



APPLIED ECONOMICS

***ANNUAL ECONOMIC IMPACTS OF THE
JOBPATH PROGRAM ON PIMA COUNTY***

PREPARED BY:

**APPLIED ECONOMICS LLC
11209 N. TATUM BOULEVARD, SUITE 225
PHOENIX, AZ 85028**

UPDATED MARCH 2020

TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 IMPACT SUMMARY	3
3.0 ECONOMIC IMPACT RESULTS	8
4.0 REVENUE IMPACT RESULTS.....	11
5.0 REDUCTION IN PUBLIC ASSISTANCE COSTS	12
6.0 RETURN ON INVESTMENT	13
APPENDIX A – METHODOLOGY AND DATA SOURCES	16
APPENDIX B – HISTORICAL ECONOMIC IMPACTS.....	18

1.0 INTRODUCTION

Applied Economics has been contracted by JobPath to prepare an independent analysis of the economic impacts of JobPath in Pima County and the return on investment it creates for the region. This analysis was initially prepared in 2008 using data on graduates from the previous two years, and has been updated annually since that time. This analysis incorporates the newest data on graduates from 2018-19 along with the past four years of historical information. Additional results going back to 2009-10 are included in the appendix. *There have been some methodology changes related to return on investment in this year's report, thus some of the results are not directly comparable with previous reports.*

JobPath provides annual data by graduate on pre-training wages, post-training wages and employer name for individuals placed in jobs, participation in public assistance programs and amount spent on each graduate. This annual data forms the basis for the economic impact analysis. A graduate is defined as an individual who completes their degree or certificate program. It includes individuals who are employed upon graduation, as and those who are not immediately employed or have not reported back information on their employer.

JobPath is a non-profit workforce development organization that sponsors low-income, unemployed and underemployed adults from Tucson and Pima County in long-term education and job training opportunities. JobPath was created in 1998 by Pima County Interfaith Council and community business leaders to meet an urgent need for job training programs in career areas to address a demand for skilled workers in the community. Sponsorship includes financial assistance, wrap-around case management, mentoring, peer support and assistance connecting to employers for JobPath participants in associate's degree or certification programs primarily at Pima Community College. Training programs include a variety of allied health care occupations, aviation technology, truck driving, trades and other fields. JobPath's mission is to improve the economic status of underserved adults so that they can lead healthier, more prosperous lives.

The purpose of this analysis is to calculate the overall impacts of JobPath on the economy of Pima County in terms of the direct and indirect increase in payroll, output and supported jobs, as well as an estimate of annual sales and income tax revenues created by these graduates and reductions in public assistance costs. The economic impacts are calculated using economic multipliers that are specific to Pima County. The state and local tax revenue impacts are based on post-training wages, and the reductions in public assistance costs are estimated based on the number of individuals receiving assistance prior to graduation and the average annual amount of assistance per person for various assistance programs in Pima County. The analysis also compares the aggregate increase in wages for graduates placed in jobs plus the reductions in public assistance costs to the annual amount of local funding received by JobPath to estimate a return on investment. *Additional information on methodology can be found in the appendix.*

JobPath has produced economic impacts on Pima County ranging from \$12.1 million to \$19.9 million per year over the past five years. The total economic impact for 2018-19 is estimated at \$17.6 million. These annual impacts for 2018-19 are driven by an increase in annual direct

wages of \$3.4 million for graduates placed in jobs. Over the five-year period since 2014-15, 378 individuals obtained jobs immediately upon graduation, including 80 individuals in 2018-19.

