A Return on Investment
The Hillside Work Scholarship Connection

Finger Lakes Health Systems Agency
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Executive Summary

The primary goal of the Hillside Work Scholarship Connection (HW-SC) is to improve retention and graduation rates for high-risk students enrolled in the Rochester City School District (RCSD). This is accomplished through the provision of social and academic support systems, including school-based youth advocates, job training and placement, and mentoring at job sites. Supporters of the program view it as a preventive initiative, representing an investment in the lives of individual young people, and hence an investment in the community.[i]

Overall Benefit

The HW-SC more than pays for itself through increased earnings for individuals and decreased government expenditures. By age 30, the difference in the earned income of program participants, since leaving school, compared to non-participants, exceeds program costs by 40 percent. Overall, the estimated increase in income, to age 30, for a cohort of 100 students completing the program[ii] (when compared to a similar group not going through the program) is $1.69 million. Over the same time period, reductions in government outlays for public assistance programs such as Medicaid, TANF/Safety Net and Food Stamps, for participants compared to non-participants, exceeds HW-SC costs by 45 percent. There are also increases in government tax revenues as a result of the increased earning potential of program participants; however, these are largely offset by increases in Earned Income Credits.

Specific Program Cost-Reductions
Overall, net government outlays for a HW-SC cohort of 100 students, from the time they left school to age 30 (with an average graduation rate of 61%, compared to 29%) are an estimated $1,880,084 lower than for a comparable non-program group**.** By either increasing graduation rates or delaying year of dropout, the HW-SC had the following effects on government program costs:

- A savings of an estimated $817,666 in Medicaid costs
- An estimated reduction of $640,146 in TANF/Public Assistance costs
- Food stamp program cost reduction of an estimated $284,153
- An estimated savings of $183,253 in incarceration costs, based on the average daily cost of food and medical care.

These cost reductions are outlined in Tables A1-A3, and graphically presented in Chart B.

Additional Expenses
Not all government costs decreased for those participating in the HW-SC. Unemployment costs increased an estimated $22,214. At first this may seem counter-intuitive, because more high school graduates are likely to have jobs than are drop outs; however, because one needs to have first had employment to qualify for unemployment benefits, more in the HW-SC cohort are likely to collect benefits.

While there is an estimated increase in tax revenues of $33,471 to the Federal government, and $25,705 to New York State, plus a combined sales tax revenue increase of $52,728, the federal income tax gains were entirely wiped out by an increase to the Earned Income Credit of $124,466. State Earned Income Credit increased $10,358.

Additional costs to the school district for the additional students who remain in school because of the program were not estimated. It is unlikely that there will be any additional marginal costs to the schools; because the additional student years will be spread across all high schools, and it is doubtful that there will be a need to hire additional teachers.

The Effect of Growth in the Program
This analysis is based on a cohort of 100 students; however, the program is much larger, and is anticipated to grow substantially in the coming years. Chart A demonstrates the potential future return on an investment in the HW-SC, given different levels of effort in the number of program participants.

