term scenarios. Specifically, the combined return to society and government per federal dollar is $2.80 under the medium-term scenario and $4.14 under the long-term scenario.

When all funding (from the federal government and other funders) is considered, every $1 in funding results in a return of $1.81 under the medium-term scenario and $2.61 under the long-term scenario.

Lastly, when considering the ROI to the federal government alone, the medium- and long-term scenario results are -$0.02 and $0.03, respectively. This indicates that in the medium-term scenario, the federal government loses its original $1 investment plus an additional $0.02. In the long-term scenario, the federal government loses $0.92 for every dollar invested.

In the short-term scenario—where benefits for only one year post-program are included—the ROI results indicate that costs outweigh the benefits in the first year after the program. A negative ROI or one 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 often requires several years of benefits to recoup the initial investment and generate positive returns, as indicated in the results for the first two ROI calculations for the medium- and long-term scenarios. During the program, AmeriCorps members gain the experience, skills, and knowledge that result in future benefits, such as improved employment and wages, which can be sustained throughout their working years.

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

In Table 12, 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 12. Program Benefits, Forgone Benefits, and Program Costs Included in ROI Calculations

Program Benefits, Forgone Benefits, and Program Cost			Total Benefits per Federal Dollar	Total Benefits per Funder Dollar	Federal Government Benefits per Federal Dollar
Program Benefits	**Stakeholder Group**	**Data Sources**	**X indicates inclusion in the ROI numerator**		
Cost savings in buying a new home	HFH homeowner	• HFHI • National Association of REALTORS (2020) • Viola et al. (2018)	X	X	—
Cost savings in home rehabilitation work	HFH homeowner	• HFHI • National Association of REALTORS (2020) • Viola et al. (2018) • Esajian (2021) • Characteristics of New Housing (U.S. Census Bureau, n.d.)	X	X	—
Out-of-pocket (OOP) medical cost savings due to improved respiratory health	HFH household member	• HFHI • Viola et al. (2018) • Mattessich et al. (2015) • Consumer Price Index (CPI; U.S. Bureau of Labor Statistics, n.d.) • Medical Expenditure Panel Survey (MEPS; AHRQ, 2021)	X	X	—

Program Benefits, Forgone Benefits, and Program Cost			Total Benefits per Federal Dollar	Total Benefits per Funder Dollar	Federal Government Benefits per Federal Dollar
Private insurance cost savings due to improved respiratory health of HFH household members	Private insurance companies	• HFHI • Viola et al. (2018) • Mattessich et al. (2015) • CPI (U.S. Bureau of Labor Statistics, n.d.) • MEPS (AHRQ, 2021)	X	X	—
Medicare and Medicaid cost savings due to improved respiratory health of HFH household members	Federal government	• HFHI • Viola et al. (2018) • Mattessich et al. (2015) • CPI (U.S. Bureau of Labor Statistics, n.d.) • MEPS (AHRQ, 2021)	X	X	X
Cost savings to other healthcare payers due to improved respiratory health of HFH household members	Other healthcare payers	• HFHI • Viola et al. (2018) • Mattessich et al. (2015) • CPI (U.S. Bureau of Labor Statistics, n.d.) • MEPS (AHRQ, 2021)	X	X	—
Additional earnings of HFH AmeriCorps members from reduced unemployment	HFH AmeriCorps member	• HFHI • Friedman et al. (2016) • Current Population Survey Annual Social and Economic Supplement (ASEC; U.S. Census Bureau, n.d.) • CPI (U.S. Bureau of Labor Statistics, n.d.) • U.S. Bureau of Labor Statistics (2019) • Viola et al. (2018)	X	X	—

Program Benefits, Forgone Benefits, and Program Cost			Total Benefits per Federal Dollar	Total Benefits per Funder Dollar	Federal Government Benefits per Federal Dollar
Increased income tax revenue due to additional earnings of HFH AmeriCorps members	Federal and state governments	• HFHI • Friedman et al. (2016) • ASEC (U.S. Census Bureau, n.d.) • CPI (U.S. Bureau of Labor Statistics, n.d.) • U.S. Bureau of Labor Statistics (2019) • Viola et al. (2018) • Tax rate data on Taxfoundation.org (2019 & 2020)	X	X	X
Increased Social Security and Medicare tax revenue due to additional earnings of HFH AmeriCorps members	Federal government	• HFHI • Friedman et al. (2016) • ASEC (U.S. Census Bureau, n.d.) • CPI (U.S. Bureau of Labor Statistics, n.d.) • U.S. Bureau of Labor Statistics (2019) • Viola et al. (2018) • Social Security Administration (SSA) (2020)	X	X	X

Program Benefits, Forgone Benefits, and Program Cost			Total Benefits per Federal Dollar	Total Benefits per Funder Dollar	Federal Government Benefits per Federal Dollar
Increased sales tax revenue due to additional earnings of HFH AmeriCorps members	State and local governments	• HFHI • Friedman et al. (2016) • ASEC (U.S. Census Bureau, n.d.) • CPI (U.S. Bureau of Labor Statistics, n.d.) • U.S. Bureau of Labor Statistics (2019) • Viola et al. (2018) • Tax rate data on Taxfoundation.org (2020) • Consumer Expenditure Survey (CEX) (U.S. Bureau of Labor Statistics, 2021)	X	X	—
Increased lifetime earnings due to increased educational attainment of HFH AmeriCorps members as a result of education awards	HFH AmeriCorps member	• HFHI • AmeriCorps (n.d.) • NCES (2019) • NCES (2020) • Trostel (2015) • CPI (U.S. Bureau of Labor Statistics, n.d.)	X	X	—
Increased lifetime tax revenue due to increased educational attainment of HFH AmeriCorps members as a result of education awards	Federal, state, and local governments	• HFHI • AmeriCorps (n.d.) • NCES (2019) • NCES (2020) • Trostel (2015) • CPI (U.S. Bureau of Labor Statistics, n.d.)	X	X	X

Program Benefits, Forgone Benefits, and Program Cost			Total Benefits per Federal Dollar	Total Benefits per Funder Dollar	Federal Government Benefits per Federal Dollar
Reduced spending on lifetime public assistance, corrections, and social insurance due to increased educational attainment of HFH AmeriCorps members as a result of education awards	Federal, state, and local governments	• HFHI • AmeriCorps (n.d.) • NCES (2019) • NCES (2020) • Trostel (2015) • CPI (U.S. Bureau of Labor Statistics, n.d.)	X	X	X
Increased tax revenue from living allowances, stipends, and education awards	Federal, state, and local governments	• HFHI • Friedman et al. (2016) • AmeriCorps (n.d.) • Tax rate data on Taxfoundation.org (2019 & 2020) • SSA (2020)	X	X	X
Post-tax living allowances, stipends, and education awards	HFH AmeriCorps member	• HFHI • Friedman et al. (2016) • AmeriCorps (n.d.) • Tax rate data on Taxfoundation.org (2019 & 2020) • SSA (2020)	X	X	—
Reduced federal rental assistance use by HFH homeowners due to HFH homeownership	Federal government	• HFHI • Viola et al. (2018) • Mattessich et al. (2015) • Center on Budget and Policy Priorities (CBPP) (2019) • CPI (U.S. Bureau of Labor Statistics, n.d.)	X	X	X

Program Benefits, Forgone Benefits, and Program Cost			Total Benefits per Federal Dollar	Total Benefits per Funder Dollar	Federal Government Benefits per Federal Dollar
Forgone Benefits (Opportunity Costs)*	**Stakeholder Group**	**Data Sources**	**X indicates inclusion in the ROI denominator**		
Professional opportunity cost of forgone market wages for HFH AmeriCorps members	HFH AmeriCorps member	• HFHI • ASEC (U.S. Census Bureau, n.d.) • CPI (U.S. Bureau of Labor Statistics, n.d.) • U.S. Bureau of Labor Statistics (2019) • Viola et al. (2018)	X	X	—
Professional opportunity cost of federal income, Social Security, and Medicare taxes on forgone market wages for HFH AmeriCorps members	Federal government	• HFHI • ASEC (U.S. Census Bureau, n.d.) • CPI (U.S. Bureau of Labor Statistics, n.d.) • U.S. Bureau of Labor Statistics (2019) • Viola et al. (2018) • Tax rate data on Taxfoundation.org (2019) • Social Security Administration (2020)	X	X	X
Professional opportunity cost of state income and sales taxes on forgone market wages for HFH AmeriCorps members	State and local governments	• HFHI • ASEC (U.S. Census Bureau, n.d.) • CPI (U.S. Bureau of Labor Statistics, n.d.) • U.S. Bureau of Labor Statistics (2019) • Viola et al. (2018) • CEX (U.S. Bureau of Labor Statistics, 2021) • Tax rate data on Taxfoundation.org (2020)	X	X	—