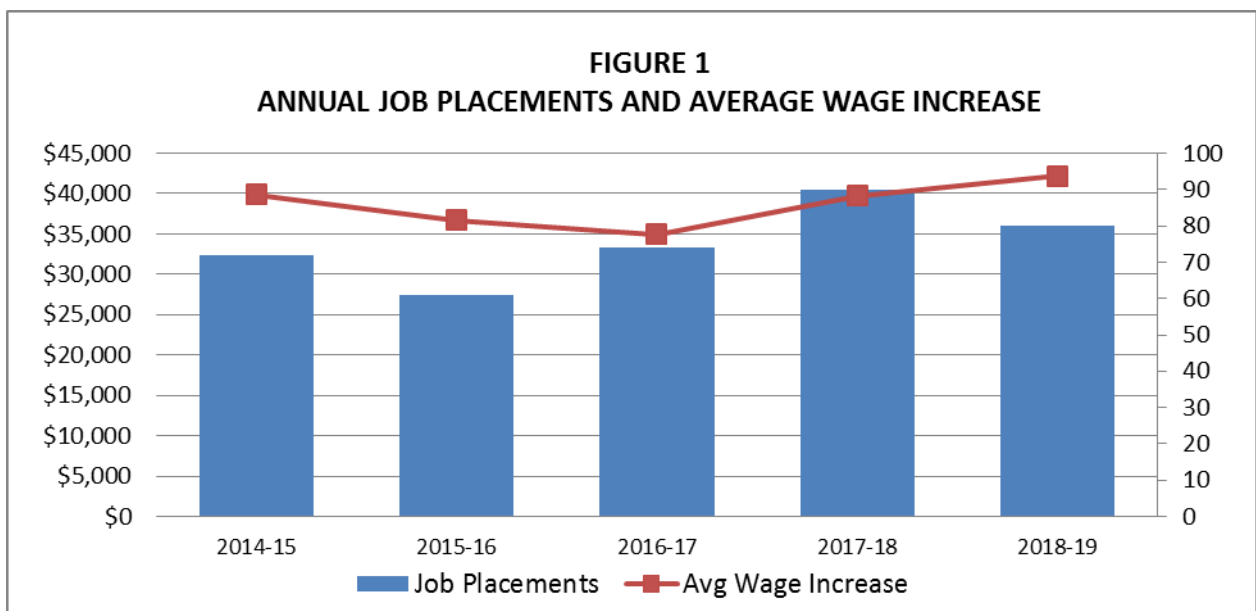
Applied Economics LLC is an economic consulting firm, based in Phoenix, Arizona, specializing in economic development, economic and fiscal impact assessment, socioeconomic modeling and urban planning. Applied Economics conducts economic and fiscal impact studies and develops models to measure the effects of a wide variety of activities. These activities include workforce development programs, land use and policy changes, business-driven economic impacts, and incentive agreements. Applied Economics is frequently called upon by local governments to provide a third party evaluation of economic and fiscal impacts related to economic development activities. The principals at Applied Economics have worked together for more than twenty five years, and are very experienced in working with local and regional economic and planning issues.

The information and observations contained in this report are based on our present knowledge of the components of development, and of the current physical, socioeconomic and fiscal conditions of the affected areas. Estimates made in this analysis are based on hypothetical assumptions, current tax policies, and the current economic structure of the region. However, even if the assumptions outlined in this report were to occur, there will usually be differences between the estimates and the actual results because events and circumstances frequently do not occur as expected. This analysis is based on the best available information and is intended to aid JobPath in quantifying the value of its program relative to the cost of training. In no way will Applied Economics be held responsible or have any liability or be subject to damages as a result of this analysis. This report may be used only for the purposes that it was intended.

2.0 IMPACT SUMMARY

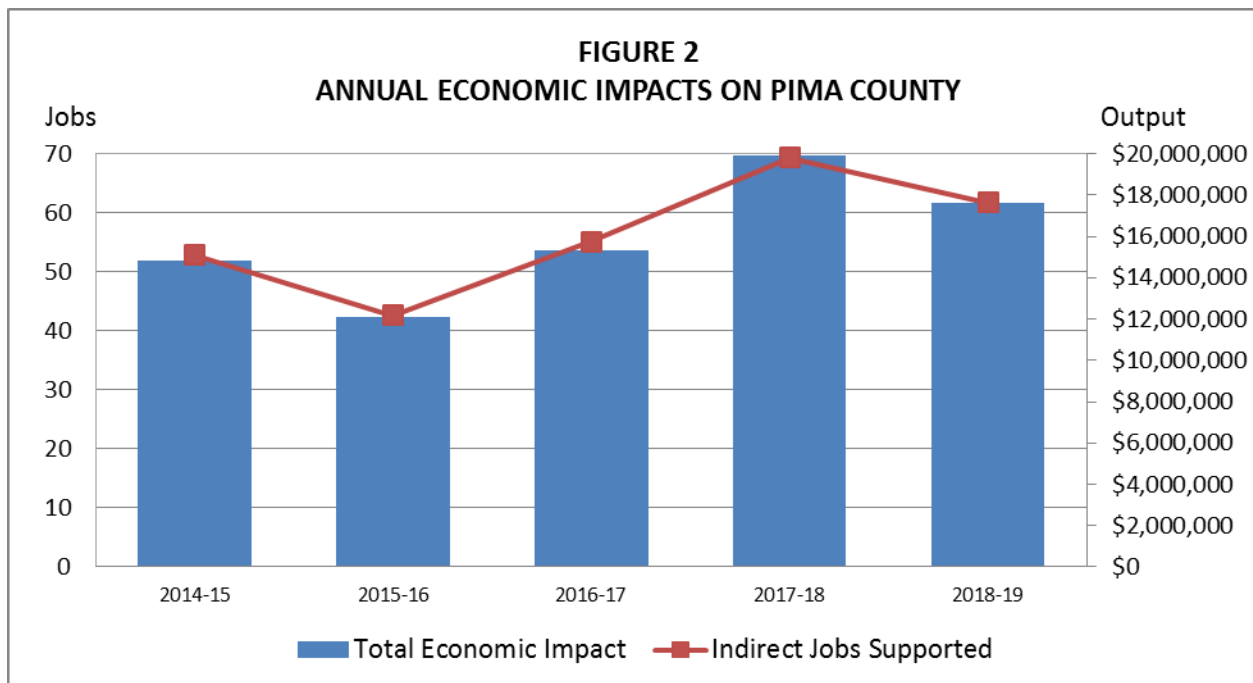
While the JobPath post-training wages and benefits are transformational to the individuals and their families, this report focuses on the significant economic benefits to the City of Tucson and Pima County. These positive impacts include the following:

- Over the past five years, graduates of JobPath experienced average wage increases of \$38,700 per person compared to pre-training wages. The one-time cost per graduate to achieve this result is \$8,750. This includes individuals that are placed in jobs as well as those who have graduated but are not yet employed. In 2018-2019, the average increase in wages of \$42,200 was significantly above the long-term average (Figure 1). Note that this figure only represents the wage increase. The total post-training wage for graduates in 2018-2019 averaged \$48,400.
- Graduates of the JobPath program from the past five years experienced a total combined increase in annual wages of \$14.6 million. At the same time there was a reduction in public assistance costs estimated at \$1.9 million based on the sum of annual reductions over the past five years. To achieve these results, JobPath expended \$4.2 million on programs, general and administrative expenses and fundraising.
- The average return on investment in JobPath over the past five years has been 297 percent, and the return for 2018-19 was 264 percent. The return on investment is estimated based on annual expenses compared to the increase in wages less the decrease in public assistance for the year.
- For every \$1.00 of funding, JobPath produced \$3.64 in direct wage increases plus decreases in public assistance costs for graduates in 2018-19.



JobPath created an economic impact of \$79.7 million on the Pima County economy over the past five years. A total of 378 graduates obtained jobs resulting in a direct increase in wages of \$14.6 million over pre-training levels. This increased level of economic activity indirectly supports an estimated 280 additional jobs and \$10.4 million in annual payroll *at other local businesses* throughout the County through business supplier purchases and employees spending.

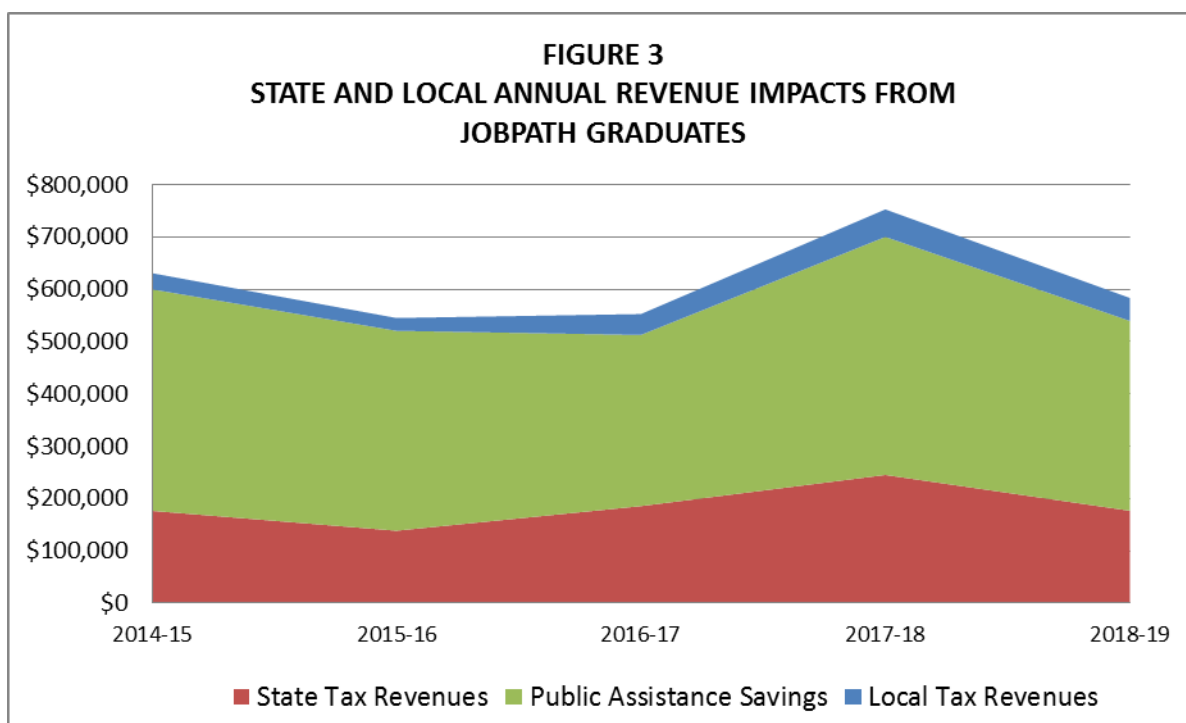
Figure 2 shows annual economic impacts and indirect jobs supported. Two years ago (2017-18) was the largest single-year impact to date, surpassing the previous peak in 2016-17. Current year impacts are slightly lower than 2017-18, but higher than all other previous years.