Chart A. The Monetary Impact of an Increase in HW-SC Enrollment

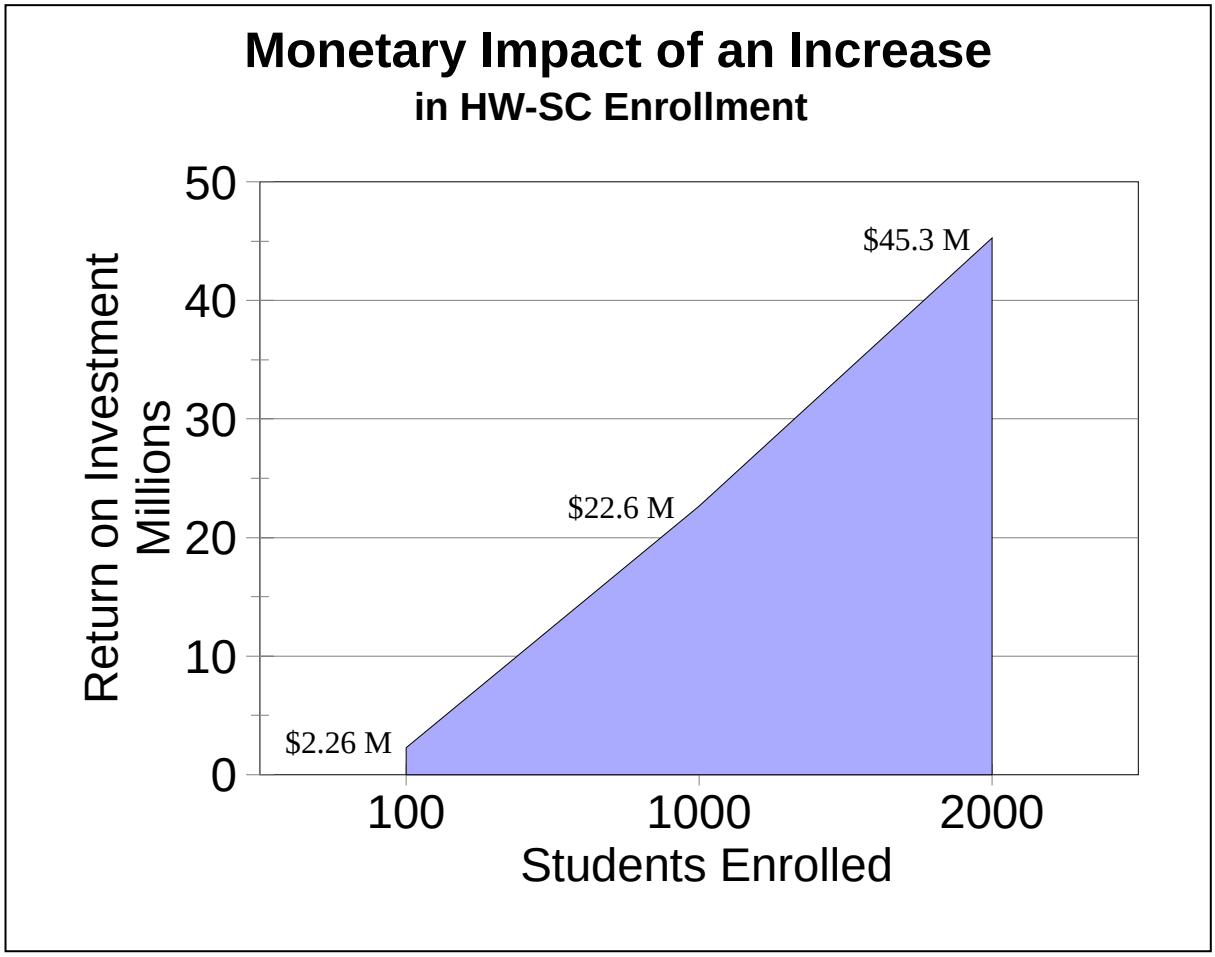


Table A-1: Public Costs and Benefits, per 100 Program Participants, to Age 30

	Estimated Program Participation					
	Control Group*	Work Scholarship Program Group*	Difference	Program Effect on Participation	Program Effect on Expenditures	Cost Savings/ Increased Revenue or (Increased Cost)***
Public Assistance	10.36	7.76	2.60	-25.0%	-28.8%	$640,146
Food Stamps	39.20	24.10	15.10	-38.5%	-41.4%	$284,153
Medicaid	40.00	35.90	4.10	-10.3%	-15.1%	$817,666
Incarceration Costs	5.80	3.40	2.40	-41.3%	-44.4%	$183,253
Unemployment	.67	1.10	(.43)	+64.1%	+38.6%	($22,214)
Federal Earned Income Credit**	N/A	N/A	N/A	N/A	+18.9%	($124,466)
State Earned Income Credit**	N/A	N/A	N/A	N/A	+6.6%	($10,358)
Income and Sales Tax Revenue	N/A	N/A	N/A	N/A	+11.2%	$111,904
Net Public Return						**$1,880,084**

Table A-2: Individual Costs and Benefits, per 100 Program Participants, to Age 30

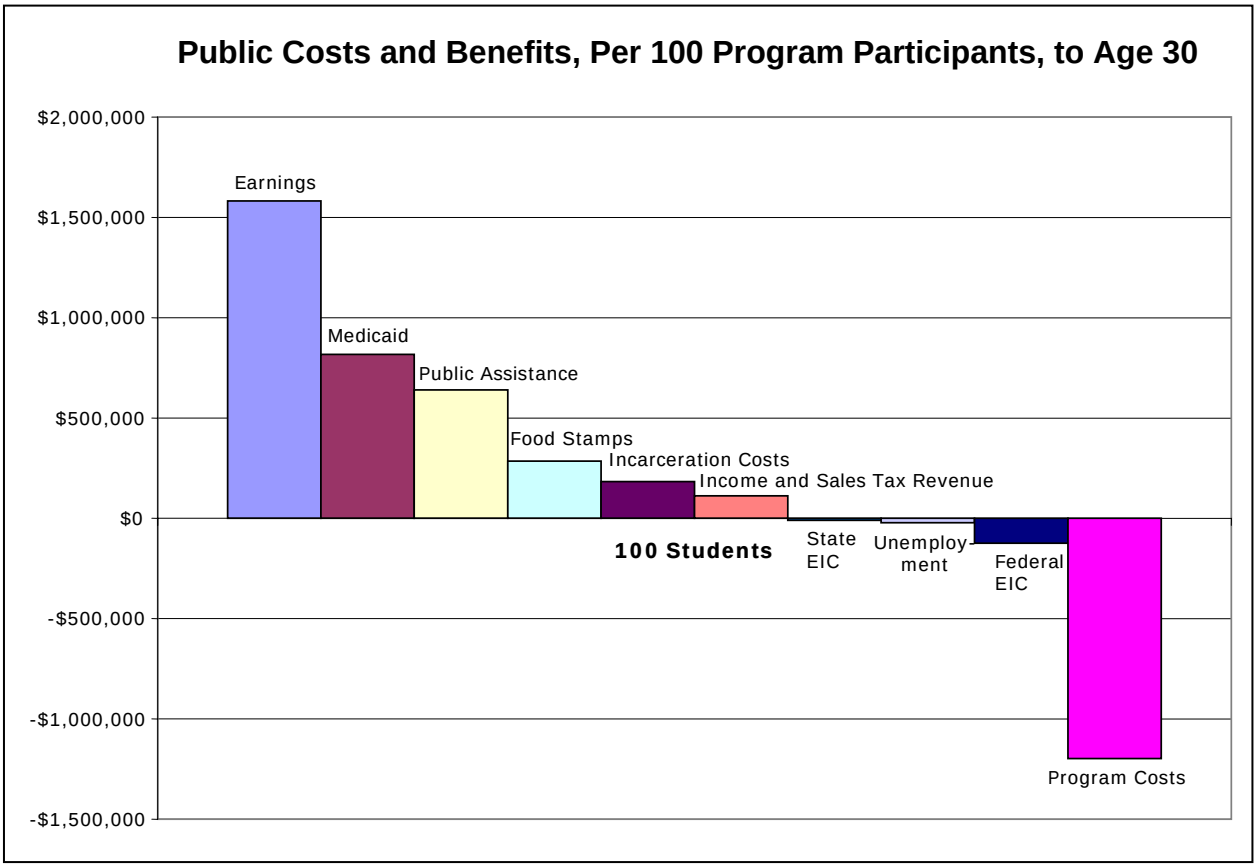
Earnings	$10,169,617	$11,863,013	$1,693,396	N/A	16.7%	$1,693,394
Income and Sales Tax	$966,745	$1,078,649	$111,904	N/A	11.6%	($111,904)
Net Increase In Earnings						**$1,581,492**
Total Return						**$3,461,576**

