



Building Utah's Future through Higher Education

The long-term impacts of attaining the 66by2020 goal—that 66% of Utah's population will earn a post-secondary degree or certificate by 2020—on Utah's tax base, economy and poverty

Introduction and 66by2020 Goal

As the state with the youngest population and with a quickly growing economy, Utah is full of promise. But at a time when post-secondary education has never been more important, Utah is full of challenges as well. In fact, in just fifty years, Utah's ranking among states has gone from third in the nation to twenty-first for post-secondary degrees in this population. Now Utah faces a stark choice: Does it want to be in the middle of the pack among other states in innovation and economic growth? Or does Utah want to realize the dream of a better future and be a prosperous leader in the economy of the tomorrow?

In the face of this crucial crossroads, the State Board of Regents and the Utah System of Higher Education (USHE) champions the aggressive goal set by the Governor and supported by the state legislature that by the year 2020, 66% of Utah's adult population will have earned a post-secondary degree or certificate. Also known as the 66by2020 goal, it is focused on Utahns ages 25-35 in 2020.

Report Overview

When calculating the estimated direct and indirect returns on investment (ROI) of the 66by2020 goal, USHE has determined the following:

- The overall impact of 66by2020 is **\$14.4 billion added to the Utah economy over 30 years in wages**, with an annual rate of \$400 million.
- Over 30 years, the 66by2020 goal will result in **\$1.4 billion in additional tax revenue** for the state of Utah.
- An estimated **42,057 Utahns will escape the cycle of intergenerational poverty**.
- The 66by2020 goal will **reduce annual expenditures in the SNAP/Food Stamp program by \$18 million**.
- There is a strong correlation between lack of higher education and rate of incarceration. With more Utahns earning a higher education, the incarceration rate of Utahns is expected to decrease. **For every one person kept out of prison, Utah saves \$27,000 per year**.
- There will be an increase in parent-child interactions, resulting in **an improvement in K-12 child success rates**.

This document estimates some of the potential economic impacts that attaining this goal will have on Utah's tax base, economy and poverty levels, both annually and in 30 years. The analysis in this document assumes that the economy will operate at full employment levels and that future economic expansion will be directly correlated with increasing demand for skilled workers who have completed post-secondary educational programs. In order for Utah to meet the goal of having 66% of the population with a post-secondary certificate or degree, USHE has estimated that it will need to award a total of 336,950 certificates and degrees between 2010 and 2020, a full 36,950 more than the annual number of awards expected based on 2010 completion levels.

Benefits of a Higher Education

Higher education has many benefits, including increased wages and a reduction in the likelihood of living in poverty or being unemployed. This is supported by data from the U.S. Census Bureau's 2012 American Community Survey (ACS). The ACS data indicates that Utahns ages 25-64 with a bachelor's degree have an unemployment rate 4 percentage points lower than those with only a high school diploma. Bachelor degree holders are also much less likely to be living in poverty, with a poverty rate 6 percentage points lower than those with only a high school diploma (figure 1).

We have a young, healthy workforce that is well-educated. So when the big companies like Boeing or eBay come around looking for a workforce, we have a good story to tell them.