- Looking at the cumulative impacts of the JobPath program and assuming that graduates from previous years continue to be employed in jobs paying at least equal to their post-training wages, the cumulative economic impact over the past five years totals \$146.3 million, based on cumulative wage increases of \$26.9 million. *A recent study of JobPath graduates from the previous five years showed that 79 percent of them were still employed in Pima County and continuing to create economic impacts.*¹
- These 378 graduates from the past five years, and the additional workers they support at other local businesses, make a significant amount of taxable purchases. The increases in payroll that are directly and indirectly supported through the JobPath program resulted in \$525,000 in additional city and county sales tax revenues and \$2.7 million in cumulative additional state sales and personal income tax revenues over the past five years (Figure 3). These revenue impacts are based on taxes paid by employed graduates from 2014-15 through 2018-19.

¹ Applied Economics, Long Term Impacts of JobPath Graduates on Pima County, January 2016.

- Along with the additional tax revenues, JobPath also supported a decrease in public assistance expenditures. Many of the participants were receiving various types of public assistance prior to completing the training and being placed in jobs that enabled them to become self-sufficient. Based on the average cost per recipient for TANF, Food Stamps, General Assistance, Childcare Assistance and AHCCCS in Pima County and the number of graduates who were previously receiving assistance, JobPath created an estimated total reduction of \$5.9 million in cumulative public assistance payments by the state over the past five years. Annual revenue impacts are shown in Figure 3.



- In order to understand the scale of the JobPath program and its value to the local economy, it is useful to compare the increase in workers in key occupations in Pima County, versus the number of JobPath graduates placed in those occupations.² In the occupations where JobPath produced the largest number of graduates last year, these graduates filled a significant number of the new jobs in Pima County.
 - In the Aviation program, JobPath produced 16 graduates in 2018-19 and 11 of those were placed in jobs upon graduation. This industry has a large number of workers retiring and the number of aircraft mechanics working in Pima County increased by 130 from 2017 to 2018, with JobPath graduates accounting for 12 percent of those additional jobs.

² Bureau of Labor Statistics, Occupational Employment Statistics series for Pima County.

- In the RN program, JobPath produced 29 graduates, 26 of whom were placed in jobs upon graduation, helping to meet the continued high demand for nurses in the county.
 - In the LPN program, JobPath produced 15 graduates, 12 of whom were placed in jobs immediately. The overall number of LPN's working in Pima County increased by 50 people from 2017 to 2018, with JobPath graduates accounting for 30 percent of those additional jobs.
- Along with producing graduates in high demand occupations, JobPath has also aligned its programs with the target industries for the region, including Aerospace and Defense, Transportation and Logistics, and Bioscience. The types of graduates that JobPath produces fill a critical need for in-demand jobs that require skills training beyond high school, but not a four-year degree. According to a study by the National Skills Coalition, 51 percent of the job openings in Arizona over the next ten years will require skills training, and an additional 32 percent will require a four-year degree.³
 - The Aerospace & Defense industry is a major component of the region's economy and the Tucson metro area is ranked as one of the top five areas in the country for this industry.⁴ Having the workforce to support this industry is critical to its long-term sustainability in Pima County. Pima Community College plays an important role in workforce development for Aerospace & Defense through its Aviation Technology Center, which produced 16 JobPath graduates this past year.
 - Pima County has also become a leading center for innovation in the Bioscience industry. Since 2002, bioscience jobs statewide have increased by 58 percent. According to the Arizona Bioscience Roadmap, jobs in hospitals account for 78 percent of all bioscience jobs in Arizona. In the Tucson metro area, there is a growing hospital sub-sector that has experienced significant employment increases. Health-allied fields accounted for 76 percent of JobPath graduates this year. While some jobs in this industry require a four year degree, Pima Community College has a significant focus in applied degree programs to support health care and bioscience in the region.
 - Because of Southern Arizona's strategic location relative to Mexico and Southern California, more than 150 transportation and logistics providers have been attracted to Pima County. However, a nationwide shortage of truck drivers threatens to slow the flow of products across the country since close to 70 percent of all freight tonnage is currently transported by truck. JobPath's focus on training truck drivers produced 5 graduates this past year, 4 of whom found jobs with local transportation providers.

JobPath is a valuable program to support long-term workforce training in Pima County. It has generated a high return on investment based on program funding during the past five years.

³ National Skills Coalition, *Skills Mismatch Fact Sheets by State, 2019*, <http://www.nationalskillscoalition.org/state-policy/fact-sheets>

⁴ Sun Corridor Inc, <http://www.suncorridorinc.com/industry-strengths/aerospace-defense>

JobPath continues to produce graduates to fill positions in key growth occupations in the county in health care, aviation, trucking and other fields. The availability of skilled workers benefits the local economy in general, plus it produces significant increases in earnings and standard of living for program graduates.