*Estimated average annual participation to age 30
**Estimates for EIC are based on earnings estimates
***To age 30

Table A-3: Total Program Return on Investment, per 100 Program Participants, to Age 30

Total Return	$3,461,576
Program Cost	($1,197,930)
Total Program Return on Investment	**$2,263,646**

Chart B. Public Costs and Benefits, per 100 Program Participants, to Age 30

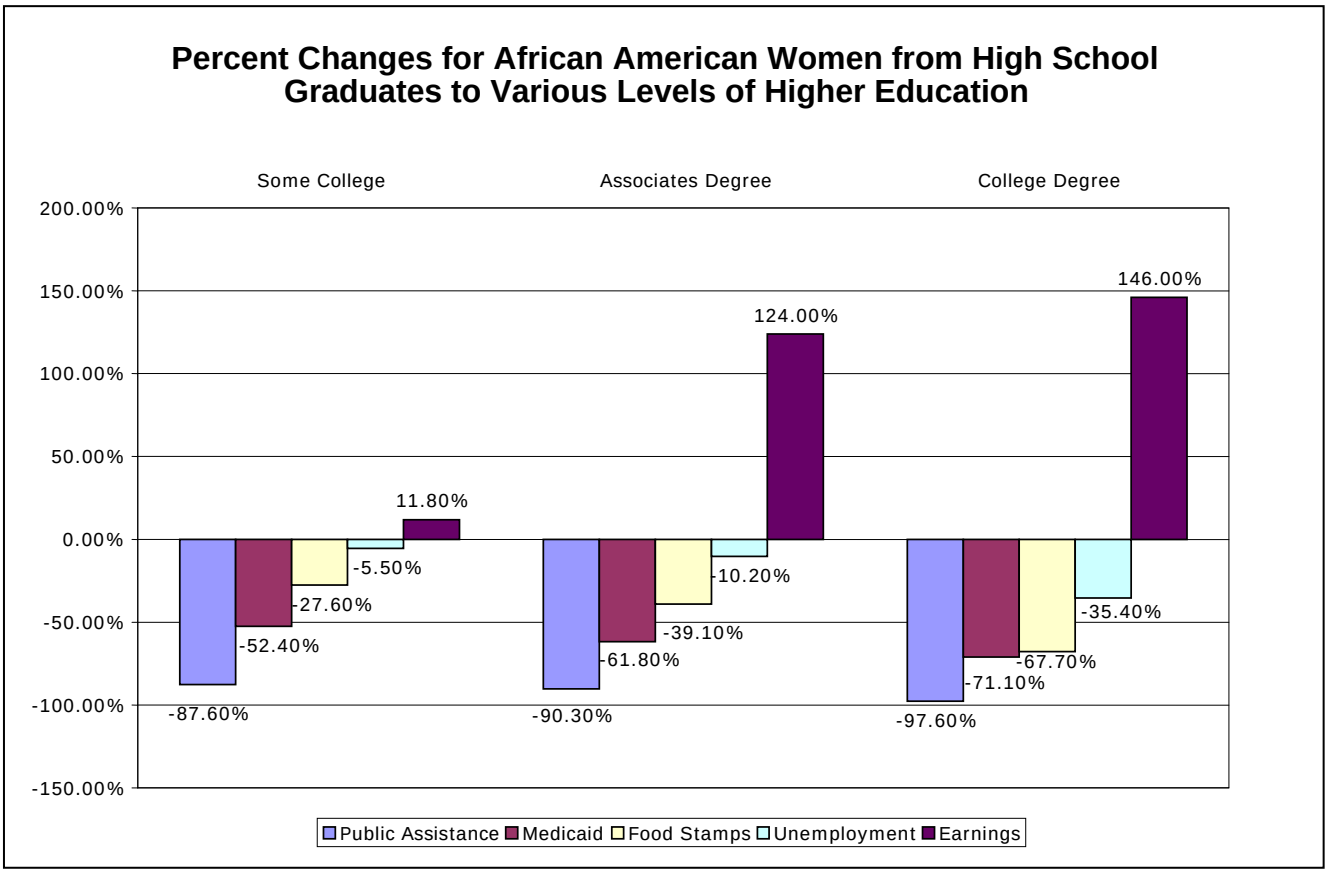


Including effect of further education

This analysis assumes that none of the students participating in the HW-SC proceed beyond a high school education. While this assumption was made in order to ensure conservative estimates, and because there is not sufficient information concerning the probability of higher education attainment in the HW-SC students, the assumption is not likely to be realistic.

