

Public Service for Ohio

A Cost-Benefit Analysis



 **Scioto Analysis**
Economics | Public Policy

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Executive Summary

This study is a cost-benefit analysis of the implementation of AmeriCorps volunteering programs at the state level in the state of Ohio. While volunteerism is widely regarded as an important part of one's duty to their community, in this analysis, we investigate whether a state volunteer program would produce economic benefits in excess of economic costs of the program.

Overall, we estimate that existing AmeriCorps programs within Ohio **cost anywhere from \$22-\$24 million** in a given year in tax distortions and lost current wages for volunteers. On the benefits side, Ohio's volunteer programs likely increase the average volunteer's lifetime earnings by \$22,000 - \$50,000, while reducing potential for career criminality by participants and preventing 100 acts of vandalism per year. All **benefits total anywhere from \$25-\$54 million**, meaning **the range of net benefits is anywhere from \$1-\$30 million**. We estimate that an expanded OhioCorps program would be most likely to produce \$15-120 million in net economic benefits depending on the size of the expansion.

Background

According to the United State Census Bureau, Ohio lost about 10,000 net residents in 2018.¹ Policymakers worry about the "brain drain" in Ohio as the state continues to lose educated residents while not attracting new high-skilled workers. While there are many tools for building civic pride and giving high-education residents a reason to stay in the state, one of the most promising policy options is providing opportunities for state public service.

Introduced in 1993, the AmeriCorps program was an ambitious program. Its goal was to utilize the new Corporation for National Service (CNS) to coordinate all national service programs. At the time, this program was funded with just over \$350 million which amounted to 0.2% of the federal budget.² Compared to the 2019 enacted budget of just over \$1 billion, this seems relatively low. However, the current \$1 billion budget now makes up 0.0002% of 2019's total federal budget, meaning it is one one-thousandth the relative size of the original enacted budget in relative terms.³

When AmeriCorps was initially created, Congress outlined four main goals for the program.⁴ First, the program is concerned with *satisfying unmet social needs*, which means directly helping communities with human, environmental, educational, and public safety problems. This goal can be seen in some of Ohio's teaching and environmentally-focused programs. The second goal is the *development of Corps members*. AmeriCorps exit surveys have found members become more driven and self-confident throughout the course of the program and become healthier and earning more.⁵ The third aim is *enhancing civic ethic*, providing an opportunity for people to contribute to their community and thus connect to their fellow citizens. The ongoing impact of this goal of national service can be found in enhanced long-term volunteering of Corps members.⁶ The final goal is *invigorating lethargic bureaucracies*. This is embodied in the aim of the Corporation for National Service to consolidate a far-flung bureaucracy of national service into one agency so programs can be managed centrally.

¹ "State-to-State Migration Flows," United States Census Bureau, July 20, 2020.

² Perry, James L.; Thomson, Ann Marie; Tschirhart, Mary; Mesh, Debra; and Lee, Geunjo, "Inside a Swiss Army Knife: An Assessment of AmeriCorps" (1999). Service Learning , General Paper 61.

³ "The Federal Budget in 2019: An Infographic ." Congressional Budget Office, April 15, 2020. [cbo.gov/publication/56324](https://www.cbo.gov/publication/56324).

⁴ Perry et. al. 1999

⁵ Ibid.

⁶ Belfield, Clive. "The Economic Value of National Service." Voices for National Service, September 2013. [voicesforservice.org/wp-content/uploads/2016/03/Sep19_Econ_Value_National_Service-2.pdf](https://www.voicesforservice.org/wp-content/uploads/2016/03/Sep19_Econ_Value_National_Service-2.pdf).

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This cost-benefit analysis investigates the costs of participation in AmeriCorps programs within Ohio, the benefits of these programs, and the potential impact of expanding these programs into a larger “OhioCorps” program. Our goal is to answer two main questions:

1. Do Ohio AmeriCorps programs as they stand today have positive net economic benefits?
2. What would be the economic impact of expansion of volunteering programs within the state Ohio into a more robust “OhioCorps” program?

Standing

For purpose of this study, we consider the state of Ohio to be the appropriate level of analysis. As much as possible, benefits and costs counted are limited to residents of the state of Ohio.