Program Benefits, Forgone Benefits, and Program Cost			Total Benefits per Federal Dollar	Total Benefits per Funder Dollar	Federal Government Benefits per Federal Dollar
Investment opportunity cost of investing total HFHI AmeriCorps funding in U.S. Treasury bonds	All funders	• HFHI • Office of Management and Budget (OMB) (2020) • U.S. Department of Treasury	X	X	—
Investment opportunity cost of investing only federal HFH AmeriCorps funding in U.S. Treasury bonds	Federal government	• HFHI • OMB (2020) • U.S. Department of Treasury	—	—	X
Program Cost	**Payer**	**Data Sources**	**X indicates inclusion in the ROI denominator**		
AmeriCorps grant costs (excluding education awards provided to HFH AmeriCorps members)	Federal government (AmeriCorps)	• HFHI	X	X	X
HFH AmeriCorps member expected education awards	Federal government (AmeriCorps)	• AmeriCorps (n.d.) • HFHI • Friedman et al. (2016)	X	X	X
Fees from HFH host sites	HFH host sites	• HFHI	—	X	—

*Opportunity costs are amounts that are reduced from total benefits realized across ROI calculations. Thus, they represent a negative value in the numerator. Please see the Calculating ROI section of Appendix B for further details.

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 HFH AmeriCorps included the following steps:

- Measuring and monetizing program benefits to various stakeholder groups
- 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 HFH AmeriCorps.

Although HFH AmeriCorps members experience positive benefits from the HFH AmeriCorps 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 2020 dollars.[40] 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 HFH 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 2020 dollars. This scenario also assumes the entire net present value of lifetime benefits is realized.

[40] 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.[41] 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 the HFH AmeriCorps program is to measure and monetize the program benefits. As a result of the HFH AmeriCorps program, HFH homeowners, HFH household members, HFH AmeriCorps members, private insurance companies, other healthcare payers, and various levels of government benefit. 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 HFH Homeowners

Findings from Viola et al. (2018) indicate that over a three-year period, compared to HFH affiliate sites that *do not* host HFH AmeriCorps members, HFH host sites on average:

- Built 4.99 more HFH homes (i.e., 1.66 more HFH homes annually)
- Rehabbed 8.24 more homes (i.e., 2.75 more homes annually)

To monetize these productivity and capacity gains by HFH host sites and calculate the resulting benefits realized by HFH homeowners, the analysis first multiplied the number of HFH hosts sites in the U.S. during the most recent program year (i.e., 127) by both annual findings from Viola et al. (2018). Multiplying the 1.66 additional HFH homes built per HFH host site and the 2.75 additional rehabbed homes per HFH host site by the total number of HFH host sites represents the number of additional homes built and rehabbed, respectively, nationwide during the most recent year. These numbers were 211 and 349, respectively. The analysis assumed that each home built and rehabbed had one homeowner. Thus, these numbers also represent the number of HFH homeowners who purchased a new HFH home or had home rehabilitation work completed, respectively.

[41] These three scenarios consider varying durations of how long increased employment and earnings benefits last for HFH AmeriCorps members. They also consider varying durations for lifetime benefits that stem from the HFH AmeriCorps program. For example, lifetime benefits in terms of decreased public assistance, social insurance, and corrections costs result from HFH 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.

Cost Savings Due to Additional Homes Built

HFH homes are purchased at below market-rate costs, resulting in substantial savings to HFH homeowners. To monetize this benefit, the analysis subtracted the average cost of building an HFH home—which represents the average selling price of an HFH home—from the average selling price of a similar-sized home in the U.S. Based on data provided by HFHI, the average size of an HFH home for the 2019–2020 program year was 1,375 square feet and the average cost per square foot of an HFH home was $110. According to the National Association of REALTORS (2020), the median selling price per square foot of a home in the U.S. was about $143. As shown in Table 13, Using these costs per square foot, a HFH home of average size cost roughly $151,250 while a home of the same size in the U.S. costs roughly $197,204.[42] The difference between these two estimates represents the savings to HFH homeowners per HFH home purchased. These savings are then multiplied by the number of additional HFH homes built nationally due to the efforts of HFH AmeriCorps members. Specifically, the $46,000 selling price differential was applied to the 211 additional HFH homes built nationwide for the most recent program year. Given this, the total savings to HFH homeowners in terms of purchasing a home equaled approximately $9.7 million.

Table 13. Selling Price Differences Between an HFH Home and a Home on the U.S. Market

	Average Square Footage of an HFH Home (ft^2)	Selling Price per Square Foot (2020$)	Estimated Total Selling Price per Home (2020$)
Similarly-sized Home on U.S. Market	1,375	$143.42	$197,204
HFH Home	1,375	$110.00	$151,250
Difference		**$33.42**	**$45,954**

Sources: HFHI and National Association of REALTORS (2020)

Cost Savings Due to Additional Homes Rehabbed

HFH homeowners also realize cost savings when HFH AmeriCorps members complete rehabilitation work on their existing homes. To calculate these benefits, this analysis first subtracted the average cost of rehabilitation work for an HFH home from that of a similarly-sized home in the U.S. Findings from Esajian (2021) indicate that the average cost of rehabilitation work for a home in the U.S. was $39,567. Using the median square footage of a U.S. home in 2019 from U.S. Census Bureau (n.d.) (i.e., 2,301 ft^2), the analysis

[42] The median selling price per square foot for U.S. homes may differ slightly from that for HFH AmeriCorps homes, given the geographic distribution that HFH AmeriCorps operates in. For example, as shown in Table 1, the greatest proportion of HFH AmeriCorps homes (i.e., 44 percent) were built in the West region (among the four U.S. census regions) during the most recent program year. The West region has higher median housing costs than the U.S. in general. Thus, as done in this ROI analysis, using the U.S. median may have led to a lower estimated benefit to HFH homeowners—in the form of cost savings—for additional HFH homes built. Namely, using the U.S. median would result in an ROI estimate slightly lower than the actual.

estimated the average cost of rehabilitation work per square foot of a home in the U.S. was $17.20. The analysis then calculated the average cost of rehabilitation work for an HFH home per square foot since such data was not provided by HFHI. This analysis assumed that the percent savings realized in home selling prices per square foot would also be realized for home rehabilitation prices per square foot. This is because both types of home construction work are carried out by HFH AmeriCorps members, are valued at their cost, and utilize HFH homeowners' sweat equity. Specifically, the percent difference between the selling price per square foot of an HFH home (i.e., $110) and that of a home on the U.S. market (i.e., 143) was -23.3 percent. This indicated that the selling price per square foot of an HFH home was 23.3 percent less than that for a U.S. home. Thus, this analysis assumed that the rehabilitation price per square foot of an HFH home was also 23.3 percent less than that for a U.S. home. As stated previously, the average market price for rehabilitation work per square foot was $17.20. Applying the 23.3 percent difference to this metric estimated the HFH home rehabilitation cost per square foot at $13.19. This result and calculation are shown in Table 14.

Table 14. Average Cost of Rehabbing an HFH Home per Square Foot

Row	Component	Value*	Source
A	Percent Difference Between the Selling Price per Square Foot of an HFH Home and a U.S. Home (%)	23.3%	HFHI & National Association of REALTORS (2020)
B	Rehabbing Price per Square Foot for a U.S. Home (2020$)	$17.20	Esajan (2021) & U.S. Census Bureau. (n.d.)
C	Estimated Difference Between the Rehabbing Price per Square Foot of an HFH Home and a U.S. Home (2020$)	$4.01	(A x B)
D	Rehabbing Price per Square Foot for an HFH Home (2020$)	$13.19	(B - C)

The difference between these per square foot rehab work estimates (i.e., $4.01) represents savings to HFH homeowners. The analysis then multiplied this home rehabilitation work cost differential by the average square footage of an HFH home and then by the number of additional homes rehabbed annually in the U.S. calculated previously (i.e., 349). This estimated the total savings realized by HFH homeowners related to home rehabilitation work performed by HFH AmeriCorps members. These total savings equaled $1,921,924, which is shown in Table 15.