This section demonstrates how higher education might change the outcome this analysis. Chart C demonstrates how higher education will result in greater earnings, and generally lower expected values for payments under government-financed programs. (Percentages for African American females are used for this illustration; the percentages will vary with the sex, race, or ethnicity. Figures are for 2005.) The values for a high school graduate are used as the base for comparison. (Changes in incarceration costs were not calculated, as the rate of incarceration for African American females was so low that costs essentially dropped to zero.)

Chart C. Percent Changes for African American Women, from High School Graduated to Various Levels of Higher Education



Background

The primary goal of the Hillside HW-SC is to improve retention and graduation rates for high-risk students enrolled in the Rochester City School District (RCSD). This is accomplished through the provision of social and academic support systems, including school-based youth advocates, job training and placement, and mentoring at job sites. Supporters of the program view it as a preventive initiative, representing an investment in the lives of individual young people, and hence an investment in the community[v].

An early 2004 evaluation of the HW-SC determined the program was successful in improving high school retention and graduation rates for program participants. Specifically, the evaluation found that the graduation rates were twice what students achieve without the program's intervention. In addition, the HW-SC was found to have the greatest impact on African American and female program participants, as well as students whose family income was above the poverty level.[vi]

In late 2006, the HW-SC contracted with the Finger Lakes Health Systems Agency (FLHSA) to build on the 2004 evaluation and determine the potential monetary return on investment through a cost-benefit analysis. FLHSA reviewed published literature on the cost of high school non-completion and the cost-benefit of additional years of secondary education. The graduation and attrition rates presented in the 2004 evaluation were examined. Differences in attrition and graduation rates between HW-SC program participants and the comparison sample were applied to data on earnings, reliance on public programs, such as TANF, food stamps and Medicaid; incarceration; unemployment; and changes in tax revenue.

Reviewing the Evidence

If an individual drops out of high school, there is a significant monetary cost to society.[vii] More specifically, dropping out of high school has a substantial negative impact on an individual's employment and earnings, which in turn leads to increased poverty levels, a greater reliance on public services, a greater likelihood of engaging in criminal activity and poorer health outcomes. (Thompson, 1998; Alliance for Excellent Education, 2006; Burt, 2002; Barrow and Rouse, 2006)

Data from the 2000 Census show that high school dropouts had only a 52% employment rate in 1999, compared with 71% for high school graduates. Of those who worked full-time, year round, high school dropouts earned only 65% of the median earnings. Lower unemployment and earnings has a considerable impact on public tax revenue. The Alliance for Excellent Education (2007) found that, if the students who dropped out of the class of 2006 had graduated, New York State's economy would have benefited from an additional $24 billion in income over their lifetimes.

Unemployment and lower earnings, resulting from high school non-completion, also has a substantial bearing on an individual's reliance on public programs. Levin (2007) reports that graduating from high school is associated with a lower probability of receiving TANF (-40%), housing assistance (-1%), and food stamps (-19%). These reductions have the potential to produce significant cost-savings at all levels of government.

Finally, improving high school graduation rates is likely to produce a reduction in the financial cost of crime, including expenses related to medical care to victims, loss of victims' income, rising police payrolls and court operating costs, and incarceration costs. In fact, if the male graduation rate in New York State was increased by only 5%, the State would experience an annual savings of $286 million in crime-related costs (Alliance for Excellent Education, 2006).

Methodology

This analysis is based on a standard cohort of 100 students who looked as close as possible in race/ethnicity and gender mixture to the actual cohort evaluated in the Center for Government Research evaluation of the HW-SC. The assumed year of graduation was 2005.

The HW-SC had the two benefits identified in the CGR study: higher graduation rates, and longer retention times in high school for those who eventually dropped out. Because the evaluation focused on students who were program participants in 9th grade, the analysis assumes students participated in the program in 9th grade.

It was also assumed that the standard cohort went no further than graduating from high school, and thus the estimates of costs and benefits are conservative. It is likely that in a real 100 student cohort some would go on to get either an associates or a bachelors degree. Any post-secondary education, and particularly any post-secondary degrees, substantially increase earned income and dramatically reduce participation in government programs. If the program can demonstrate that its graduates are more likely to participate in post-secondary education programs, the program benefits would increase substantially.

Because the CGR evaluation found disparate outcomes by race/ethnicity and gender, to the extent possible, race/ethnic- and gender-specific rates were used in the analysis.

While the benefits of education are life-long, this analysis placed an outside limit of age 30 on the time horizon for benefit calculation. The further students are from their high school years the more difficult it is to attribute increased earnings or reductions in program participation to HW-SC. The age cut off is arbitrary, but given that the overall benefit/cost ratio by that age is 2.89, the program obviously pays for itself in considerably less time.

Sources of data

The primary source for data on earnings was the 2000 Census Public Use Microdata (PUMS). Data for earnings by race, ethnic group, and sex, was limited to ages 18-29, to best reflect the HW-SC student population. The 1999 earnings were inflated to 2005 dollars using the Consumer Price Index. Earnings (and all other dollar amounts) were stated in constant 2005 dollars, using a 3% discount rate. Earnings were calculated for New York State, excluding the New York City area.