3.0 ECONOMIC IMPACT RESULTS

Economic impacts measure the effects of economic stimuli or expenditures on the local economy. These impacts include direct and indirect jobs, personal income and economic activity or output that are supported by graduates of the JobPath program. Indirect impacts are the result of the multiplier effect and capture supported supplier and consumer businesses and their employees in Pima County that benefit from this economic stimulus.

The economic impact results presented here are grouped into direct and total impacts. Direct impacts include the 378 graduates of the JobPath program from 2014-15 through 2018-19 who found jobs in the region. Direct income of \$14.6 million represents the increase in wages for these individuals over their pre-training wages. The direct increase in production value or output created by these 378 workers is estimated at \$46.6 million per year.

In reality, graduates continue to contribute to the local economy even after they leave JobPath. Looking at cumulative impacts of the program over the past five years, the total economic impact on the community is estimated at \$145.8 million. Of course, some graduates will move away and/or change jobs over time. However, this type of investment in human capital continues to provide benefits long after individuals complete the training programs. *A recent study of JobPath graduates from the previous five years showed that 79 percent of them were still employed in Pima County.*

The secondary impacts supported by JobPath graduates in terms of supplier purchases and employee spending are called multiplier effects. Multiplier effects are a way of representing the larger economic effects on the local economy and translate an increase in output (loosely defined as gross sales, less non-local inputs) into a corresponding increase in jobs and personal income. In essence, the multiplier effect represents the recycling of local spending. This recycling process creates new business opportunities. The multipliers used in this analysis are from IMPLAN, a national vendor of economic impact software, and are specific to Pima County.

The JobPath graduates from 2018-19 alone created a total economic impact of \$17.6 million in Pima County. They indirectly supported an estimated 60 jobs and \$2.4 million in personal income at other local businesses through additional supplier purchases by their employers and consumer purchases made by graduates. These economic impacts at other local businesses are in addition to the 80 new jobs and \$3.4 million increase in payroll directly attributed to JobPath graduates in 2018-19. The impacts for the past five fiscal years are detailed in Figure 4. Data for previous years is included in the Appendix.

The economic multipliers used in this analysis vary by training program since industry-specific multipliers were used for each program. The average output multiplier for JobPath training programs over the past five years is 1.71. Thus, for every \$1.0 million increased production as a result of JobPath graduates, an additional \$710,000 in demand is created at other supporting businesses in Pima County along with 6 indirect jobs.