Table 15. Cost Savings to HFH Homeowners due to Additional Homes Rehabbed

Rehabilitation Work Cost Differential Between an HFH Home and a Home in the U.S. per Square Foot (2020$)	Average Square Footage of an HFH Home (ft²)	Additional Homes Rehabbed Nationwide due to HFH AmeriCorps	Total Savings from Rehabilitation Work* (2020$)
$4.01	1,375	349	$1,921,924

Sources: HFHI, National Association of REALTORS (2020), Esajian (2021), Viola et al. (2018), U.S. Census Bureau (n.d.),
*Numbers may not total due to rounding.

Benefits to HFH Household Members

Results from Mattessich et al. (2015) indicated that 36 percent of surveyed HFH homeowners in Minnesota reported that they or someone in their household had a respiratory or lung illness prior to moving into their HFH home. Of that subset, 35 percent reported that their or their household member's condition was "much better," 22 percent reported it was "somewhat better," 29 percent reported "there was no change," 10 percent reported it was "somewhat worse," and 4 percent reported it was "much worse" since moving into their HFH home. To monetize this net improved respiratory health by HFH household members, the analysis first multiplied the number of additional HFH homes built nationwide due to HFH AmeriCorps (i.e., 211)[43] by 36 percent. This represents the national population of HFH household members who had a respiratory illness before moving into their HFH home. The analysis then multiplied this product by 35, 22, 10, and 4 percent, separately. This represents the national population of HFH household members who reported their respiratory condition got "much better" (i.e., 27), "somewhat better" (i.e., 17), "somewhat worse" (i.e., 8), and "much worse" (i.e., 3) since moving into their HFH home, respectively.

To monetize the medical costs savings derived from this net improvement in respiratory health, the analysis used data provided by the Medical Expenditure Panel Survey (MESP) (AHRQ, 2021). These data indicated that the average annual cost for someone that has chronic obstructive pulmonary disease (COPD), asthma, or other respiratory conditions in the U.S. in 2018 was $2,136 ($2,179 in 2020 dollars). To determine the amount of annual savings for those that reported improvements or deteriorations in their respiratory condition since moving, the analysis used statistical methods to

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[43] Reference the Benefits to HFH Homeowners section for details regarding the methodology to calculating this metric. Additionally, Mattessich et al. (2015) only included survey responses from HFH homeowners, not individuals who received rehabilitation work on their existing home due to HFH AmeriCorps. Thus, benefits with regards to improved respiratory health were only scaled up to the number of additional HFH homes built due to national service for the most recent program year. However, the HFH homeowners surveyed in Mattessich et al. (2015) reported that either <u>they or someone in their household</u> had a respiratory illness prior to moving into their HFH home. Because there could have been multiple people per HFH home with a respiratory condition prior to moving, counting by HFH home could potentially understate the associated medical cost savings realized across the different stakeholder groups.

estimate the percent cost reduction or increase for each population. This analysis was based on the referenced survey question from Mattessich et al. (2015), which had five response options: "much better," "somewhat better," "there was no change," "somewhat worse," and "much worse." These five response options were not accompanied by an interpretational rubric; thus, each response option was relative to a particular respondent's initial standing regarding their or their household member's respiratory health. To estimate the percent cost reduction or increase associated with each of these response options, the analysis first used the response distribution and sample size for this survey question from Mattessich et al. (2015) to populate a data file of individual records. Using a standard deviation of 1, the analysis calculated Cohen's *d* for each of the five survey response options based on the data populated in the data file. Interpreting the Cohen's *d* value as a z-score and assuming a normal distribution, the analysis estimated the cumulative percentile for each survey response option. Then to provide a percentile difference above and below the "there was no change" survey response option (as this response option indicates there was no improvement or deterioration in HFH household members' respiratory health after moving into an HFH home), the analysis reduced the cumulative percentages by 50 percentage points. The result is shown in the fourth column of Table 16. These findings across all response options—as well as their interpretation—for this question are summarized in Table 16.[44]

Table 16. Results of Statistical Methods Used to Estimate the Percent Cost Reduction or Increase by Response Option

Response Option (Distribution Among Survey Respondents)	Cohen's *d*	Cumulative Percent (%)	Change in Cost (%)	Interpretation of Change in Cost
"Much Better" (35%)	2	98%	48%	48% cost reduction
"Somewhat Better" (22%)	1	84%	34%	34% cost reduction
"There Was No Change" (29%)	0	50%	0%	No change
"Somewhat Worse" (10%)	-1	16%	-34%	34% cost increase
"Much Worse" (4%)	-2	2%	-48%	48% cost increase

Sources: Mattessich et al. (2015) and ICF

[44] This statistical method used was informed by procedures leveraged by the What Works Clearinghouse's "improvement index." Please reference page 18 of this document for additional information: https://ies.ed.gov/ncee/wwc/Docs/referenceresources/WWC-Procedures-Handbook-v4-1-508.pdf.

Results from this statistical analysis translated into a 48 percent cost reduction for those that reported their respiratory health had gotten "much better" and a 34 percent cost reduction for those that reported their respiratory condition had gotten "somewhat better" after moving into their HFH home. Moreover, the results translated into a 34 percent cost increase for those that reported their respiratory health had gotten "somewhat worse" and a 48 percent cost increase for those that reported their respiratory condition had gotten "much worse" since moving into an HFH home. The analysis multiplied these percentages by the $2,179 annual cost and then by the HFH household member population whose respiratory condition got "much better," "somewhat better," "somewhat worse," and "much worse," separately. When summed, this estimated the aggregate medical cost savings related to the net improved respiratory health of these HFH household members since moving into an HFH home. These values and results are presented in Table 17. It is important to note that this analysis accounted for any random instances of HFH household members reporting improved or deteriorating respiratory health that were not attributable to moving into an HFH home by capturing both medical cost savings and additional medical costs incurred due to improved and worsening respiratory health, respectively.

Table 17. Medical Cost Savings Realized and Additional Medical Costs Incurred by Response Option Due to Change in Respiratory Health among HFH Household Members

Response Option	Additional Homes Built Nationwide due to HFH AmeriCorps	Percent of HFH Household Members Who Had a Respiratory Illness Pre Moving into an HFH Home (%)	Change in Respiratory Health Reported by HFH Household Members (%)	Change in Cost Associated with Change in Respiratory Health (%)	Average Annual Cost Paid per Person with a Respiratory Illness (2020$)	Medical Cost Savings Realized or Medical Costs Incurred (2020$)*
"Much Better"	211	36%	35%	48%	$2,179	$27,676
"Somewhat Better"	211	36%	22%	34%	$2,179	$12,442
"Somewhat Worse"	211	36%	10%	-34%	$2,179	-$5,656
"Much Worse"	211	36%	4%	-48%	$2,179	-$3,163
Total						**$31,300**

Sources: HFHI, Viola et al. (2018), Mattessich et al. (2015), ICF, CPI, and AHRQ (2021)
*Numbers may not total due to rounding.

Of note, HFH household members only realize the medical cost savings that are paid out-of-pocket (OOP). Along with providing the average annual cost for someone that has COPD, asthma, or other respiratory conditions in the U.S., MESP data (AHRQ, 2021) also provided this expenditure amount by payment source. Using this data, the analysis estimated that 8 percent of the total medical cost savings as a result of HFH household members' net improved respiratory health was realized by HFH household members themselves. This resulted in total savings of $2,506. These savings are considered a one-time benefit.[45]

Benefits to Private Insurance Companies and Other Healthcare Payers

Private insurance companies and other healthcare payers[46] also realize savings in medical costs due to the net improved respiratory health reported by HFH household members after moving into an HFH home. Considering the methodology described in the previous section, this analysis estimated the portion of the total medical cost savings realized by private insurance companies and other healthcare payers, separately. Using the MESP data from AHRQ (2021), the analysis calculated the medical cost savings realized by each of these stakeholders. These values are provided in Table 18.

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[45] All medical cost savings benefits realized across stakeholder groups are only realized for one year. Namely, net improved respiratory health outcomes in this analysis are not spread out or discounted for several years after receipt of program services (e.g., moving into an HFH home). This is because HFH homeowners surveyed in Mattessich et al. (2015) reported to being living in their HFH home anywhere from less than a year to more than 16 years at the time of the survey. Specifically, 55 and 45 percent reported living in their HFH home for more than five years and for less than five years, respectively. Thus, health outcomes data was collected at a time that varied by survey respondent. Given this and a lack of more detailed data, this ROI analysis made a conservative assumption that medical cost savings would only be one-time benefits.

Additionally, for all stakeholder groups that experience medical cost savings due to HFH household members' net improved respiratory health after moving into an HFH home, the impact on healthcare providers is not captured in this ROI analysis. This analysis assumes that these healthcare providers are operating at 100 percent capacity. Thus, when they lose patients due to the favorable impacts of HFH AmeriCorps, it is assumed they will serve another individual needing care and they are not losing revenue.