Data for the probability of participation in various government funded programs were calculated using data from the Current Population Survey. The March Annual Social and Economic Supplement, was used for most calculations. As with the earnings data, New York State rates were used, excluding New York City.

Data for federal income taxes and the federal earned income tax credit came from the Internal Revenue Service Analysis of 2004 Tax Returns and the accompanying tables.[viii] For New York State income tax and Earned Income Tax Credit, data from the New York State Department of Taxation and Finance analysis of 2003 tax returns were used.[ix]

The costs of incarcerations, came from the Bureau of Justice Statistics.[x] The costs for various other programs came from the New York State Office of Temporary and Disability Assistance.[xi]

Marginal Benefits

There are some program effects that were considered for this analysis that were either not included or were included for very small dollar amounts because of the limited impact they would have on overall program costs. The additional costs to the criminal justice system for incarceration only include medical and food costs. While additional years of education and high school graduation do reduce the probability that an individual will be incarcerated, the reduction in the number of individuals imprisoned because of participation in the HW-SC would be too small to have any impact on the highest costs of incarceration, personnel costs and fixed-asset costs. Therefore, the main focus of the analysis is on the direct costs that vary by the number of individuals served.

When considering the tax implications of increased earnings, property taxes were excluded from the analysis. While the program participants will have additional earnings and may be able to afford a more expensive apartment or purchase a more expensive house, chances are that they will be residing in an existing housing unit that is already generating property tax revenues. If Rochester had a very tight housing market with a very low vacancy rate, it is possible that increased earnings could generate a demand for additional housing units and therefore would generate additional property tax revenues.

Some Additional Expenses

Additional costs to the school district were not estimated for the additional students who remain in school. It is unlikely that there will be any additional marginal costs to the schools; because the additional student years will be spread across all high schools, it is unlikely that there will be a need to hire additional teachers. To the extent the program grows in size, and hence increases the number of students remaining in school, schools may have additional costs associated with extra teachers or more class room space.

Findings

Benefits to the Individual

Additional Income

As noted above, one of the primary benefits to both the individual and the community of increased high school graduation rates is increased income. It is estimated that a 100-person cohort going through the HW-SC program will earn approximately $11,863,012 by age 30, compared to $10,169,616 for the cohort representing the typical students in the RCSD, or an increase of $1,693,396. This represents a 16.7 percent increase in income to age 30.

This is highly conservative estimate of additional earnings. It was assumed that no one in either cohort went beyond a high school education. In reality, members of both groups are likely to seek additional education, obtaining associates or bachelors degrees. This potential effect was not estimated because the data on the HW-SC students' post-high school efforts are incomplete. It is possible that the HW-SC students may participate in higher education at greater rates than their peers. It is also possible that while the program is successful at increasing graduation rates, it does so only for those who are marginal students who would not go onto higher education. Until there is firm data on the post-secondary education of the HW-SC students, it is not possible to make reliable estimates. The effect that post-secondary education would have on the analysis is illustrated later in this report.

Public Benefits

As was previously noted, increased income can result in additional tax revenue and there is differential use of government-financed programs based upon education level. Differences in costs between the HW-SC cohort and the control group have been estimated for programs, for which research supports the expectation of a differential. While in a few cases the HW-SC cohort had slightly increased costs, overall the cohort had reduced government costs and produced lower costs even after taking into account the costs of the program itself. The estimated overall net return to government, (either through increased revenues or reduced program expenditures) for a cohort of 100 to age 30, is $1,880,084.

Additional Tax Revenue

One direct benefit to the community of the additional income is increased tax revenues. It is estimated that the HW-SC cohort will, based upon their increased income, make total federal tax payments of $330,856, state income tax payments of $105,678, and sales tax payments of $642,115. The comparison cohort will make payments of $297,385 (federal), $79,973 (state), and $589,387 (sales). Thus the HW-SC cohort pays an additional $111,904 in taxes, or 11.6% more in estimated taxes.

Unfortunately, because of the state and federal earned income credit, much of the added state and federal income tax revenue will go to pay for the increased costs of those programs. (See the discussion of the earned income credits later in this section of the report.) Nonetheless, it is estimated that local and state sales tax revenue will increase 8.9%.

Medicaid

The greatest saving in costs for HW-SC participants was in estimated Medicaid expenditures. Medicaid cost for the control group is estimated at $5,409,864 to age 30, while the HW-SC cohort has estimated costs of $4,592,198. The $817,666 savings represents a reduction of 15.1%.

In calculating these estimates, the likelihood of an education-based differential in females having children, thus making them more likely to participate in the Medicaid program, must be taken into account. Average per capita costs for males participating in Medicaid were actually higher than the costs for females, probably due to males having higher HIV/AIDS related costs and higher drug-addiction treatment costs. Nonetheless, males had lower average costs than females, due to significantly lower participation rates.

Public Assistance Programs Costs

The second largest estimated dollar savings to government-financed programs was in public assistance programs. For this analysis public assistance is defined to include TANF and safety-net programs. The estimated cost savings for public assistance programs is $640,146, or a 28.8%.

As with Medicaid costs, the education-based differential in women having children was included in the analysis, thus increasing costs to public assistance programs.