FIGURE 4
ECONOMIC IMPACT OF JOBPATH PROGRAM OVER PAST FIVE YEARS

	Direct Impacts			Total Impacts			Total Annual Expenditures	Return on Investment ²
	Output	Jobs	Income ¹	Output	Jobs	Income		
2014-15	\$8,869,441	73	\$2,857,438	\$14,700,443	125	\$4,556,484	\$717,183	357%
Electric Utility Technology	\$343,172	1	\$31,788	\$476,971	2	\$55,595		
Respiratory Therapy	\$223,794	3	\$105,810	\$376,103	4	\$148,651		
RN Program	\$1,905,526	18	\$900,933	\$3,202,375	30	\$1,265,712		
LPN Program	\$912,925	12	\$431,631	\$1,534,237	18	\$606,394		
Dental Hygienist	\$364,118	5	\$235,976	\$651,874	8	\$316,209		
Dental Assisting	\$145,566	4	\$94,338	\$260,605	5	\$126,413		
Med Lab Tech	\$73,314	1	\$42,244	\$127,176	1	\$57,402		
Aviation	\$1,998,574	11	\$343,646	\$3,359,301	24	\$774,743		
Trucking	\$2,373,328	10	\$545,532	\$3,748,929	22	\$964,056		
Electrician	\$80,091	5	\$26,196	\$114,225.87	5	\$35,797		
Law Enforcement	\$263,714	2	\$58,344	\$498,404	4	\$120,694		
Fire Science Academy	\$185,319	1	\$41,000	\$350,243	2	\$84,815		
2015-16	\$7,340,566	61	\$2,238,759	\$12,111,274	104	\$3,630,920	\$734,381	257%
Electric Utility Technology	\$561,373	1	\$52,000	\$780,247	2	\$90,945		
Radiology Technician	\$44,433	2	\$21,008	\$74,673	2	\$29,514		
Respiratory Therapy	\$222,331	4	\$105,118	\$373,643	5	\$147,679		
RN Program	\$1,180,947	12	\$558,352	\$1,984,668	19	\$784,423		
LPN Program	\$742,151	12	\$350,889	\$1,247,238	17	\$492,961		
Dental Hygienist	\$334,559	5	\$216,819	\$598,954	7	\$290,539		
Dental Assisting	\$80,177	2	\$51,961	\$143,540	3	\$69,628		
Biotech Research	\$13,537	1	\$7,800	\$23,482	1	\$10,599		
Aviation	\$2,306,851	12	\$396,653	\$3,877,469	27	\$894,246		
Med Lab Tech	\$154,371	3	\$88,949	\$267,783	4	\$120,867		
Trucking	\$1,524,214	6	\$350,355	\$2,407,662	14	\$619,142		
Law Enforcement	\$175,621	1	\$38,854	\$331,914	2	\$80,377		
2016-17	\$8,738,759	74	\$2,583,516	\$15,342,967	129	\$4,780,371	\$784,920	271%
Fire Science Academy	\$93,509	1	\$20,688	\$159,798	2	\$41,831		
Radiology Technician	\$338,372	5	\$159,982	\$593,586	7	\$240,121		
Respiratory Therapy	\$190,161	4	\$89,908	\$333,588	5	\$134,945		
RN Program	\$1,146,897	12	\$542,253	\$2,011,934	19	\$813,880		
LPN Program	\$503,194	8	\$237,910	\$882,725	11	\$357,085		
Dental Hygienist	\$362,032	4	\$234,624	\$655,148	6	\$324,117		
Dental Assisting	\$28,047	1	\$18,177	\$50,755	1	\$25,110		
Aviation	\$4,053,578	19	\$696,995	\$7,248,674	46	\$1,800,161		
Med Lab Tech	\$227,924	4	\$131,331	\$396,944	5	\$184,674		
Trucking	\$1,038,720	7	\$238,760	\$1,795,649	13	\$490,390		
Electrician	\$225,247	5	\$73,674	\$330,139	6	\$106,317		
Surgical Tech	\$96,785	1	\$45,760	\$169,784	2	\$68,682		
Law Enforcement	\$347,200	2	\$76,814	\$593,330	4	\$155,319		
Welding	\$87,094	1	\$16,640	\$120,912	1	\$37,738		
2017-18	\$11,496,540	90	\$3,572,194	\$19,938,509	159	\$6,278,336	\$911,208	342%
Fire Science Academy	\$200,970	1	\$43,000	\$347,914	2	\$90,981		
Radiology Technician	\$703,610	5	\$129,921	\$1,219,255	9	\$291,587		
Respiratory Therapy	\$281,444	2	\$51,440	\$487,702	4	\$116,107		
RN Program	\$4,362,382	31	\$1,442,599	\$7,559,380	57	\$2,444,930		
LPN Program	\$1,829,386	13	\$564,870	\$3,170,063	24	\$985,203		
Dental Hygienist	\$304,811	5	\$205,680	\$544,019	7	\$278,492		
Dental Assisting	\$132,439	4	\$89,367	\$236,374	5	\$121,004		
Aviation	\$1,325,510	8	\$285,891	\$2,379,654	17	\$651,582		
Med Lab Tech	\$110,526	2	\$66,404	\$191,550	3	\$91,874		
Trucking	\$1,747,790	16	\$582,397	\$2,987,872	26	\$993,689		
Surgical Tech	\$140,722	1	\$36,504	\$243,851	2	\$68,837		
Law Enforcement	\$220,287	1	\$47,133	\$381,354	2	\$99,726		
Welding	\$136,661	1	\$26,988	\$189,519	1	\$44,323		
2018-19	\$10,130,060	80	\$3,376,968	\$17,591,469	142	\$5,766,807	\$1,027,681	264%
Radiology Technician	\$703,610	5	\$204,244	\$1,219,255	9	\$365,910		
Respiratory Therapy	\$562,888	4	\$190,412	\$975,404	7	\$319,745		
RN Program	\$3,658,772	26	\$1,382,276	\$6,340,125	48	\$2,222,941		
LPN Program	\$1,688,664	12	\$428,969	\$2,926,212	22	\$816,968		
Dental Hygienist	\$523,099	6	\$352,976	\$933,614	9	\$477,932		
Dental Assisting	\$96,559	4	\$65,156	\$172,336	5	\$88,222		
Aviation	\$1,822,577	11	\$372,538	\$3,272,025	23	\$875,363		
Med Lab Tech	\$180,280	3	\$108,312	\$312,439	4	\$149,857		
Trucking	\$445,377	4	\$148,408	\$761,378	6	\$253,215		
Electrician	\$117,923	3	\$45,760	\$171,913	3	\$62,355		
Surgical Tech	\$140,722	1	\$40,477	\$243,851	2	\$72,810		
Welding	\$189,588	1	\$37,440	\$262,917	2	\$61,489		
5 Year Total	\$46,575,366	378	\$14,628,875	\$79,684,661	659	\$25,012,918	\$4,175,373	297%

Source: JobPath; Applied Economics, 2020.

¹ Direct income represents only increase in salary over pre-training level, not full ending salary. ² Return on investment based on increase in wages (direct income) per dollar of total expenses.