Methodology

This study uses standard policy analytic techniques to offer answers to the above questions. We carry out a best-practice cost-benefit analysis following the guidance in Boardman et al’s *Cost-benefit Analysis: Concepts and Practice* to determine economic impact. While much could be done to assess the impact of programs on retention of talent, growth of civic virtue, or bureaucratic efficiency, our focus in this study is the net economic impact of current AmeriCorps programs in the state and an expanded OhioCorps program.

Policy Options

The federal government spent just under \$9 million on AmeriCorps programs in Ohio in 2020, which is 0.02% the size of Ohio’s state general revenue fund.⁷ We analyzed policy options that would expand this program through state spending, creating an “OhioCorps” program for the state. The current \$9 million program in Ohio has just over 800 participants. Policy options to create an OhioCorps program that effectively increases the Ohio AmeriCorps program by 200% to 800% are illustrated in the table below.

Funding Increase for OhioCorps Program	0%	200%	400%	800%
Participants	800	1600	3200	6400
Total funding	\$9 Million	\$18 Million	\$36 Million	\$72 Million

A robust 800% increase in funding the total cost of Ohio programs would make up 0.2% of Ohio’s 2020 \$34 billion general revenue fund budget. This increase of 800% participation and funding could conceivably provide volunteer opportunities for 7% of Ohio’s high school-age youth.⁸ A robustly funded program could provide opportunities for a number of youths to participate in public service who would not have done so otherwise.

⁷ “Main Operating Budget in Brief.” Legislative Budget Office of the Legislative Service Commission, n.d. lsc.ohio.gov/documents/budget/133/mainoperating/EN/budgetinbrief-hb166-en.pdf.

⁸ “Ohio Education by the Numbers.” Thomas B. Fordham Institute, March 2020. ohiobythenumbers.com/.

Impacts

In order to determine the impacts of expanded volunteer programs in Ohio, we performed a literature review on the various outcomes of participating in a yearlong program like AmeriCorps. From this literature review, we identified two major costs and four major benefits of volunteer program participation.

Costs

1. **Opportunity Cost of Time.** Time that volunteers spend volunteering is time they do not spend in the labor force. The opportunity cost of this time means less wages for volunteers and less output for employers and consumers who benefit from that time spent working.
2. **Marginal Excess Burden of Taxation.** Taxes used to fund an OhioCorps program cause distortions in markets that depress spending and reduce labor output. Rather than counting the budget line item as the cost, which is offset by transfers in the form of wages to program administrators and stipends to students, we estimate the magnitude of the market distortions caused by taxes used to run the program.

Benefits

1. **Increase in Human Capital.** AmeriCorps volunteers tend to have education, earnings, and employment prospects higher than nonparticipants that, along with education awards for the program, improve human capital for volunteers and improve future labor market earnings.
2. **Reduction in Career Criminality.** Participation in a public service program reduces propensity for a volunteer to become a career criminal, thus saving costs for victims of crimes and the criminal justice system.
3. **Leveraged Future Service.** Spending a year working in a volunteer program improves participants' likelihood to volunteer in the future.
4. **Reduction in Juvenile Delinquency.** People taking part in public service programs are less likely to commit vandalism after positive intervention.

It is important to note that we are possibly undercounting benefits by not monetizing “community spillovers”. It is accepted by many analysts of community service programs that there are a multitude of positive spillovers from volunteerism.^{9,10,11} These range from benefits within the participants' life such as increased self-esteem and work ethic to broader community spillovers such as increased rates of community education and improved infrastructure. Without a proper way of monetizing these more abstract results of volunteering, we erred on the side of caution and did not include these benefits in our calculations.

Costs

1. Opportunity Cost of Time

With 800 youth volunteers spending over 1.2 million hours over the course of their programs, the opportunity cost of these youth not being in the workforce is significant. Using the median income in Ohio, we estimated the value those 1.2 million hours would have generated volunteers if the participants were instead working jobs

⁹ Lee, Y.-j. and Brudney, J.L. (2015), Work-to-Society Spillover?. *Nonprofit Management and Leadership*, 26: 105-119.

doi:10.1002/nml.21146

¹⁰ Belfield 2013

¹¹ Perry et. al. 1999

within Ohio.¹² At a median hourly wage of \$17.55 the opportunity cost of 800 participants comes out to a point estimate of \$21 million of lost wages per year. While national service is voluntary and we must assume there is some benefit gained by participants they trade off current income for, whether it is tangible higher future earnings or intangible current “warm glow,” we include this cost to err on the side of higher costs for the program.