[46] Other healthcare payers include those such as the Department of Veterans Affairs (excluding TRICARE), Indian Health Services, community and neighborhood clinics, worker's compensation, homeowner's or liability insurance, and others (AHRQ, 2021)

Table 18. Medical Cost Savings Realized and Additional Medical Costs Incurred by Private Insurance Companies and Other Healthcare Payers by Response Option Due to Change in Respiratory Health among HFH Household Members

Stakeholder Group	Total Medical Cost Savings Realized Across Stakeholder Groups (2020$)	Portion of Savings Realized by Stakeholder Group Based on MESP Data (%)	Medical Cost Savings Realized or Medical Costs Incurred 2020$)*
Private Insurance Companies	**$31,300**	**34%**	**$10,682**
"Much Better"	—	30%	$9,446
"Somewhat Better"	—	14%	$4,246
"Somewhat Worse"	—	-6%	-$1,930
"Much Worse"	—	-3%	-$1,079
Other Healthcare Payers	**$31,300**	**6%**	**$1,949**
"Much Better"	—	6%	$1,723
"Somewhat Better"	—	2%	$775
"Somewhat Worse"	—	-1%	-$352
"Much Worse"	—	-1%	-$197

Sources: HFHI, Viola et al. (2018), Mattessich et al. (2015), ICF, CPI, and AHRQ (2021)
*Numbers may not total due to rounding.

It is important to note that the federal government also realizes benefits from the net improved respiratory health reported by HFH household members. These benefits are described in the Benefits to Government section later in this appendix.

Benefits to HFH AmeriCorps Members

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

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

<u>Living Allowance, Stipend, and Education Award</u>

Living allowances are given to AmeriCorps members during their one-year service term to pay for various living expenses, such as housing and groceries, and it sometimes includes members' worker's compensation and health insurance when applicable. With regard to stipends, only AmeriCorps VISTA members can choose between this option or an education award as an end-of-service benefit. However, AmeriCorps State and National members are not offered the stipend as a benefit for their service and only receive an education award. The cash stipend can be used to purchase any goods or services post-service while the education award is a voucher that can only be used to pay for future educational training and related expenses or to repay existing eligible federal student loans.[47]

Regarding education awards, according to Friedman et al. (2016), a significant portion (i.e., 46 percent) of AmeriCorps State and National member alumni who receive an education award use them to pay for additional post-secondary 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. For AmeriCorps VISTA member alumni who opt to receive an education award, Friedman et al. (2016) indicated these percentages were 31, 37, and 32 percent, respectively. Based on data provided by HFHI directly, 7 out of 41 HFH AmeriCorps VISTA members selected to receive a stipend versus an education award for the most recent program year. This is slightly higher than the findings from Friedman et al. (2016) in which 14 percent of AmeriCorps VISTA member alumni reported choosing a stipend instead of an education award post-service.

Living allowances, stipends, 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 post-secondary 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, stipend, and the portion of the education award used to repay student loans as HFH AmeriCorps member benefits, which are listed in Table 19. The portion of the education award used to fund additional post-secondary education is discussed in the following section.

Table 19. HFH AmeriCorps Member Benefits from the Living Allowance, Stipend, and Education Award

Benefit	Post Tax Value (2020$)*	Notes
Living Allowance	$4,559,135	Post-tax living allowances members receive during service
Stipend	$12,364	Post-tax cash stipend AmeriCorps VISTA members elect to receive post-service
Education Award Used to Pay Off Student Loans	$564,557	Post-tax education award amount used to pay off outstanding student loans
Total	**$5,136,055**	

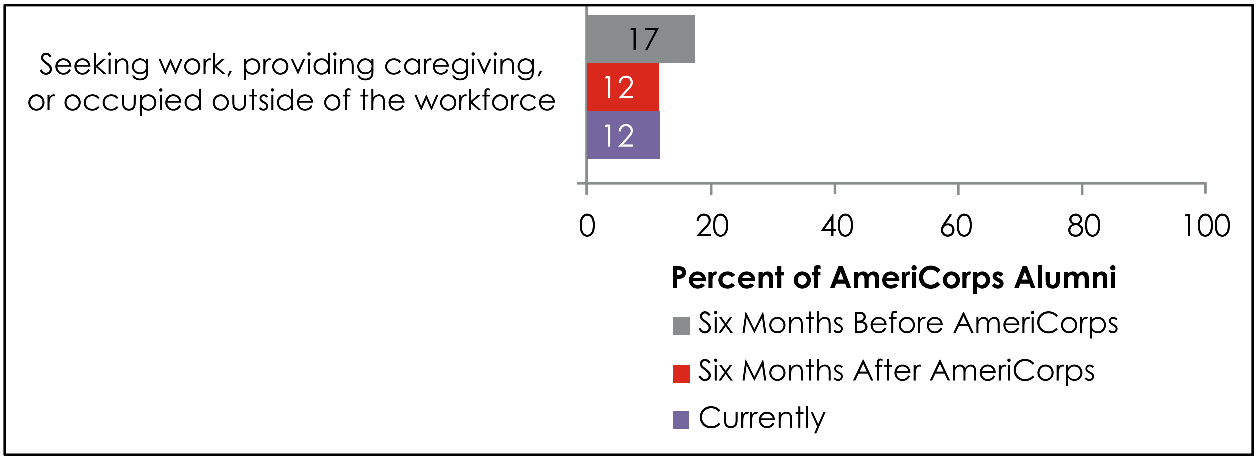
Sources: HFHI and Friedman et al. (2016)
*Numbers may not sum due to rounding.

[47] Please see this site for additional information: https://americorps.gov/members-volunteers/vista/benefits.

Increased Earnings due to Reduced Unemployment

According to Friedman et al. (2016), the percentage of AmeriCorps members unemployed was 5 percentage points lower six months after serving in AmeriCorps compared to six months before. The study did not provide actual employment rates for AmeriCorps members pre- and post-service, but instead provided the unemployment rates shown in Figure 2 (17 percent vs. 12 percent) in which the change between represents a 5-percentage point decrease.

Figure 2. Unemployment Status Results from Friedman et al. (2016)[48]



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 HFHI provide the gender, age, pre-service educational attainment, and race/ethnicity distribution of AmeriCorps members who served with HFH AmeriCorps for the most recent program year. Based on those demographics, the analysis first used annual average earnings data from the Current Population Survey's Annual Social and Economic (ASEC) Supplement for March 2019 to estimate HFH AmeriCorps members' earnings. 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 HFH AmeriCorps members that served during the 2019–2020 program year. This value expressed in 2020 dollars was $54,782 as shown in Table 21.

Additionally, survey data representative of HFH AmeriCorps member alumni from Viola et al. (2018) indicated which industries respondents were employed in after serving with HFH AmeriCorps. This distribution is shown in Table 20. To incorporate these findings into HFH AmeriCorps members' additional earnings from reduced unemployment, each industry listed in Table 20 was first matched to an existing North American Industry Classification System (NACIS) code.[49] The analysis then used Occupational Employment

[48] "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.

[49] For more information about NAICS codes, please reference see: https://www.census.gov/naics/.

and Wage Statistics data from U.S. Bureau of Labor Statistics (2019) to identify the 25th percentile annual earnings for each of these industries. The 25th percentile was used because it more closely represented income earned in entry-level employment. To estimate HFH AmeriCorps members' annual earnings using these industry-specific findings, the 25th percentile annual earnings amounts were expressed in 2020 dollars and then weighted based on the survey findings from Viola et. al (2018). These results are shown in the sixth column of Table 20. The values in this sixth column were then summed to represent HFH AmeriCorps members' per-person earnings based on HFH AmeriCorps member alumni's post-service employment selection.

Table 20. Earnings for HFH AmeriCorps Members Based on Distribution of Industries HFH AmeriCorps Alumni Became Employed in Post-Service*

Industry	Percent (%)	NAICS Code Equivalent[50]	25th Percentile Earnings (2019$)	25th Percentile Earnings (2020$)	Weighted Per Person Earnings Based on Industry Distribution (2020$)
Local habitat organization/HFHI	27%	624200	$28,140	$28,421	$7,674
Construction/Home remodeling	19%	236100	$34,240	$34,582	$6,571
Nonprofit	18%	813000	$26,600	$26,866	$4,836
Affordable housing/homeless nonprofit	14%	624000	$23,630	$23,866	$3,341
Education	8%	611000	$33,160	$33,492	$2,679
Private Sector	6%	541000	$44,310	$44,753	$2,685
Government/Public Sector	5%	999000	$38,230	$38,612	$1,931
Healthcare	4%	622000 & 621000	$34,215**	$34,557	$1,382
Total	**100%**				**$31,099**

Sources: Viola et al. (2018), U.S. Bureau of Labor Statistics (2019), and CPI
*Sample size was 181 HFH AmeriCorps member alumni. Numbers may not sum due to rounding.
**The 25th percentile earnings for this industry is the average of those or the following industry sectors: 622000 and 621000.