Food Stamps

In terms of percentage reduction in participation and costs, the estimated changes in the food stamp program were some of the largest for any of the programs looked at. There was an estimated 38.5% reduction in food stamp program participation, and a 41.4% reduction in costs to the program. The actual estimated dollar savings were $284,153, reflecting the relatively low costs of the program itself.

Incarceration Costs

As previously noted, there is a significant education-level differential in incarceration rates. Estimates of cost-savings, however, are relatively modest. It was estimated that the HW-SC cohort would have incarceration costs to age 30 of $229,213, while the control group would have costs of $412,466. While the percentage savings is fairly high (44.4%), the dollar savings is a fairly modest $183,253.

A Bureau of Justice Statistics report on state prison expenditures for 2001 reported that New York prisons had operating costs of $36,835 per inmate.[xii] The biggest part of the operating costs was for salaries, wages, and benefits ($28,481 per inmate). Other major components of operating costs were for medical care, food, and utilities. For our analysis we included only the operating costs for medical care and food. Our reasoning was that the impact of the program at the 100-student level was so small (a savings on average of 2.4 incarcerations per year) that it was not reasonable to believe that it would have any impact on reducing the operating costs for personnel or utilities. (Capital expenditures were ignored as these are fixed costs that do not vary with prison populations.)

As the program grows, the number of incarcerations saved will increase, so that at the 1000 student level we can estimate around 25 incarcerations saved per year. It is difficult to know if

this level would have an impact on personnel costs, given that these saved incarcerations will be spread across the entire state prison system. Certainly at some level of incarcerations saved there will be a reduction in the personnel operating costs.

Earned Income Tax Credits

Both the Federal government and the State of New York have an earned income tax credit. The credit in both cases is a "refundable" one, meaning that even if there is no tax due upon which to use the credit as an offset, the taxpayer will receive a refund for the amount of the credit. Both credits are structured so that at low levels of income the credit is low, with the credit increasing as earned income (essentially wages) increase, then dropping as the earned income rises to higher levels. The effect of all this is, because the higher average incomes of persons with high school diplomas falls within the range for the highest earned income credit, is that increasing graduation rates actually increases the costs for these programs.

It was estimated that the HW-SC cohort's Earned Federal Income Tax Credit to age 30 was $782,735, while for the control group it was $658,269, a difference of $124,466, or 18.9%. For the New York State Earned Income Credit, the difference was much smaller, an estimated $10,358, or 6.6%.

Unemployment Compensation

While participation in the workforce is greater for high school graduates, this does not translate into savings in unemployment compensation costs. This is because to receive benefits one must first have a job, and thus those who graduate are more likely to be covered. A small increase in unemployment compensation costs is estimated for the HW-SC cohort of around $22,214, or 38.6%.

Possible changes to findings

Incarceration costs if program expands

When the reduction in incarceration costs was calculated, it only included the marginal costs, as the program effect for 100 students was small, an average of 2.4 incarcerations saved per year. Thus the fixed costs of prisons are likely to remain unchanged, as are the personnel costs.

If the program were to grow to include 1000 students in the 9th grade, the saved incarcerations would grow to an estimated 24, which is still probably too small to change fixed costs or personnel costs. It is difficult to say how large the program would have to grow to have an impact on these costs. It is likely that for relatively small reductions (say 100-200) fixed costs and personnel costs are unlikely to change, as prisoners would probably just serve a longer portion of their sentence. Obviously at some level a significant reduction in prisoners would impact these greater costs, thus giving a greater cost savings. Moreover, if the impact of the program were to increase for individuals with higher probabilities of being incarcerated, there would be greater savings and more incarcerations saved per year.

Importance of "case mix" to findings

In interpreting these findings, it is important to keep in mind that estimates were based upon a certain "case mix" of students, as reflected in the CGR evaluation of the program. Thus, if one wants to know how the results "scale up" if the program increases its size, it is important that the scaling not change the mix of students. For example, the CGR evaluation found the greatest impact in African American females, and they constituted about 45% of the total. (See Table C for the assumed case mix.)

As higher education has differential effects on different racial and ethnic groups, as well as a differential effect on different sexes, changing the "case mix" will alter the economic impact. For example, income is higher for white males than for African American males, even when education is similar. Thus if there were more white males successfully completing the program than in our assumed mix, earnings, tax revenue, and the EIC would change.

Table C. Assumed case mix for analysis (N=100)	
White Females	4
White Males	3
African American Females	45
African American Males	30
Hispanic Females	9
Hispanic Males	6
Other Females	2
Other Males	1

Effect of changes in graduation rates

Changes in graduation rates will also alter these results. If rates were to lower across the board, the differences between the groups diminish. As is mentioned above, it is important to keep the case mix in mind when considering the effect of changes in graduation rates. Even if the overall graduation rate for the HW-SC were to remain the same, if the rates for different racial,/ethnic, or gender groups were to change, the results would also change. Because the largest impact was assumed for African American females, changes in their portion of program participants would have a large impact.

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U.S. Census Bureau, Current Population Surveys, 2004, 2005 & 2006 Annual Social and Economic Supplement (ASES)

U.S. Census Bureau, Census 2000, Public Use Microdata Sample (PUMS)

Appendix A: The Social Benefits of High School Completion

Research demonstrates that graduating from high school has a significant impact on an individual's life skills, earnings, employment and social capital. Such improvements have a social impact, improving the lives of the students affected, as well as an impact on public coffers. The positive effect of high school completion is presented in Table C.