The largest program is the RN program, which has placed a total of 99 graduates in jobs over the past five years, followed by the aviation and LPN programs that had 57 and 60 graduates, respectively. In terms of the average wage increases per person, the dental hygienist, RN and respiratory therapy programs ranked the highest, with average wage increases of \$47,000 to \$59,000 per person in 2018-19. The overall average increase for all occupations in 2018-19 was \$42,200 per person or 679 percent. *Note that these percentage increases include individuals who were not employed prior to entering JobPath.*

Most JobPath participants are below the poverty level prior to entering the program. The average pre-training annual wage in 2018-19 was \$6,214 per person and includes 46 graduates who were previously unemployed, which is more than half of the total graduates placed in jobs in the past year. Thus, a significant number of graduates from this past year were newly employed as a result of their training.

The average post-training annual wage was \$48,400 in 2018-19, or \$24.52 per hour. The City of Tucson considers \$17.37 per hour to be a livable wage, so the average wage of JobPath graduates is considerably above that standard.⁵ The average post-training wage of \$48,400 is only somewhat higher than the average wage increase of \$42,200 because about half of the graduates placed in jobs did not have pre-training income. The magnitude of post-training wages is largely a function of the distribution of graduates by program. The RN and dental hygienist programs offered the highest post-training wages in 2018-19, at \$62,400 and \$59,200, respectively. This year, both the respiratory therapy and radiology technician programs also had average post-training wages over \$44,000.

⁵ National Low Income Housing Coalition, Out of Reach 2019, 2-Bedroom Housing Wage for Pima County represents full time hourly wage required to afford a 2-bedroom home.

4.0 REVENUE IMPACT RESULTS

In addition to economic impacts, the graduates of the JobPath program also generate increased tax revenues to state and local governments. Through increases in wages and spending, they generate additional sales taxes to the city, county and state and additional state personal income taxes. It may also be the case that the companies they work for generate increased sales or income taxes as a result of increasing their production; however, information about employers is not available to calculate these types of revenue impacts.

Sales taxes from employee spending are based on typical consumer expenditure patterns. According to the Census Consumer Expenditure Survey, approximately 27 percent of gross income is spent on taxable goods. Applying this assumption to personal income from the economic impact results in a cumulative increase of \$525,000 in city and RTA sales taxes over the past five years (Figure 5). Note that the direct impacts include only the additional taxes generated by the increase in wages for JobPath graduates, not their total wages.

In terms of state taxes, JobPath graduates from the past five years directly and indirectly generated a \$1.1 million cumulative increase in state sales tax revenues. In addition, they generated a cumulative increase of \$1.6 million in annual personal income tax revenues to the state. It is important to look at cumulative revenue impacts since graduates from previous years continue to generate local taxes as they continue to work and contribute to the economy. All total, JobPath graduates directly and indirectly supported an increase of \$3.2 million in cumulative annual state and local tax revenues over the past five years, including \$242,000 from 2018-19 graduates.

FIGURE 5
ANNUAL INCREASE IN LOCAL AND STATE TAX REVENUES
BASED ON INCREASES IN POST-TRAINING WAGES

	Local Impacts		State Impacts		
	City Sales Tax	RTA Sales Tax	Sales Tax	Personal Income Tax	Total Taxes
2014-15					
Direct Revenues	\$15,430	\$3,858	\$43,204	\$69,399	\$131,892
Total Revenues	\$24,605	\$6,151	\$68,894	\$106,190	\$205,841
2015-16					
Direct Revenues	\$12,089	\$3,022	\$33,850	\$53,429	\$102,391
Total Revenues	\$19,607	\$4,902	\$54,900	\$83,771	\$163,179
2016-17					
Direct Revenues	\$18,136	\$3,488	\$39,063	\$60,764	\$121,451
Total Revenues	\$33,558	\$6,454	\$72,279	\$113,327	\$225,618
2017-18					
Direct Revenues	\$25,077	\$4,822	\$54,012	\$87,188	\$171,099
Total Revenues	\$44,074	\$8,476	\$94,928	\$150,268	\$297,746
2018-19					
Direct Revenues	\$23,706	\$4,559	\$51,060	\$73,822	\$153,147
Total Revenues	\$40,483	\$7,785	\$87,194	\$106,727	\$242,190
5 Year Total	\$162,327	\$33,767	\$378,195	\$560,284	\$1,134,574
5 Year Cumulative Total	\$430,758	\$94,460	\$1,057,957	\$1,613,281	\$3,196,456

Source: JobPath; Applied Economics, 2020.

Note: Total revenue impacts include revenues related to additional indirect and induced workers and payroll supported through economic impacts. Total revenues are inclusive of direct revenues.

5.0 REDUCTION IN PUBLIC ASSISTANCE COSTS

In addition to supporting increases in tax revenues, the JobPath program also supported a reduction in public assistance costs. Information is available to document the number of program participants that were receiving various types of public assistance when they came to JobPath. It is assumed that based on the typical increase in wages for program participants, the individuals who found jobs were able to become self-sufficient.