—*Cornerstones of Success*, Governor's Office of Economic Development

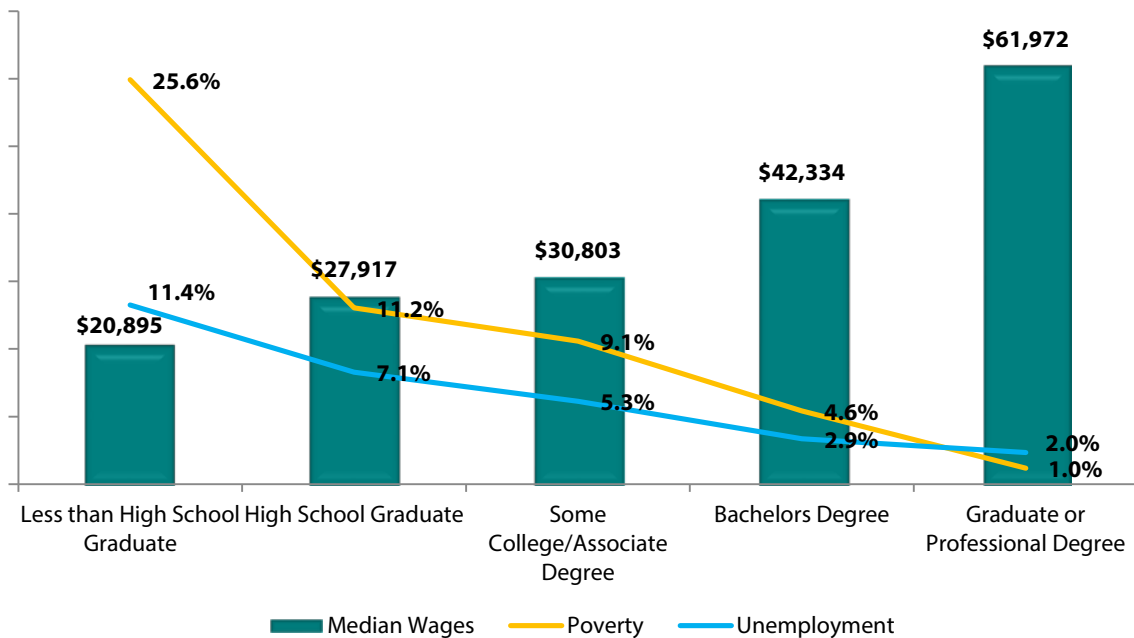


Figure 1: Poverty Rate, Unemployment Levels and Median Wages by Degree Attainment

Source: American Communities Survey, 2012

Returns on Investment

The investment in higher education has both direct and indirect returns for the state of Utah. The direct return is in additional state tax revenues. Indirect returns are in the form of reducing the need for public assistance, breaking the intergenerational poverty cycle, lowering crime and incarceration rates, and increasing volunteerism and attention to children.

Direct Return: Wage Growth and State Tax Contribution Growth

Based on 2010 levels, USHE will have awarded 300,000 degrees between 2010 and 2020. In order for the 66by2020 goal to be reached, USHE will need to award an additional 36,950 degrees and certificates between 2010 and 2020, bringing the total to 336,950 degrees and certificates. It is estimated that **these 36,950 awards will add \$14.4 billion to Utah's economy in increased wages and \$1.4 billion in state tax revenue over the 30-year working lifetime of these graduates** (table 1).

	Distribution of New Degrees	New Degrees	Work Force Participation Rates*	New Degrees in Workforce	Amount Earned over High School Level Median Earnings+	Total Added Annual Income to Utah's Economy	Estimated Additional Tax Contribution
Certificate	8%	4,479	65.1%	2,916	\$2,886	\$8,415,576	\$829,776
Associate	14%	7,838	72.2%	5,659	\$2,886	\$16,331,874	\$1,610,323
Bachelor's	31%	17,355	75.4%	13,086	\$14,417	\$188,660,862	\$18,601,961
Graduate or Professional	13%	7,278	75.4%	5,488	\$34,055	\$186,893,840	\$18,427,733
Annual Impact - Post Graduation	66%	36,950		27,149		\$400,302,152	\$39,469,792
Assumed 30 years of Employment						\$12,009,064,560	\$1,184,093,766
Economic Multiplier (1.2) Additional++						\$2,401,812,912	\$236,818,753
Value Added to Utah's Economy and Tax Base (30-Year Estimate)						\$14,410,877,472	\$1,420,912,519

* ACS One-year Estimates, 2012

+ US Census CPS National Data - 2013 Ages 25 and Over

++ The economic multiplier is the estimated impact of higher wages on an economy (Cooper, D., Hall, D., 2013)

Table 1 - Costs & ROI for Additional Degrees Awarded Each Year over Base of (30,000) for the 66by2020 goal

To compute wage growth at an individual level: the amount of increased annual earnings in Utah of the 36,950 degrees and certificates to reach the 66by2020 goal have been apportioned across the four general types of postsecondary educational attainment over high school level median earnings. The increased earnings of a person with an associate degree or certificate is \$2,886 over high school level median earnings. The increased earnings of a person with a bachelor's degree is \$14,417 over high school level median earnings. This assumes US Census workforce participation rates by educational attainment to factor individuals who earn a degree but do not enter the workforce.