Table C. The Social Benefits of High School Completion

Outcome	Individual Benefit	Community Impact
Improved Life Skills	*Improved cognitive skills, such as literacy and critical problem-solving; *Improved non-cognitive skills, such as punctuality, dependability and following directions. *Improved psychological well-being and socioemotional functioning[xiii]	*A skilled workforce improves the ability of the community to attract industry, thus furthering economic development.
Improved Employability	*Increased ability to match career choices with personal interests and goals; *Improved earnings potential; *Improved opportunity for social mobility.	*Increased tax revenue *Improved workforce
Increased Earnings	*Improved purchasing power and flexibility; *Potential for further upward mobility through the ability to pay for continuing education; *Reduction in income inequality; *Increased financial support from earnings-based benefits, such as Social Security.	*Increased tax revenue
Improved Social Capital[xiv]	*Increased opportunity for social networking;[xv] *Increased participation in community activities and collaboration;[xvi] *Improved voter participation;[xvii] *Increased charitable giving (both time and money).[1xviii]	*High social capital contributes to better performing governmental institutions, faster economic growth, and less crime and violence, all of which have a monetary impact on public funds.

Appendix B: Annotated Bibliography of Selected Texts.

Allen, Lili et al. ***From the Prison Track to the College Track: Pathways to Postsecondary Success for Out-of-School Youth*****. School to Prison Pipeline Conference, Northeastern University, May 16-17 2003.**

This paper explores four types of learning environments that appear to hold particular promise for vulnerable and disconnected youth: reinvented high schools, secondary/postsecondary blends, education/employment blends, and extended learning opportunities beyond the school day, year and building. Some worthy notes from the text: 1.) Failing a student, especially in ninth grade, is the single largest predictor of dropping out; 2.) 54% of all young adult dropouts 16-24 were employed in March 2001 and only 45% held full time jobs. 3.) High school dropouts are 3 ½ times more likely to be arrested than graduates. Much of this paper, however, falls outside the topic area as it deals with programs for youth who are no longer in school.

Alliance for Excellent Education. ***Issue Brief: Saving Futures, Saving Dollars: The Impact of Education on Crime Reduction and Earnings.*** **August, 2006.**

This paper examines the relationship between increased levels of education, and crime reduction. The authors examine the cost of crime on communities, states and the nation. While they contend that it is difficult to assess the actual cost-savings that education would bring to the justice system, they estimate that a 5% increase in male high school graduation rates would benefit the economy in New York State by $286,896,473 in annual crime-related savings and $170,426,743 in additional annual earnings.

Bridgeland, J. et al. ***The Silent Epidemic: Perspectives of High School Dropouts*****. The Bill and Melinda Gates Foundation. March 2006**

This paper provides a largely qualitative examination of the question, "Why do high school students drop out?" Researchers interviewed high school dropouts from around the country, ages 16-25. The major reasons that students cited for high school non-completion include: boredom with school work; becoming a parent; poor grades and test scores; high rates of absenteeism; and lack of a parental support system. Researchers then outlined suggestions for improvements in high school curriculums including an enhanced connection between work and school, and the implementation of easily accessible support systems. The purpose of this paper is to lend itself to the national dialog and facilitate policy development.

Burth, Martha R. ***Why Should We Invest in Adolescents?*** **Pan American Health Organization, Washington DC (1998).**

In this paper, the author outlines the needs of adolescents in Latin America, putting forth a framework for examining those needs using best practices and research conducted in the United States. Of particular interest is the chapter entitled: *What Payoffs Can We Expect from Investing in Activities that Promoted Adolescent Health?* Here, the author examines a variety of studies

where researchers have attempted to conceptualize the ideas of investment, payoff, costs and social and personal consequences, under the auspice that there is often pressure to justify investments in adolescents by quantifying and monetarizing the results. Of greatest interest is a study by Burt and Levy (1987), which quantifies the savings of delaying first births through the age of 20, and a study by Chapman and Lerman (1996) discussing the social costs of failing to complete high school.

Cohen, Mark A. ***The Monetary Value of Saving High-Risk Youth,*** **Journal of Quantitative Criminology, 1998, 14(1).**

In this paper, Cohen estimates the *present discounted value* of the *external marginal costs* imposed by a career criminal, heavy drug abuser and high school dropout. Through this analysis, he provides a framework for finding the value in a particular intervention without having to conduct a longitudinal analysis. He reports that the over an individual's lifetime, the value in saving a high-risk youth from a potential life of crime and drug abuse includes was $2.2-3.0 million, in 1997 dollars

Greenwood, Peter, ***Diverting Children from a Life of Crime: What Are the Costs and Benefits?*** **Wisconsin Family Impact Seminars. 1996.**

In this overview, Greenwood describes the benefits of investing in youth crime-prevention programs including home visits and day care, parent training, graduation incentives and delinquent supervision. The author conducted this research around the time that the three-strikes law was passed in California, which costs the state $5.5 Billion per year and reduced crime 21%. The research concluded that spending an additional $1 billion dollars on prevention activities, namely graduation incentives or parent training, could double the crime reduction predicted by the three-strikes legislation.

Harlow, Caroline Wolf, ***Education and Correctional Populations,*** **Bureau of Justice Statistics: Special Report. (April, 2003).**

This document provides a brief overview of the educational attainment of individuals incarcerated at in local, state and federal prisons. Key points for this research include: 'State prison inmates who grew up in homes without two parents, with an incarcerated parent, or on welfare or in subsidized housing were less likely than other inmates to have obtained a high school diploma/GED or attended a post secondary institution; and 'about 41% of inmates in the Nation's State and Federal prisons and local jails (in 1997) had not completed high school or its equivalent.'