[50] The following lists which industry sector each NAICS code used represents: 624200 (Community Food and Housing, and Emergency and Other Relief Services), 236100 (Residential Building Construction), 813000 (Religious, Grantmaking, Civic, Professional, and Similar Organizations), 624000 (Community Housing Services), 611000 (Educational Services), 541000 (Professional, Scientific, and Technical Services), 999000 (Federal, State, and Local Government, excluding state and local schools and hospitals and the U.S. Postal Service), 622000 (Hospitals), and 621000 (Ambulatory Healthcare Services).

The analysis used the demographically- and industry-weighted earnings amounts listed in Table 21 to determine HFH AmeriCorps members' total expected per-person earnings. Namely, each of these values were weighted equally as shown in Table 21 to estimate the per-person earnings that were representative of HFH AmeriCorps members' demographic composition and labor profile.

Table 21. Total Expected Per-Person Earnings for HFH AmeriCorps Members

Category	Per Person Annual Earnings (2020$)	Weight (%)	Weighted Per Person Annual Earnings (2020$)
Based on Member Demographics	$54,782	50%	$27,391
Based on Member Industry Selection	$31,099	50%	$15,550
Total		**100%**	**$42,941**

Sources: HFHI, Viola et al. (2018), ASEC (2019), CPI, and U.S. Bureau of Labor Statistics (2019)

The analysis then multiplied the 5 percentage point decrease in unemployment from Friedman et al. (2016) by the number of HFH AmeriCorps members that served during the most recent program year (i.e., 345). This estimated the number of *additional* HFH AmeriCorps members employed due to national service (i.e., 17). To estimate the additional pre-tax earnings that stemmed from the reduced unemployment, the $42,941 annual earnings amount was multiplied by the additional number of HFH AmeriCorps members employed post-service. This represents the additional income earned by HFH AmeriCorps members due to serving with HFH AmeriCorps. These values and calculations are shown in Table 22.

Table 22. Additional Pre-tax Earnings for HFH AmeriCorps Members from Reduced Unemployment Based on HFH AmeriCorps Member Demographics and Industry Selection Post-Service

Metric	Value (2020$)*
Average Per-Person Pre-tax Annual Earnings of Employed 18 to 34-year-olds weighted by HFH AmeriCorps Member Demographics (e.g., gender, race/ethnicity, and pre-service education level) and Industry Selection Post-Service	$42,941
Reduction in AmeriCorps Members' Unemployment	5%
HFH AmeriCorps Members	345
Cumulative Additional Pre-Tax Earnings	**$740,727**
Cumulative Additional Post-Tax Earnings	**$601,822**

Sources: HFHI, Viola et al. (2018), Friedman et al. (2016), ASEC (2019), CPI, and U.S. Bureau of Labor Statistics (2019)
*Numbers may not total due to rounding.

To avoid double counting, the additional *post-tax* earnings is used to calculate the direct benefit to HFH AmeriCorps members, rather than the additional *pre-tax* earnings. The post-tax earnings for the additional 17 HFH AmeriCorps members employed in Table 22 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 HFH AmeriCorps members for the three different scenarios—discounted in 2020 dollars using data from Office of Management and Budget (2003)—are shown in Table 23. These monetary amounts represent the additional post-tax earnings realized due to the employment gain that is not only solely attributed to the HFH AmeriCorps program but is also based on HFH AmeriCorps members' demographics and post-service job industries.

Table 23. Cumulative Additional Post-tax Earnings Derived from Reduced Unemployment due to Serving with HFH AmeriCorps by Scenario

Scenario	Cumulative Additional Post xax Earnings due to Serving with HFH AmeriCorps (2020$)
Short-term	$601,822
Medium-term	$7,357,254
Long-term	$12,016,244

Sources: HFHI, Viola et al. (2018), Friedman et al. (2016), ASEC (2019), U.S. Bureau of Labor Statistics (2019), and OMB (2003)

Increased Lifetime Earnings due to Increased Pos t-secondary Education Derived from the Use of Education Awards

The AmeriCorps education award pays for some portion of members' increased post-secondary educational attainment, and the future earnings derived from that educational attainment is treated as a direct benefit to HFH AmeriCorps members. To calculate the portion of members' increased educational attainment that is attributable to HFH AmeriCorps, the analysis used cost data from the National Center for Education Statistics (NCES). Table 24 details the average total cost fo r each degree type, and the portion of the cost that the post-tax education award amount (i.e., $5,461) represents ($6,155[51] before taxes). The analysis then used these percentages to

[51] This analysis used the 2020 to 2021 AmeriCorps education award amount ($6,345) but discounts 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.

estimate the lifetime benefits of post-secondary 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, four-year academic institution during the 2019–2020 academic year was $20,532. This amounts to almost $83,000 for four years if expressed in 2020 dollars. The $5,461 post-tax education award only represents 6.6 percent of the cost of that degree, so HFH AmeriCorps could only be credited with 6.6 percent of the completion of HFH AmeriCorps members' bachelor's degree post-service.

Additional earnings derived from HFH AmeriCorps members' reduced unemployment were calculated annually and then discounted based on the short-term, medium-term, and long-term scenarios in net present 2020 dollars.

Regarding additional earnings derived from HFH AmeriCorps members' increased post-secondary 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 2020 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 one year post-program (i.e., in the short-term scenario).

Table 24. Average Total Cost of Education and Portion Attributable to Education Award by Degree Type

Degree Type[52]	Average Cost (2020$)*	Percent of Degree Total Cost Covered by Post tax Education Award (%)
Associate Degree	$11,979	45.6%
Bachelor's Degree	$82,949	6.6%
Graduate Degree	$39,401	13.9%

Sources: AmeriCorps (n.d.), CPI,2 NCES (2019), and NCES (2020)
*Costs were provided for the 2019 to 2020 academic year by NCES (2020) for associate degree and bachelor degree types. Graduate degree type data for the 2018 to 2019 academic year was provided by NCES (2019). These costs are expressed in 2020 dollars since the post-tax education award amounts are in 2020 dollars.

To determine the future lifetime earnings (and later, the associated lifetime taxes, which are described in the Benefits to Government section) realized due to the use of the education award post-service, the analysis first determined the number of additional post-secondary degrees estimated to be completed by degree type. The 345 HFH AmeriCorps members who served during the 2019–2020 program year were distributed

[52] 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 includes tuition and required fees for a public, in-state, 2-year graduate program.

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 and 31 percent of AmeriCorps VISTA member alumni used their education award to pursue post-secondary degrees after program completion. This makes the number of HFH AmeriCorps members expected to use the education award to pursue additional post-secondary education roughly equal to 153. Specifically, Friedman et al. (2016) indicated that the 46 percent is comprised of 2 percent using it to attend a technical or vocational training program, 21 percent using the education award to obtain a bachelor's degree, and 23 percent using it for graduate school.[53] For AmeriCorps VISTA member alumni, these percentages were reported as 1, 12, and 18 percent, respectively. This results in the number of HFH AmeriCorps members estimated to pursue an associate degree, a bachelor's degree, and a graduate degree post-service using the education award to be roughly 7, 69, and 77, respectively. These values are shown in Table 25.

Table 25. Estimates of the Number of Post-secondary Degrees Pursued With Using the Education Award by Degree Type

Degree Type	Total HFH AmeriCorps Member Count	Percent Estimated to Pursue Post secondary Education According to Friedman et al. (2016) (%)	Number of Degrees Pursued Using the Education Award*
Associate Degree	**345**	—	**6.5**
AmeriCorps State and National	304	2%	6.1
AmeriCorps VISTA	41	1%	0.4
Bachelor's Degree	**345**	—	**68.8**
AmeriCorps State and National	304	21%	63.8
AmeriCorps VISTA	41	12%	4.9
Graduate Degree	**345**	—	**77.3**
AmeriCorps State and National	304	23%	69.9
AmeriCorps VISTA	41	18%	7.4
Total			**152.6**

Sources: AmeriCorps (n.d.), CPI, HFHI, Friedman et al. (2016), NCES (2020), and NCES (2019)
*Numbers may not sum due to rounding.