To compute the growth in state tax contributions at an individual level: the amount of state tax dollars used to support a two-year degree is approximately \$3,300, based on appropriated tax revenue per full-time equivalent (FTE) student. This is based solely on instructional expenditures. State investment in a bachelor's degree is approximately \$10,200. A person with a two-year degree will add approximately

\$285 in additional state tax revenue each year (incremental state tax revenue over someone with a high school diploma), or an additional \$8,500 in state tax revenue over the course of a 30-year career. This represents a net gain of \$5,200 on the \$3,330 investment. The amount of additional annual state tax revenue increases to \$1,400 for someone with a bachelor’s degree, an additional \$42,650 over a 30-year career.

The incremental costs associated with these students were based on a USHE financial forecast using an estimated \$6,700 investment per FTE student per year. Based on degree type and the number of full-time enrollments needed for completion, the total cost to the state of Utah for these additional degrees and certificates is estimated to be \$722 million. Based on the estimated value added to Utah’s tax base, Utah would receive a **\$1.4 billion gross return on its investment of \$722 million** for student who complete.

This data illustrates the positive tax revenue returns associated with higher educational attainment levels. While several factors that would affect actual numbers were taken into consideration, such as work force participation rates and tax contribution rates, this analysis did not consider the time-value of money nor did it adjust earnings for the number of years employed. This analysis is focused on the students who complete their degree. Those who do not complete still have a return on investment, but the return is different that the one outlined above. For ROIs based on the total anticipated degrees and certificates awarded—336,950—see Appendix I.

Indirect Return: Reducing the Need for Public Assistance

The successful completion of the 66by2020 goal will result in increased wages associated with higher educational attainment levels. As a result, **it will keep an estimated 27,543 people in Utah from living in poverty** (table 2).

336,950 Target Population	Poverty Rate	Estimates Below Poverty
If High School Graduate or Less	15.2%	51,298
<i>If Some College or Higher</i>	<i>7.0%</i>	<i>23,574</i>
Number above Poverty due to 66by2020 Attainment		27,543

Table 2 - Estimated Change in Poverty Status

Using the SNAP/Food Stamp program as an example of cost savings in public assistance programs, based on current allocations per person, the change in the number of people living below the poverty level would result in **a reduction of expenditures of \$18 million annually in the SNAP/Food Stamp program** (table 3).

Estimated # out of Poverty due to 66by2020 Goal (from Table 2)	27,543
% of Individuals in Poverty Participating in SNAP/Food Stamp Program*	72%
Estimated # of Individuals Participating in SNAP/Food Stamp Program (based on above)	19,831
Average # of Months an Individual Participated in SNAP/Food Stamp Program (Nov '12 - Oct '13)	7.811
Average Monthly Allotment per Individual:	\$118.55
Estimated Annual Cost per Individual:	\$926.00

Estimated Annual Savings: \$18,363,469

*According to Census Poverty Counts and 2013 count of Individuals on Food Stamps

Table 3 – Estimated Annual Savings in SNAP/Food Stamp Program

Indirect Return: Breaking the Cycle of Intergenerational Poverty

Educational attainment is of particular concern when considering intergenerational poverty (IGP). In a recent study conducted by the Utah Department of Workforce Services (DWS), 74% of those identified as IGP adults had earned a high school diploma or less, while only 11.3% had a post-secondary certificate or higher (2013). In this study, 26,875 adults were identified as IGP whose highest educational attainment was a high school diploma or less. Those adults had 42,057 dependent children. If these 42,057 children remain in poverty into adulthood, it would result in an increase of 15,182 (56%) IGP adults (figure 2).