2. Marginal Excess Burden of Taxation

When reviewing literature related to the costs and benefits of AmeriCorps programs, analysts consider the budgetary cost of the program as one of its highest costs. However, since the cost of the programs is a transfer offset by payments in stipends and administrative costs, the true economic cost of the program expenses is **the tax distortion caused by raising revenue to pay for the program**. Using a range of suggested values from the literature on tax distortions, we settled on a point estimate rate of marginal excess burden of taxation of 24%.^{13,14} Using the 24% marginal excess burden of taxation estimate implies that from \$9 million spent on programs within Ohio the actual cost in tax distortions is approximately \$2 million.

Benefits:

1. Increase in Human Capital

One year of participation in AmeriCorps has been equated to increased human capital equivalent to a year of post-secondary education.¹⁵ According to a Pew research study, one year of post-secondary education results in an increase in yearly earnings of around \$2,000.¹⁶ We took this value and discounted it at a conservative rate of 7% over participants assumed 45 year working life. This results in a total estimated benefit of AmeriCorps participation of \$39,000 per participant over the course of their working life. Looking at all 800 participants in a year, this comes out to a total of over \$31 million in increased human capital.

2. Reduction in Career Criminality

Participating in volunteer programs has been found to reduce the potential of career criminality. One career criminal can cause significant damage over the course of her life, accruing various costs that add up over the course of her criminal career. According to Cohen (2009), the cost of one career criminal in today’s dollars likely ranges anywhere from \$2.4-\$4 million. For a single person, this cost is significant.

High-risk youth make up an average of 6% of all youth according to Belfield. He also estimates that youth programs reduce career criminality risk for high-risk youth by about 4%. This means that of the 800 participants, there will be an estimated reduction of career criminality for the estimated 48 potential career criminals of 4%, or two less participants becoming career criminals. Using a middle ground estimate of \$3.2

¹² https://www.bls.gov/oes/2017/may/oes_oh.htm

¹³ Dobes, Leo, Joanne Leung, and George Argyrous. "Appendix 7: Deadweight Economic Loss Caused by Raising Revenue for Projects and Programs." In *Social Cost-benefit Analysis in Australia and New Zealand: The State of Current Practice and What Needs to Be Done*, 203-12. Australia: ANU Press, 2016. Accessed July 23, 2020. www.jstor.org/stable/j.ctt1d10hms.19.

¹⁴

Bos, Frits, Thomas van der Pol, and Gerbert Romijn. "Should Benefit-Cost Analysis Include a Correction for the Marginal Excess Burden of Taxation?" *Journal of Benefit-Cost Analysis* 10, no. 3 (2019): 379–403. doi:10.1017/bca.2019.11.

¹⁵ Belfield 2013

¹⁶ "The Monetary Value of a College Education." Pew Research Center, May 30, 2020. pewsocialtrends.org/2011/05/15/chapter-5-the-monetary-value-of-a-college-education/.

million per career criminal, this amounts to a point estimate of a total of \$6.4 million per year in career criminality prevention benefits from AmeriCorps programs in Ohio.

3. Leveraged Future Service

People who participate in AmeriCorps are more likely to volunteer in the future. Just as volunteering during one’s time in AmeriCorps produces benefits, so does future volunteering. Belfield estimates that every 100 hours of program volunteering results in a future 2 hours of volunteering induced at a later date.¹⁷ This future service can take place in the participant’s own life or can represent a participant’s ability to bring others to volunteering opportunities. Thus the benefits of leveraged future service are calculated by multiplying increased human capital benefits by 0.02 to capture the 2% boost in eventual realized benefit. This amounts to about \$650,000 in monetary terms for Ohio’s current level of AmeriCorps participation via the output and benefits to participants.

4. Reduction in Juvenile Delinquency

Participation in volunteer programs has been found to reduce instances youth vandalism. The cost of vandalism comes out to about \$90 per participant.¹⁸ Because of the assumed rate of reduction in incidences of school vandalism, we found that current rates of participation in AmeriCorps programs within Ohio could prevent up to \$70,000 in total youth delinquency related costs. Using Belfield’s estimates this could prevent up to 100 vandalisms at baseline levels, increasing to 800 at our highest rate of expansion.¹⁹ This value is based on reducing the average rates of high risk youth to vandalize of about 50% by half.