Hershey, Alan M. et al. ***Expanding Options for Students: Report to Congress on the National Evaluation of School-to-Work Implementation: Executive Summary,*** **Mathmatica Policy Research Inc. February, 1999.**
This report to Congress from the Department of Education, evaluates the effectiveness of school-to-work programs created by the School-to-Work Opportunities Act, from 1994-1998.

Unfortunately, the authors concede that the evaluation can not provide evidence of whether School-to-Work programs cause changes in student outcomes. While much of this report is does not contribute to the expansion of knowledge in our subject area, it does stress that federal funding for school-to-work programs will soon disappear, and that it is up to state and local governments to beginning supporting this investment.

Levin, Henry et al. *The Costs and Benefits of an Excellent Education for All of America's Children*. Columbia University, 2007.

This paper examines the cost-effectiveness of 5 leading interventions that raise high school graduation rates. The authors maintain that educational inequalities persist because children from educationally and economically disadvantaged populations are less prepared to start school, and they are unlikely to catch up with out major educational interventions on their behalf. By analyzing the effects of interventions that improve high school completion on labor market income and tax revenue, health status, welfare expenditures, and crime behavior the authors find that the net economic benefit of high school graduation is $127,000.

Reimer, Mary and Jay Smink. *Information About the School Dropout Issue: Selected Facts and Statistics*. National Dropout Prevention Center. 2005.

This article is a compilation of statistics by the National Dropout Prevention Center. One interesting note: A study in Philadelphia found that a sixth-grade student having one of the following risk factors has a 10% chance of graduating from high school on time, and a 20% chance of graduating one year late: attendance below 80%, poor behavior, failing math grade, failing English grade. The articles also highlighted the importance of safe learning environments in keeping kids in school. Several personal income and employment statistics relevant to this project are highlighted, for example, 'high school graduates, on the average, earn $9245 more per year than high school drop outs.' There are additional relevant statistics in terms of Crime, Literacy and Health.

Shore, Rimea. *KID COUNT Indicator Brief: Reducing the High School Dropout Rate,* Annie E. Casey Foundation. July, 2005.

This article is an indicator brief outlining five broad strategies for reducing the dropout rate, including: 1. Increase the holding power of high schools; 2. Address the underlying causes of dropping out; 3. Address the needs of the groups at the highest risk of dropping out; 4. Strengthen school readiness and 5. Strengthen the skills and understanding of the adults who affect teens' motivation and ability to stay in school. While the paper provides a wide range of evidence-based solutions to reducing the dropout rate, it does not contribute to the discussion of program evaluation from an economic perspective.

Thompson, Mark A. *Assessing the Economic Costs of High School Non-completion*, Journal of Economics and Finance, 1998, 22(2-3):109-117.

In this paper, Thompson explored the relationship between educational attainment and various indicators of economic wellbeing, including per capita income, unemployment rates and poverty. For example, lower levels of education attainment results in higher levels of unemployment and poverty, and higher levels of unemployment leads to increased criminal activity. Comparison between states found: 1. For each one percent of the adult population without a high school degree there is a decrease of $117.9 in state per capita income; 2. states with lower per capita education expenditures levels incur the greatest loss in income from non-completion of high school: this implies that if additional monies are spent which successfully increase high school completion rates, there is a potential for significant returns in the form of increased incomes. The article concludes (using school-to-work initiatives as an example) that 'any efforts to increase high school completion rates, regardless of how small, are likely to result in sizable returns and enhance the ability of any given state or nation to be more effective players in the global economic arena.

[i] Center for Governmental Research, *The Hillside Work-Scholarship Connection: Charting a Course for the Future.* January, 2004.
[ii] This cohort includes students who enrolled in the HW-SC in the 9th grade. It excludes those students enrolling in either 7th or 8th grade.
[v] *Ibid*, Center for Governmental Research
[vi] Ibid.
[vii] To view the social impact of high school completion, please see Appendix A.
[viii] Available from http://www.irs.gov/taxstats/indtaxstats/.
[ix] Available from http://www.tax.state.ny.us/statistics/personal_income_tax_statistical_reports.htm
[x] Stephan, James J. *State Prison Expenditures, 2001*. Bureau of Justice Statistics, June 2004, NCJ 202949
[xi] New York State Office of Temporary and Disability Assistance, *Temporary and Disability Assistance Statistics*, January 2007.
[xii] Stephan, James J. *State Prison Expenditures, 2001*. Bureau of Justice Statistics, June 2004, NCJ 202949
[xiii] Anyon, Jean. *What "Counts" as Educational Policy? Notes Toward a New Paradigm*, Harvard Educational Review, 2005, 75(1): 65-88.
[xiv] Social Capital refers to social networks and the norms of reciprocity that arise from them (Rochester Area Community Foundation, 2007).
[xv] Rochester Area Community Foundation, *2006 Social Capital Survey*. March, 2007.
[xvi] Ibid.
[xvii] Ibid.
[xviii] Haveman & Wolfe, *Schooling and Economic Well-Being: The Role of Non-Market Effects*, The Journal of Human Resources. 1984, 19(3): 377-407.