Intergenerational poverty mainly stems from education and economics. In terms of education, being well-educated lowers the chances of being in poverty... The parent, having been the victim of circumstances, was unable to attain a quality education, and thus was unable to find a well-paying job and wound up in poverty. The child, still living in that same area, is also suffering from not having a quality education and the results are the same: more poverty.

— Devon, DB. 2011

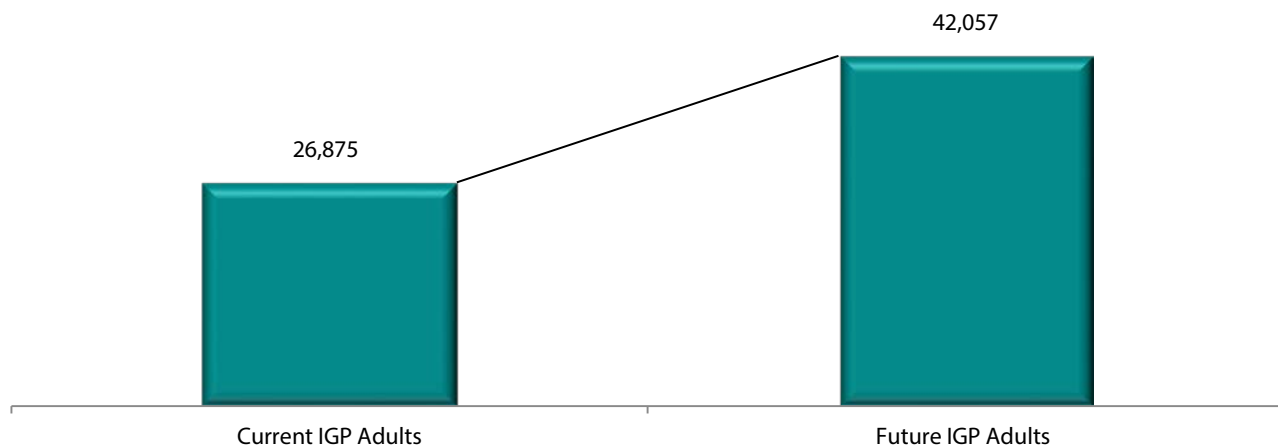


Figure 2 – Growth in IGP Population Based on Number of Children of Current IGP Adults

These findings may be reassuring to parents at a time when many are unemployed or worried about future job prospects. They clearly show that in terms of the effect on children's achievement, it's more important for parents to get a good education than to get a high-paying job. Of course, the more education you have, the more likely it is that you'll find a good job, so an increase in education often leads to an increase in income.

—Swanbrow, D. 2009

A higher wage associated with higher educational attainment levels is key to breaking the cycle of intergenerational poverty. Devon and Swanbrow suggest that the long term solution to poverty is increasing the educational attainment level of parents living in poverty, which will subsequently raise their income and expand opportunities for their children who will, in turn, have increased rates of educational attainment. Improving access and financial support to low-income families, for both adults and children, will be critical components in raising educational levels and wages of the population of those living in intergenerational poverty.

Indirect Return: Lowering Crime and Incarceration Rates

Higher education by itself does not guarantee that a person will not commit a crime that results in incarceration, but the correlation between educational attainment and crime rates cannot be ignored. C.W. Harlow states that “while almost half of the general population has some postsecondary education, only 13% of the adult prison population has any postsecondary education” (2003). The publication *Education and Public Safety* (Page, A., Petteruti, A., Walsh N., Zeidenberg, J., 2007) provides the data that plots the relationship between violent crime rates and college enrollment rates (figure 3).