Results and Distributional Analysis

With the relatively small cost to the taxpayer from the excess burden of taxation, most of the cost detailed in our point estimate comes from the opportunity cost of AmeriCorps participants missing out on wages earned in the workforce during their service. This cost is balanced by the various benefits participants receive during their time volunteering in their program and throughout their life. Point estimates suggest AmeriCorps programs in Ohio have net benefits.

Opportunity Cost	\$21 Million
Excess Burden of Taxation	\$2 Million
Increase in Human Capital	\$31 Million
Reduction in Career Criminality	\$6.4 Million
Leveraged Future service	\$650,000
Reduction in Juvenile Delinquency	\$70,000
Total	\$15 Million

Also notable is that the value of “community spillovers” not included in our final estimates. If we had included these, a scaled value based on program participants from Clive Belfield’s research would suggest a value of approximately \$2 million for the state of Ohio.²⁰

¹⁷ Belfield 2013

¹⁸ Belfield, Clive , Brooks Bowden, Alli Klapp, Henry Levin, Robert Shand, and Sabine Zander. “The Economic Value of Social and Emotional Learning .” Center for Benefit-Cost Studies in Education Teachers College, Columbia University, February 2015. blogs.edweek.org/edweek/rulesforengagement/SEL-Revised.pdf.

¹⁹ ibid

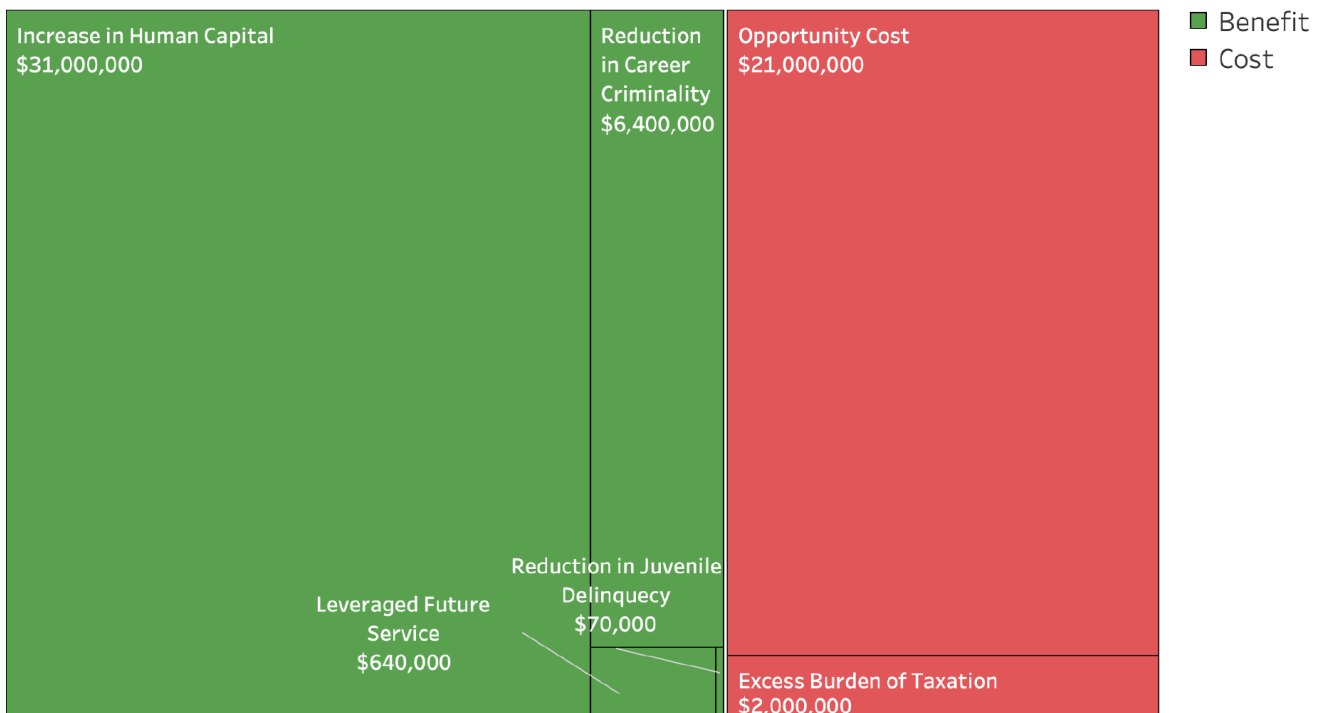
²⁰ Belfield 2013

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The relationship between the opportunity cost and increase in human capital is worth noting. By participating in volunteering programs, participants are essentially putting off providing value in the workforce for a year in order to increase future earning potential. This distributional difference in the timing of wage impacts implies an immediate loss but a long-term benefit for participant earnings.