[53] 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.

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 26 and expressed in 2020 dollars.[54] For instance, using Trostel (2015) data, the lifetime earnings in 2020 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 26) 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 post-secondary degree types to conservatively estimate the additional lifetime earnings realized by HFH AmeriCorps members due to an increase in post-secondary educational attainment. Trostel (2015) also included data on lifetime taxes paid which was converted to 2020 dollars and then used to estimate the post-tax lifetime earnings that would be realized per additional post-secondary 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 HFH AmeriCorps members.

Table 26. Additional Earnings from AmeriCorps Members' Use of the Education Award*

Degree Type	Number of Degrees Pursued with Using the Education Award	Percent of Degree Total Cost Covered by Post tax Education Award (%)	Number of Degrees Obtained with Using the Education Award	Additional Pre tax Lifetime Earnings Per Degree Type (2020$)	Additional Lifetime Taxes Paid Per Degree Type (2020$)	Additional Post tax Lifetime Earnings Per Degree Type (2020$)	Total Post tax Lifetime Earnings with Using the Education Award
Associate Degree	6.5	45.6%	3.0	$271,036	$120,490	$150,546	$445,430
Bachelor's Degree	68.8	6.6%	4.5	$416,996	$201,594	$215,402	$975,090
Graduate Degree	77.3	13.9%	10.7	$461,413	$174,460	$286,953	$3,074,343
Total	**152.6**		**18.2**				**$4,494,863**

Sources: AmeriCorps (n.d.), CPI, HFHI, Friedman et al. (2016), NCES (2020), NCES (2019), and Trostel (2015)
*Numbers may not sum due to rounding.

[54] 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.

To isolate the increase in additional lifetime earnings specific to members using the education award, the number of HFH AmeriCorps members who used the education award for this purpose by degree type was reduced by the percent of the degree cost that can be covered by the $5,461 post-tax education award received post-service, displayed in the third column of Table 26. As a result, the analysis estimated that the use of the education award among HFH AmeriCorps members produced roughly three additional associate degrees, five additional bachelor's degrees, and 11 additional graduate degrees post-service. Then, the number of additional degrees obtained was applied to the 2020 additional post-tax lifetime earnings by degree type. This calculates the additional lifetime post-tax earnings realized by HFH 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 $4.5 million across HFH AmeriCorps members. Of note, these lifetime earnings are *in addition to* the earnings derived from HFH AmeriCorps members' gains in employment as delineated in the previous section. To reiterate, the earnings from HFH 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 government benefits from:

- Additional state income tax revenue from HFH AmeriCorps members' increased earnings due to reduced unemployment
- Additional lifetime state and local taxes due to HFH AmeriCorps members' increased post-secondary educational attainment[55]
- Additional state and local taxes from the living allowance, stipend, and education award received by these members, where applicable
- Additional state and local sales tax revenue from HFH AmeriCorps members' increased consumption due to reduced unemployment
- Reduced lifetime spending on social insurance and corrections[56] due to HFH AmeriCorps members' increased post-secondary educational attainment

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[55] 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.

[56] Reduced spending on public assistance due to HFH 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.).

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 HFH AmeriCorps members that are solely attributed to the HFH AmeriCorps 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 HFH AmeriCorps member divided by their pre-tax earnings. This analysis then calculated the weighted average of these state-specific tax rates—using these states' population from the 5-year estimates of the 2019 American Community Survey—to estimate a weighted national tax rate (i.e., 3.0 percent). A weighted national tax rate was used because HFH AmeriCorps operates nationwide. Also, HFH AmeriCorps members may disperse to various locations following their service terms and continue to migrate over the course of their working years.

For additional tax revenue derived from HFH AmeriCorps members' reduced unemployment, living allowances, stipends, and education awards, they were calculated using tax rates specific to each per-person monetary amount.

For additional tax revenue derived from HFH AmeriCorps members' increased post-secondary 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 2020 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 one year post-program (i.e., in the short-term scenario).

Lifetime state income tax revenue values are also provided by Trostel (2015) by education level. Based on the number of post-secondary degrees estimated to be obtained due to the use of the education award received after serving with HFH AmeriCorps, additional lifetime state income taxes are realized. Thus, the additional lifetime state income taxes paid values—informed by data from Trostel (2015)—were converted to 2020 dollars and then multiplied by the inferred number of degrees obtained with using the education award, which are listed in the fourth column of Table 26.

State governments also receive state income taxes from the education awards HFH AmeriCorps members receive post-service. The analysis estimated the pre-tax education award amount in 2020 dollars (i.e., $6,155).[57] Then the analysis multiplied it by the number of HFH AmeriCorps State and National members and HFH AmeriCorps VISTA

[57] This analysis used the 2020 to 2021 AmeriCorps education award amount ($6,345) but discounts 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

members expected to redeem the award and use it to pursue post-secondary 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 HFH 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 living allowance and stipend amounts received by HFH AmeriCorps members during and after their service term, respectively, using tax rates specific to each of their per-person values. Of note, only AmeriCorps VISTA members are given the option to choose between a cash stipend and an education award as an end-of-year benefit.[58] The different rates used for these member benefits are enumerated in Table 30.

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 HFH 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, n.d.), 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 that was spent on taxable goods, data from the Consumer Expenditure Survey (U.S. Bureau of Labor Statistics, 2021) were used. These data showed the amount of spending on a number of different goods and services by national consumers across several different pre-tax income brackets.[59] 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 HFH AmeriCorps members. This value was 43.1 percent. This proportion was then applied to HFH 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 HFH 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 HFH AmeriCorps

[58] Please see this site for additional information: https://americorps.gov/members-volunteers/vista/benefits.

[59] To calculate the estimated taxable expenditures, Consumer Expenditure Survey (CEX) Table 1203 was used from 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 HFH 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.

members using their education award to achieve higher post-secondary educational attainment post-service. These values represent a direct benefit to state and local governments in the form of increased tax revenue.

State and local government cost savings: State and local governments also benefit from HFH AmeriCorps through lifetime savings in social insurance and corrections—as reported in Trostel (2015)—due to the increase in HFH AmeriCorps members' post-secondary educational attainment after program exit. 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 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 post-secondary degrees estimated to be obtained due to the use of the education awards.

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. correction 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 HFH AmeriCorps members experiencing an increase in post-secondary 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 HFH AmeriCorps members' increased earnings due to reduced unemployment
- Additional federal income, Social Security, and Medicare taxes from the living allowance, stipend, and education award received by these members, where applicable[60]
- Additional lifetime federal taxes due to HFH AmeriCorps members' increased post-secondary educational attainment

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[60] Of note, for the end-of-year stipend amount, federal income and Social Security taxes are withheld from the amount distributed to HFH AmeriCorps members. This nuance is considered in the method used to calculate federal tax revenue associated with the stipend. Namely, these federal taxes are still calculated and included in the ROI analysis. Additional details can be found at https://americorps.gov/members-volunteers/vista/benefits.

- Reduced lifetime spending on public assistance, social insurance, and corrections due to HFH AmeriCorps members' increased post-secondary educational attainment
- Reduced federal rental assistance use by HFH homeowners due to HFH homeownership
- Medicare and Medicaid medical cost savings due to improved respiratory health of HFH household members

Federal income tax revenue: To measure federal income tax revenue that stems from reduced unemployment, the additional pre-tax earnings of HFH AmeriCorps members that are solely attributed to the HFH AmeriCorps program—as well as the pre-tax living allowance, stipend, and education award amounts received by HFH 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 30. Of note, different tax rates were used because they were specific to the per-person pre-tax earnings, living allowance, stipend, and education award amounts.

For the additional lifetime earnings of HFH AmeriCorps members that is based on their increase in post-secondary educational attainment—fueled by the use of the education award—Trostel (2015) provides additional lifetime federal income tax values. These values are used to calculate the additional income tax revenue realized by the federal government due to members' post-secondary education gains.

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 HFH AmeriCorps members from their reduced unemployment and as a result of the pre-tax living allowances, stipends, 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 HFH AmeriCorps members to calculate the additional amount of revenue the federal government receives. These same rates are also applied to the living allowance, stipend, and education award amounts received by HFH 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 HFH AmeriCorps members using their education award to complete different post-secondary education degree types post-service.

Federal government cost savings: The federal government realizes cost savings in public assistance, social insurance, and corrections due to the increased post-secondary educational attainment of HFH AmeriCorps members after program exit. Specifically, the number of additional post-secondary degrees estimated to be earned by HFH 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 comprised of worker's compensation and unemployment insurance, as noted earlier), public assistance (e.g., SNAP, Medicaid, TANF, etc.), and corrections.