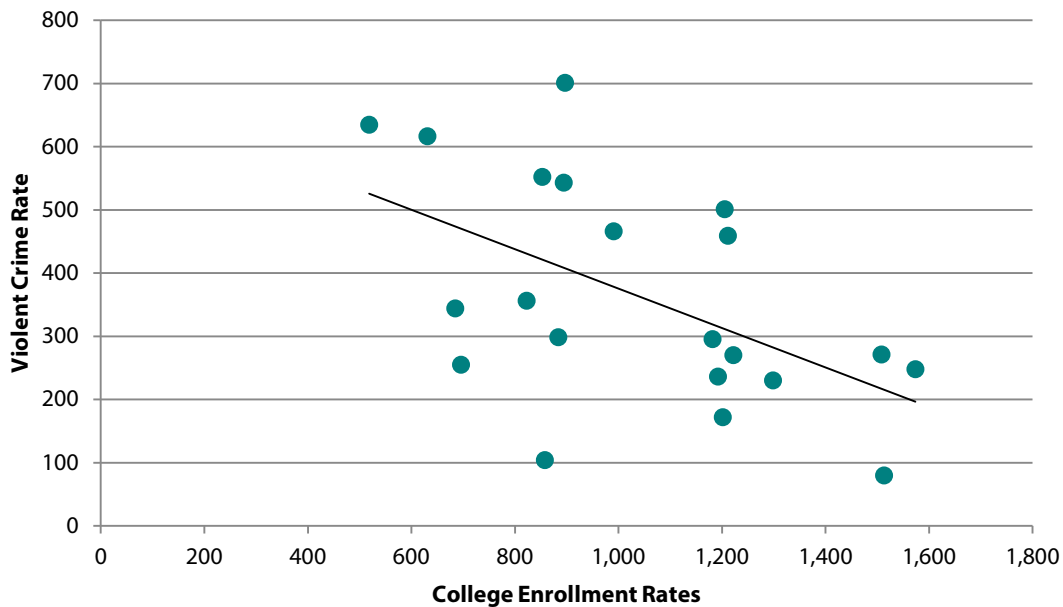


Figure 3 - Top 10 & Bottom 10 State Violent Crime Rates by College Enrollment Rates (per 100,000)

The Utah Department of Corrections estimates that it **costs the state of Utah an average of \$27,117 to house one inmate for one year**. A reduction of even 100 violent crime offenders as a result of increased participation in post-secondary education would translate into \$2.7 million annual savings to the Utah correctional system. This does not even attempt to measure the financial and personal impacts that are felt by the communities and the victims of crime.

States that made bigger investments in higher education saw better public safety outcomes. Of the 10 states that saw the biggest increases in higher education expenditures, eight saw violent crime rates decline, and five saw violent crime decline more than the national average. Of the 10 states that saw the smallest change in higher education expenditures, the violent crime rate rose in five states.

—Page, et al. 2007

Indirect Return: Increasing Volunteerism and Attention to Children

The College Board's publication *Education Pays 2013* provides national estimates on a wide variety of benefits that a state or community receives based on increased educational attainment levels of their population. Two such benefits are the levels of volunteerism in the community and the amount of time that a mother will spend per day interacting with her children under the age of 18.

Volunteerism

Based on data derived from the Bureau of Labor Statistics, the College Board found that, on average, a person will provide anywhere from 50-52 hours of unpaid service per year. The likelihood to volunteer increases as educational attainment increases, where 42% of those with a bachelor's degree or higher are likely to volunteer compared to only 17% of those with a high school diploma (figure 4). While it is difficult to measure the exact dollar value of volunteer hours, they provide many services that would otherwise require additional funding and support.