The effects of these programs impact three main groups: participants, taxpayers, and the labor force. Each group is impacted differently, with volunteers seeing the most benefits over the course of their life. While the state of Ohio’s labor force is seemingly taking the brunt of the cost, volunteer increased future earnings benefit them individually while also increasing Ohio’s output as a whole.

1. **Program Participants.** The most significant impacts are seen in the lives of the volunteers participating in AmeriCorps programs. They become better educated, less likely to participate in delinquent and criminal activity, and more likely to continue volunteering throughout their lives. The cost of the programs can be viewed as a transfer towards making participant’s futures more fruitful.
2. **Taxpayers.** One of the primary costs falls on the taxpayers. While all Ohio programs cost just under \$9 million the actual cost to the taxpayer is just a fraction of that. Since the money for the programs go directly back to the state through the participants stipends, increased infrastructure, and whatever else AmeriCorps provide, the direct cost becomes a transfer, meaning it has zero net benefits at the level of society. The direct taxpayer cost comes from the excess burden of taxation. This results in taxpayers only really paying a small percentage of the program costs.
3. **Labor Force.** One of the main costs considered in this analysis is the opportunity cost of participation in AmeriCorps programs. By taking a year that could be spent in the workforce and instead focusing on volunteerism, each participant has a corresponding opportunity cost; the lost value participants could have produced in the workforce. While this is an immediate cost to the state in terms of reduced production, the increase in human capital for each participant eventually overtakes this cost.



Sensitivity Analysis

In order to test the accuracy of these results, we performed a Monte Carlo simulation to determine a range of likely values. These simulations use estimated ranges of costs and benefits to simulate the range of likely outcomes in order to account for potential variations in outcome. Using the range of results from 10,000 simulations of each policy option, we determined the range of likely costs and benefits with 95% confidence. By varying inputs based on burden of taxation, reduction in career criminality, and the lifetime value of one-year equivalent of increased human capital, we then determined the most likely range of outcomes for costs and benefits.

	Low	Expected	High
Opportunity Cost	\$21 Million	\$21 Million	\$21 Million
Excess Burden of Taxation	\$3 Million	\$2 Million	\$1 Million
Increase in Human Capital	\$22 Million	\$31 Million	\$41 Million
Reduction in Career Criminality	\$2.5 Million	\$6.4 Million	\$12 Million
Leveraged Future Service	\$440,000	\$650,000	\$820,000
Reduction in Juvenile Delinquency	\$70,000	\$70,000	\$70,000
Total	\$1 Million	\$15 Million	\$32 Million
Cost to Benefit Ratio	1.04	1.65	2.45

As participation increases, so do the costs and benefits of the program. If program funding doubles to \$18 million, the increased ranges will as well. Excess burden of taxation, for example, will become \$2-\$6 million while increased human capital becomes \$44-\$82 million. Using the sensitivity analysis along with the policy options being considered, we can see expected worst, best, and most likely case-scenarios for expansion of Ohio volunteering programs.

With the range given by our Monte Carlo simulation, we can compare our results to other studies. Using fourteen previous cost-benefit analyses on the effectiveness of national service programs, we can see that our estimates fall into the range reported by other cost-benefit analyses of these programs.