Table 27 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 27. Government Costs by Educational Attainment Level per Individual's Lifetime*

Source of Government Saving	High School Diploma (2012$)	Associate Degree (2012$)	Bachelor's Degree (2012$)	Graduate Degree (2012$)
Public Assistance	**$54,155**	**$31,803**	**$14,480**	**$9,394**
Social Insurance	**$9,584**	**$8,209**	**$5,863**	**$4,732**
Federal	$3,964	$3,570	$2,660	$2,090
State/Local	$5,620	$4,639	$3,204	$2,643
Corrections	**$8,488**	**$4,055**	**$1,190**	**$725**
Federal	$713	$341	$100	$61
State/Local	$7,775	$3,714	$1,090	$664

Sources: Trostel (2015)
*Numbers may not sum due to rounding.

As mentioned earlier in this appendix, as a result of the HFH AmeriCorps program, the analysis estimated an additional 153 HFH AmeriCorps members would redeem the education award to pursue additional post-secondary education. Based on the portion of degree costs covered by the post-tax education award, this analysis calculated that an additional three associate degrees, five bachelor's degrees, and 11 graduate degrees would be obtained due to HFH AmeriCorps. 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 2020 dollars. These values are then multiplied by the number of additional post-secondary degrees estimated to be obtained—where appropriate—to represent the total cost savings realized by the federal government due to the HFH AmeriCorps 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% of the lifetime cost savings in unemployment insurance (part of social insurance; Oswald, 2018), and more than eight percent of the lifetime cost savings in corrections (Hyland, 2015). These federal government savings are shown in Table 31.

The federal government also realizes cost savings from reduced rental assistance use among HFH homeowners as a result of the HFH AmeriCorps program. Findings from Mattessich et al. (2015) indicated 25 percent of HFH homeowners that previously received federal rental assistance no longer did after moving into their HFH home. To monetize this federal government benefit, the analysis first multiplied the 25 percent by the number of additional HFH homes built nationwide calculated previously (i.e., 211). This estimated the number of national HFH homeowners who no longer needed to use rental assistance programs given they now pay no-interest mortgages for their HFH homes (i.e., 53). The analysis then used data from the Center on Budget and Policy Priorities (2019) to determine the average amount of federal rental assistance used per U.S. household receiving such assistance. Specifically, the Center on Budget and Policy Priorities (2019) reported federal funding for rental assistance for 2019 totaled $43,834,000,000 while the number of households on rental assistance totaled 5,199,000 for 2019. Thus, the average amount of rental assistance used in 2020 dollars per household on rental assistance was $8,600. Multiplying this metric by the number of households no longer using federal rental assistance due to HFH AmeriCorps estimates the total cost savings to the federal government. The result of this calculation is shown in Table 28.

Table 28. Total Cost Savings in Rental Assistance Realized by the Federal Government

Portion of HFH Homeowners Who Used Federal Rental Assistance Pre Moving But Not Post Moving (%)	Additional Homes Built Nationwide due to HFH AmeriCorps	Average Amount of Federal Rental Assistance per Household that Uses Rental Assistance (2020$)	Total Cost Savings in Federal Rental Assistance* (2020$)
25%	211	$8,600	$454,166

Sources: Mattessich et al. (2015), Viola et al. (2018), HFHI, CPI, and Center on Budget and Policy Priorities (2019)
*Numbers may not total due to rounding.

Lastly, the federal government realizes medical cost savings due to the self-reported net improved respiratory health of HFH household members after moving into an HFH home. As stated earlier, according to Mattessich et al. (2015), HFH homeowners who reported they or someone in their household had a respiratory or lung illness prior to moving into their HFH home also indicated if they experienced improved or deteriorating respiratory health after moving into their HFH home. This results in medical cost savings to several stakeholder groups which totals $31,300 for the most recent program year. One of these stakeholder groups is the federal government which realizes Medicare and Medicaid cost savings. Using 2018 MEPS data from AHRQ (2021), the analysis determined that 36 and 16 percent of total medical costs savings are realized by the federal government in terms of Medicare and Medicaid, respectively. These cost savings—as well as those for the other stakeholder groups mentioned previously—are summarized in Table 29.

Table 29. Medical Cost Savings Realized by Stakeholder Group

Stakeholder Group	Portion of $31,300 Total Savings Realized by Stakeholder Group Based on MESP Data (%)	Medical Cost Savings Realized (2020$)
HFH Household Members (i.e., OOP)	**8%**	**$2,506**
Private Insurance Companies	**34%**	**$10,682**
Other Healthcare Payers	**6%**	**$1,949**
Federal Government	**52%**	**$16,163**
Medicare	36%	$11,283
Medicaid	16%	$4,880
Total	**100%**	**$31,300**

Sources: HFHI, Viola et al. (2018), Mattessich et al. (2015), ICF, CPI, and AHRQ (2021)

Table 30 shows the tax rates applied to HFH 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, stipend, and education award amounts received by HFH AmeriCorps members either during their service term or upon service completion.

Table 30. 2020 Tax Rates and Ratio of Taxable Expenditures for HFH AmeriCorps Members' Earnings, Living Allowances, Stipends, and Education Awards

Metric	Rate for Additional Earnings & Education Award* (%)	Rate for Living Allowance, Stipend, & Education Award** (%)	Notes
Estimated Proportional Federal Income Tax	8.07%	1.67%	• Tax rates are used which 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	3.03%	1.95%	• Tax rates are used which 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.

Metric	Rate for Additional Earnings & Education Award* (%)	Rate for Living Allowance, Stipend, & Education Award** (%)	Notes
Social Security Tax	6.20%	6.20%	• 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%	• Medicare tax rate for employees and employers. • These rates are applied to the pre-tax value of each metric being taxed.
Sales Tax	7.43%; N/A to the Education Award	7.43% on the Living Allowance and Stipend; N/A to the Education Award	• The combined state and average local tax rate for each state was summed and weighted based on states' population 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 and stipend amounts.
Ratio of Taxable Expenditures per National Consumer	43.1%; N/A to the Education Award	64.4% on the Living Allowance and Stipend; N/A to the Education Award	• Percent 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, the pre-tax living allowance amount, or the pre-tax stipend 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 31 shows the amount of tax revenue generated and savings in expenditures for state and local versus federal government that are solely credited to the HFH AmeriCorps 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 HFH AmeriCorps program impacts.

Table 31. 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	**$399,827**	**$1,210,776**	**$1,876,414**
State Income Tax Revenue from Education Awards, Living Allowances, and Stipends**	$139,302	$139,302	$139,302
State and Local Sales Tax Revenue from Living Allowances and Stipends	$218,811	$218,811	$218,811
State Income Tax Revenue from Employment	$22,428	$274,187	$447,816
State and Local Sales Tax Revenue from Employment	$19,286	$235,769	$385,070
State Income, Sales, and Property Taxes from Post-secondary Educational Attainment (Lifetime)	$-	$318,579	$637,159
Savings in Reduced Social Insurance and Corrections Spending from Post-secondary Educational Attainment (Lifetime)	$-	$24,128	$48,256
Federal Government Benefits	**$1,262,762**	**$3,937,898**	**$6,207,292**
Savings in Federal Rental Assistance from HFH Home Ownership	$454,166	$454,166	$454,166
Savings in Medical Costs due to Improved Health of HFH Household Members	$16,163	$16,163	$16,163
Federal Income Tax Revenue Education Awards, Living Allowances, and Stipends**	$157,858	$157,858	$157,858
Social Security and Medicare Tax Revenue from Education Awards, Living Allowances, and Stipends**	$518,099	$518,099	$518,099
Federal Income Tax Revenue from Employment	$59,810	$731,178	$1,194,197
Social Security and Medicare Tax Revenue from Employment	$56,666	$692,735	$1,131,410
Federal Income Tax Revenue from Post-secondary Educational Attainment (Lifetime)	$-	$783,335	$1,566,671
Social Security Tax Revenue from Post-secondary Educational Attainment (Lifetime)	$-	$467,188	$934,376
Savings in Reduced Social Insurance, Corrections, and Public Assistance Spending from Post-secondary Educational Attainment (Lifetime)	$-	$117,176	$234,352
Total	**$1,662,589**	**$5,148,674**	**$8,083,705**

*Numbers may not sum due to rounding.
**Living allowances, stipends, and education awards are one-time taxable payments. The resulting tax revenue does not vary by scenario.