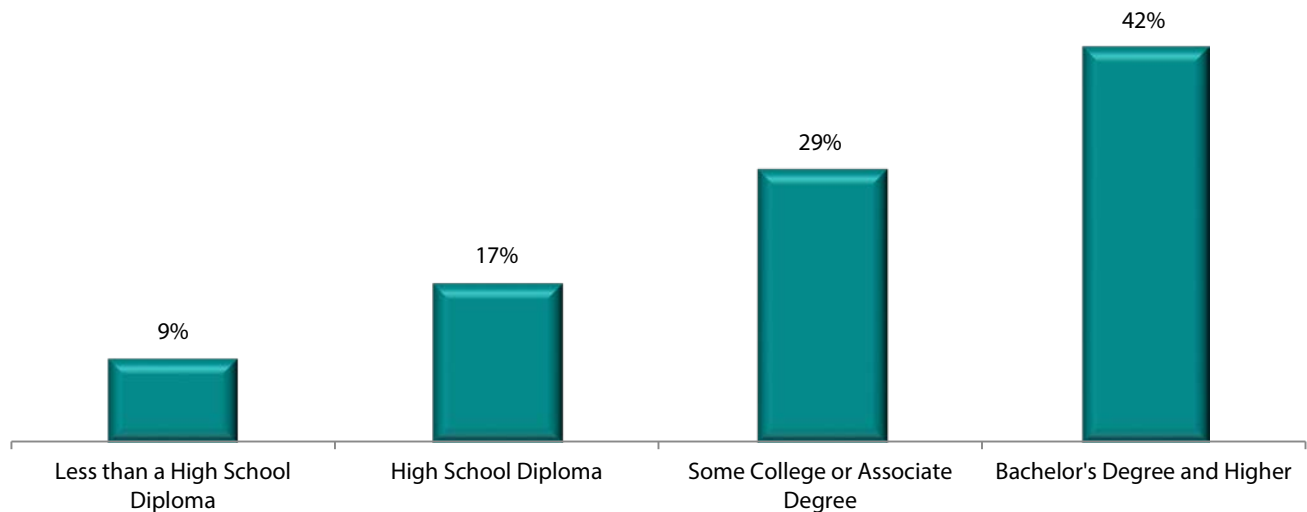


Figure 4 - Volunteer Rates by Educational Attainment, Age 25 & Over

Source: Bureau of Labor Statistics, 2013c, Tables 1 and 2.

Attention to Children

Assuming that there is a positive correlation in successful child development and the time a mother spends with her child, the educational attainment of the mother plays a significant role in the success of children in the K-12 years. Data from the American Time Use Survey shows a positive relationship between the educational attainment level of the mother and time spent with children under the age of 18 (figure 5).

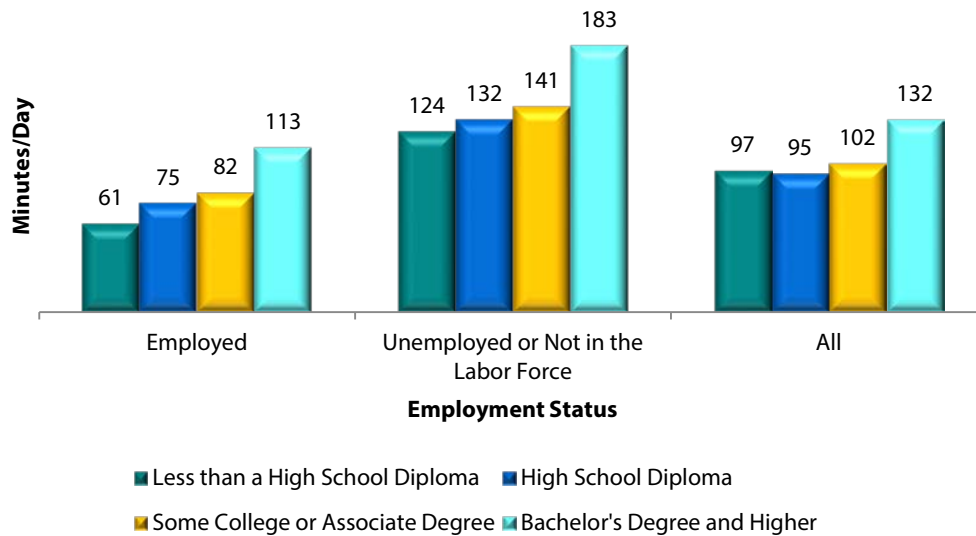


Figure 5 - Amount of Time (Minutes/Day) Mothers Spend with Children under the Age of 18 by Employment Status and Education Level, 2003-2012

Conclusion

Utah’s 66by2020 goal is centered on four specific areas: Jobs, Education, Energy and Self-determination (Sullivan, O’Malley, 2013). Meeting this goal of 336,950 total degrees and certificates awarded by 2020 will play a crucial role in a successful Utah economy. The national report *A Well-Educated Workforce Is Key to State Prosperity* (Berger N., Fisher, P., 2013) listed the following impacts of education on a state:

- Overwhelmingly, high-wage states are states with a well-educated workforce. There is a clear and strong correlation between the educational attainment of a state’s workforce and median wages in the state.
- States can build a strong foundation for economic success and shared prosperity by investing in education. Providing expanded access to high quality education will not only expand economic opportunity for residents, but also will likely do more to strengthen the overall state economy than anything else a state government can do.
- States can increase the strength of their economies and their ability to grow and attract high-wage employers by investing in education and increasing the number of well-educated workers.
- Investing in education is also good for state budgets in the long run, since workers with higher incomes contribute more through taxes over the course of their lifetimes

Investment in education to increase the attainment levels in Utah will return significant benefits to the state, and is critical to growing Utah's economy in areas that offer more opportunities for high wages. Educational attainment is also the key to many other societal benefits, of which only a few are highlighted in this report.

Higher education in Utah will need the continued support of the Governor, the state legislature and the public to meet the 66by2020 goal. The benefits for the state are immense, especially when contrasted with what its future would look like without this goal: an economy missing \$14.4 billion in wages and \$1.4 billion in state tax revenue; a continued increase in those relying on public assistance to make ends meet; a growing amount of those living in intergenerational poverty; an increased—and increasingly expensive—prison population; and stagnation in K-12 success rates. Utahns should dream of a brighter future for themselves and for their children, and support this vital goal.

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Appendix I

Direct Return: Total Degrees by 2020

A total of 336,950 degrees need to be awarded by 2020 to meet the 66by2020 goal. The overall impact of this goal is an estimated \$3.6 billion in annual wages added to Utah’s economy by the year 2020. Using a 9.86% state tax rate estimated by the Utah Taxpayers Association, accomplishing the goal will add an estimated \$359 million to Utah’s tax revenue each year above what would have been expected if those same people had only received a high school diploma (table 4). **The lifetime benefits of the \$131 billion in additional wages** (including an economic multiplier for the impact of the increased wages) **are an estimated addition of \$12.9 billion to Utah’s tax revenues** (table 4).

	Distribution of New Degrees	New Degrees	Work Force Participation Rates*	New Degrees in Workforce	Amount Earned over High School Level Median Earnings+	Total Added Annual Income to Utah's Economy	Estimated Additional Tax Contribution
Certificate	8%	40,842	65.1%	26,589	\$2,886	\$76,735,854	\$7,566,155
Associate	14%	71,474	72.2%	51,605	\$2,886	\$148,932,030	\$14,684,698
Bachelors	31%	158,264	75.4%	119,332	\$14,417	\$1,720,409,444	\$169,632,371
Graduate or Professional	13%	66,369	75.4%	50,043	\$34,055	\$1,704,214,365	\$168,035,536
Annual Impact - Post Graduation	66%	336,950		247,569		\$3,650,291,693	\$359,918,761
Assumed 30 years of Employment						\$109,508,750,790	\$10,797,562,828
Economic Multiplier (1.2) Additional ++						\$21,901,750,158	\$2,159,512,566
Value Added to Utah’s Economy and Tax Base (30-Year Estimate)						\$131,410,500,948	\$12,957,075,393

* ACS One-year Estimates, 2012

+ US Census CPS National Data - 2013 Ages 25 and Over

++ The economic multiplier is the estimated impact of higher wages on an economy (Cooper, D., Hall, D., 2013)

Table 4 –Costs & ROI for Total Degrees Awarded Each Year for the 66by2020 goal

USHE institutions received approximately \$500 million in appropriated tax revenue in the 2004-2005 fiscal year, and there is approximately \$596 million tax funds appropriated for the 2013-2014 fiscal year. Using a simple regression calculation to project tax appropriations through the 2019-2020 fiscal year, it is estimated that a total of \$5.876 billion in Utah state tax revenue will be dedicated to USHE schools for educational expenses during the 10 years that 66by2020 is pursued (2010-2011 to 2019-2020). The estimated lifetime return to Utah’s tax revenues for all 336,950 graduates is \$12.9 billion, a net return on investment of approximately \$7 billion.