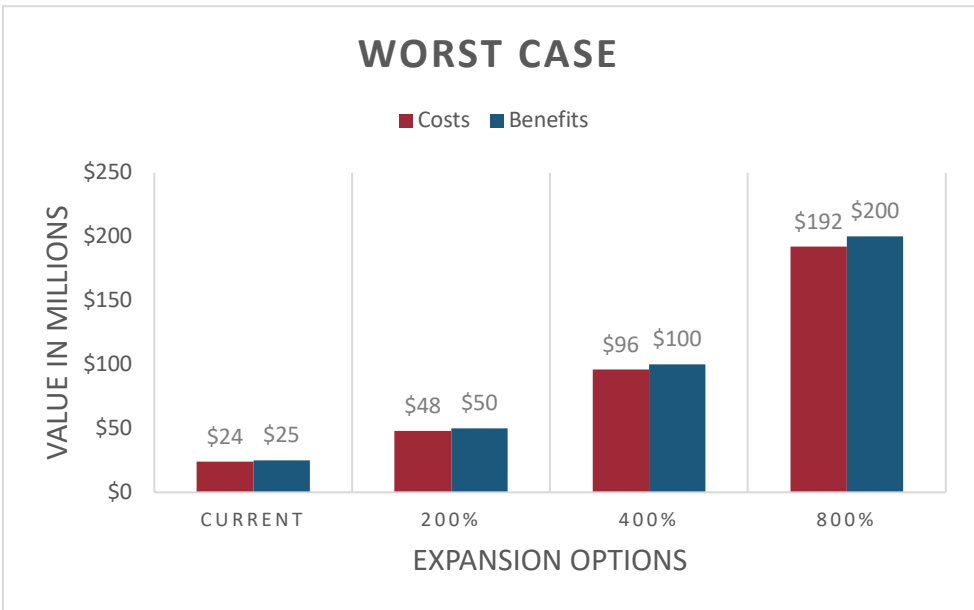
Program Type	Studies Done	Benefit/Cost Ratio
AmeriCorps	8	1.23 – 2.51
Conservation Corps	3	0.96 – 1.59
Housing Programs	2	2.40 – 3.90
Care Programs	1	1.20
OhioCorps	1 (Our Analysis)	1.04 – 2.45

Source: Belfield 2013

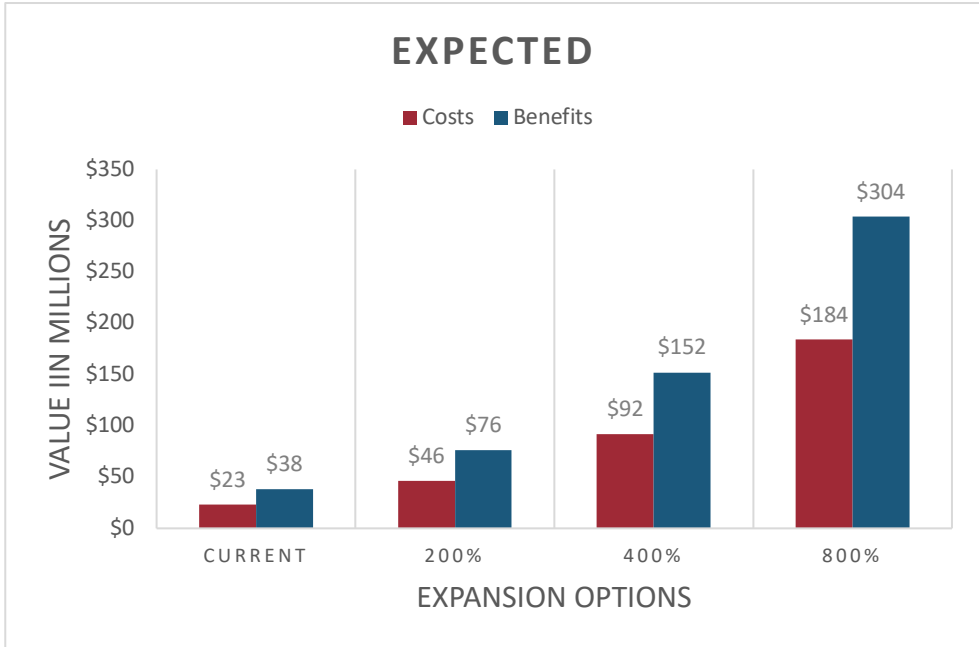
All 10,000 simulations run yielded net benefits from expansion of state volunteering programs. Our worst-case scenario benefits just narrowly outweigh costs, slightly widening that gap as expansion continues.