Measuring Forgone Benefits (Opportunity Costs)

The analysis included two types of forgone benefits, referred to as opportunity costs, in the three ROI calculations to conservatively estimate the return of the HFH AmeriCorps program: a professional opportunity cost to HFH AmeriCorps participants and an investment opportunity cost to funders. Each of these forgone benefits is subtracted from the total program benefits (shown above) in each of the ROI calculations. The methodologies used to calculate these two forgone benefits (opportunity costs) are described below.

Forgone Benefits from Professional Opportunity Cost to HFH AmeriCorps Members

There is a forgone benefit (professional opportunity cost) to HFH AmeriCorps members for their period of national service, during which they could have otherwise been working and earning higher pay. This includes both the forgone earnings of HFH AmeriCorps members for their service term and the forgone taxes associated with those lost earnings. To calculate this forgone benefit, the analysis first used the demographic distribution of HFH 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., 2.6 percent). This represents how many of these HFH AmeriCorps members would have been unemployed if they did not serve with HFH AmeriCorps. Using the weighted unemployment rate and the number of HFH AmeriCorps members that served during the 2019–2020 program year (i.e., 345), the analysis estimated the number of members that would have been employed without serving with HFH AmeriCorps based on their demographic characteristics (i.e., 336). Then the analysis multiplied this value by the weighted post-tax annual earnings. This is derived from the pre-tax annual earnings listed in Table 22. 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 out all applicable payroll taxes (e.g., federal income, state income, Medicare, and Social Security). The product of multiplying 336 by the weighted post-tax annual earnings represents what HFH AmeriCorps members would have earned in total if they did *not* serve with HFH AmeriCorps. Separately, the analysis then multiplied the number of HFH AmeriCorps members that served by the amount they earned during their national service in the form of a post-tax living allowance (i.e., $13,215 per person). This represents the aggregate amount HFH 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 HFH AmeriCorps, shown in Table 32. Forgone Earnings of HFH AmeriCorps Members for a Service Term.

Table 32. Forgone Earnings of HFH AmeriCorps Members for a Service Term

Row	Component	Value*	Source
A	HFH AmeriCorps Members	345	HFHI
B	Weighted Unemployment Rate (%)	2.6%	ASEC (2019) & HFHI
C	Weighted Post-Tax Annual Earnings Per Person (2020$)	$43,669	ASEC (2019), CPI, & HFHI
D	Post-Tax Living Allowance Per Person	$13,215	HFHI
E	Total Post-tax Earnings Forgone (2020$)	$10,109,500	[A x (1- B) x C] – (A x D)

*Numbers may not sum due to rounding.

The second portion of this professional opportunity cost was the forgone taxes associated with the earnings of HFH 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 9.3 and 3.3 percent, respectively. The analysis also estimated the sales taxes lost based on the per-person post-tax earnings forgone by the HFH 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 HFH AmeriCorps members (i.e., $54,782), 39.9 percent of their income would have been spent on taxable goods, as opposed to 64.4 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 HFH AmeriCorps instead of working for higher pay. The totals for these taxes are listed in Table 33.

Table 33. Forgone Taxes Associated with the Forgone Earnings of HFH AmeriCorps Members for a Service Term*

Forgone Taxes	Taxes without Service Term (2020$)	Taxes Realized from Living Allowance (2020$)	Net Taxes Forgone (2020$)
Federal Forgone Taxes (i.e., Federal Professional Opportunity Cost)	**$3,125,437**	**$479,099**	**$2,646,338**
Federal Income Taxes	$1,717,725	$86,024	$1,631,701
Social Security and Medicare Taxes	$1,407,712	$393,075	$1,014,637
Non-Federal Forgone Taxes	**$1,042,064**	**$318,223**	**$723,842**
State Income Taxes	$607,399	$100,003	$507,395
Sales Taxes	$434,666	$218,220	$216,446
Total Taxes	**$4,167,501**	**$797,322**	**$3,370,180**

*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 the HFH AmeriCorps 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., $1,631,701) and the net forgone Social Security and Medicare taxes (i.e., $1,014,637). The sum of these two values is called the federal professional opportunity cost. The sum of all the values listed in Table 33 and the forgone post-tax earnings of HFH AmeriCorps members is called the total professional opportunity cost. These naming conventions are referenced in the Calculating ROI section.

Forgone Benefits from Investment Opportunity Cost to Funders

The investment opportunity cost estimates the expected forgone return if funds used to support the activities and positions of HFH 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 HFH AmeriCorps 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 <u>only</u> 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 <u>all</u> HFH AmeriCorps 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 HFH AmeriCorps funds and 2) only federal HFH AmeriCorps 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 HFH AmeriCorps 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, 1.45, and 1.5 percent, respectively. Also, the number of years elapsed on these U.S. Treasury bonds was equal to the number of years the different scenarios assumed HFH 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 bi-annually according to the U.S. Department of Treasury, the formula used to calculate the forgone accrued interest for each of the three scenarios for the two funding streams is listed in Figure 3, 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 3. 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 investment opportunity cost calculated by scenario and funding stream are listed in Table 34, 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 34. 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	1.30%		1.45%		1.50%	
Years Elapsed	1		15		30	
Funding Amount	$8,795,423	$5,933,696	$8,795,423	$5,933,696	$8,795,423	$5,933,696
Forgone Accrued Interest	**$114,712**	**$77,389**	**$2,128,409**	**$1,435,898**	**$4,975,404**	**$3,356,579**

Measuring Program Costs

Table 35 shows the program costs of the HFH AmeriCorps program by funding source. AmeriCorps is the leading funder for the HFH AmeriCorps program, covering more than two-thirds of the program's annual operating costs given that it supplies the AmeriCorps State and National and AmeriCorps VISTA grants as well as the expected education awards received by HFH AmeriCorps members. Other non-AmeriCorps funders (i.e., HFH host sites) matched 48 percent of AmeriCorps's contribution for the most recently completed program year. That matched amount represented 33 percent of total HFH AmeriCorps program funding for the year.

Table 35. Funding Sources and Amounts for HFH AmeriCorps (2019–2020)*

Funding Source	AmeriCorps State and National	AmeriCorps VISTA
AmeriCorps Grants	**$3,516,572**	**$796,728**
Living Allowance	$3,516,572	$470,068
Health Insurance	$-	$-
Worker's Compensation	$-	$-
Stipend	$-	$12,609
Other (e.g., staff salaries, benefits, travel, operation)	$-	$314,051
Host Sites (i.e., Match Funding)	**$2,638,420**	**$223,307**
Living Allowance	$21,626	$109,191
Health Insurance	$454,286	$-
Worker's Compensation	$566,494	$-
Stipend	$-	$-
Other (e.g., staff salaries, benefits, travel, operation)	$1,596,014	$114,116
Expected Education Awards	**$1,478,101**	**$142,296**
Sub-Total	**$7,633,093**	**$1,162,331**
Grand Total	**$8,795,423**	

Source: HFHI
*Numbers may not sum due to rounding.

Calculating ROI

To complete the three ROI calculations for the HFH AmeriCorps program, the sum of applicable program benefits is reduced by the forgone benefits from 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., HFH homeowners, HFH household members, HFH AmeriCorps members, 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 $1.00 of investment (or program cost).[61]

The formulas used to calculate each of the three ROIs are shown below:[62]

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

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

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

[61] 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.

[62] Non-government stakeholders for this ROI analysis include HFH homeowners, HFH household members, HFH AmeriCorps members, private insurance companies, and other healthcare payers.

Tables 36, 37, and 38 show the total program benefits, forgone benefits (opportunity costs), program costs, and ROI results for each scenario.

Table 36. ROI Calculations for Short-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	$19,044,993	$19,044,993	$1,262,762
Total Forgone Benefits (Opportunity Costs)	$13,557,068	$13,594,391	$2,723,727
Total Program Costs	$5,933,696	$8,795,423	$5,933,696
Result	**$0.92**	**$0.62**	**$0.25**

Table 37. 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	$31,533,941	$31,533,941	$3,937,898
Total Forgone Benefits (Opportunity Costs)	$14,915,578	$15,608,088	$4,082,236
Total Program Costs	$5,933,696	$8,795,423	$5,933,696
Result	**$2.80**	**$1.81**	**$0.02**

Table 38. 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	$41,375,393	$41,375,393	$6,207,292
Total Forgone Benefits (Opportunity Costs)	$16,836,259	$18,455,083	$6,002,918
Total Program Costs	$5,933,696	$8,795,423	$5,933,696
Result	**$4.14**	**$2.61**	**$0.03**

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