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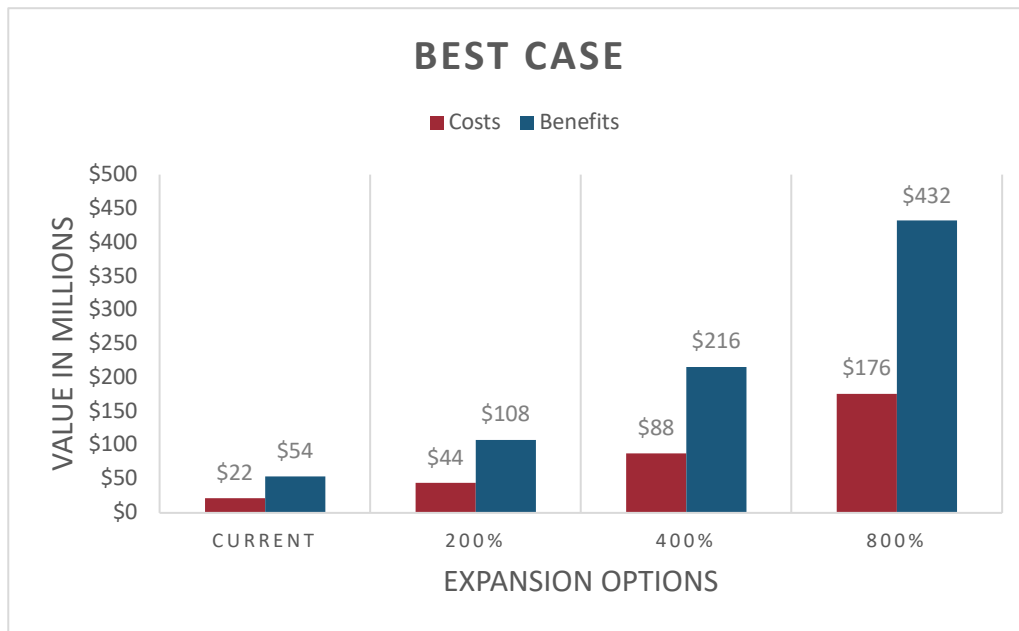
Expected results show a much rosier picture with expansion options producing net benefits of \$30-120 million depending on their size.



Finally, our best case calculations show very high net benefits, increasing with more investment. These rosy scenarios imply a 2.5 benefit to cost ratio of an OhioCorps program.



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This implies that larger investments in an expanded OhioCorps program would likely have larger net benefits for the state of Ohio. Again, it is important to note that each of these scenarios possibly undercounts benefits. Additionally, it should be kept in mind that community spillovers in the form of improved civic pride, infrastructure, and environmental efforts all exist as unmonetized benefits. That being said, even from a pure economic standpoint, these results imply a more robust OhioCorps program will yield greater net benefits than a smaller program.

Acknowledgments

This analysis was conducted by Noah Stein and Rob Moore.

Appendix A: Discounted Increased Human Capital Benefits

Year	Undiscounted Value	Discounted Value
1	\$2,900	\$2,710
2	\$2,900	\$2,533
3	\$2,900	\$2,367
4	\$2,900	\$2,212
5	\$2,900	\$2,068
6	\$2,900	\$1,932
7	\$2,900	\$1,806
8	\$2,900	\$1,688
9	\$2,900	\$1,577
10	\$2,900	\$1,474
11	\$2,900	\$1,378
12	\$2,900	\$1,288
13	\$2,900	\$1,203

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14	\$2,900	\$1,125
15	\$2,900	\$1,051
16	\$2,900	\$982
17	\$2,900	\$918
18	\$2,900	\$858
19	\$2,900	\$802
20	\$2,900	\$749
21	\$2,900	\$700
22	\$2,900	\$655
23	\$2,900	\$612
24	\$2,900	\$572
25	\$2,900	\$534
26	\$2,900	\$499
27	\$2,900	\$467
28	\$2,900	\$436
29	\$2,900	\$408
30	\$2,900	\$381
31	\$2,900	\$356
32	\$2,900	\$333
33	\$2,900	\$311
34	\$2,900	\$291
35	\$2,900	\$272
36	\$2,900	\$254
37	\$2,900	\$237
38	\$2,900	\$222
39	\$2,900	\$207
40	\$2,900	\$194
41	\$2,900	\$181
42	\$2,900	\$169
43	\$2,900	\$158
44	\$2,900	\$148
45	\$2,900	\$138
Total		\$39,456