Using average payments per recipient by type of program for Pima County from the Arizona Department of Economic Security and AHCCCS, it is possible to estimate the annual decrease in public assistance expenditures. While the reductions are shown for each year, it is assumed that these impacts would be cumulative over time. All total, the JobPath program resulted in a five year cumulative decrease in public assistance expenditures of \$5.9 million in Pima County, based on job placements over the past five years, including \$363,000 from 2018-19 graduates (Figure 6).

FIGURE 6
ANNUAL REDUCTION IN PUBLIC ASSISTANCE COSTS

Program Year	Assistance Program					Total Public Assistance
	Food Stamps	TANF	Utility Assistance	AHCCCS	Child Care	
2014-15	(\$100,762)	(\$2,437)	(\$9,744)	(\$281,829)	(\$28,502)	(\$423,274)
2015-16	(\$81,654)	(\$4,848)	(\$2,417)	(\$270,668)	(\$22,360)	(\$381,948)
2016-17	(\$68,517)	\$0	\$0	(\$241,701)	(\$16,735)	(\$326,953)
2017-18	(\$76,908)	\$0	(\$7,350)	(\$345,442)	(\$25,103)	(\$454,802)
2018-19	(\$59,698)	\$0	\$0	(\$261,059)	(\$41,838)	(\$362,595)
5 Year Total	(\$387,539)	(\$7,285)	(\$19,511)	(\$1,400,699)	(\$134,539)	(\$1,949,573)
5 Year Cumulative Total	(\$1,249,493)	(\$31,579)	(\$73,087)	(\$4,168,862)	(\$374,203)	(\$5,897,224)

Source: Arizona Department of Economic Security; AHCCCS; JobPath; Applied Economics, 2020.

6.0 RETURN ON INVESTMENT

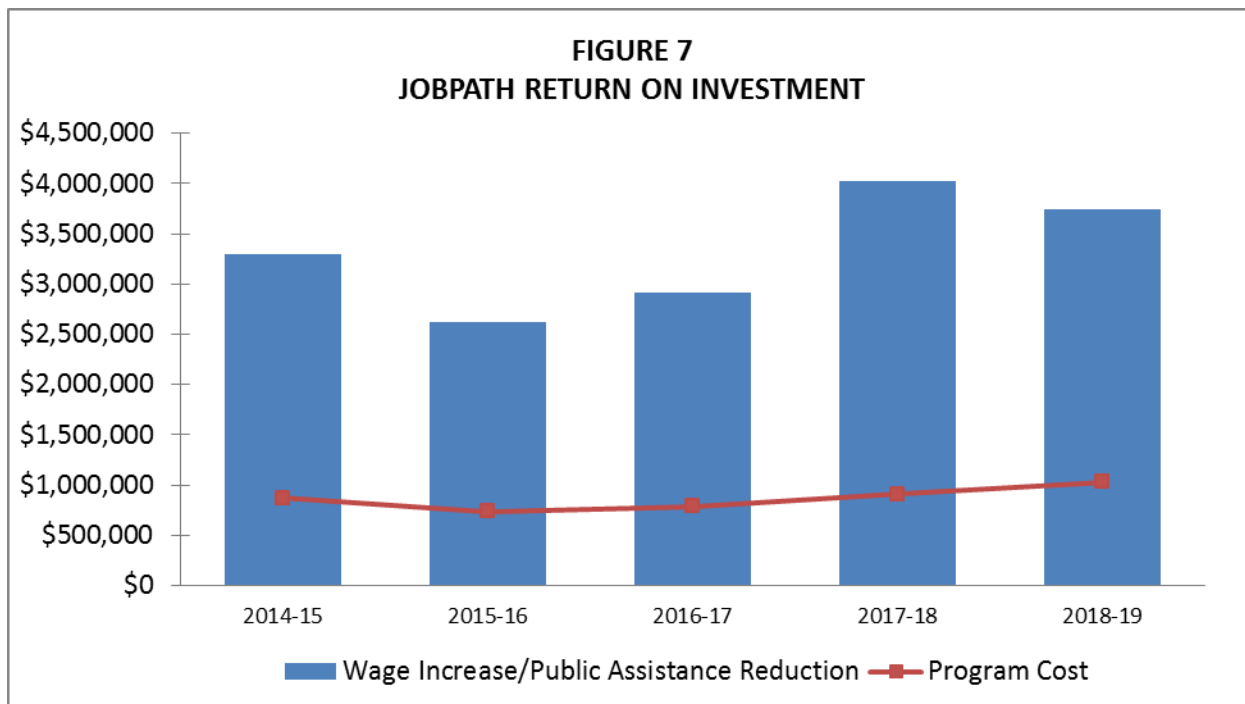
The final and most important calculation is the return on investment that JobPath is providing to the city and county based on the value of increased wages for graduates per dollar of total expenses. All total, 477 individuals participated in the program from 2014-15 through 2018-19. Of that total, 378 individuals found jobs immediately upon graduation. An additional 23 individuals completed the program between 2014-2015 and 2018-19, but decided to continue their education or joined the military and were not placed in jobs. Finally, 76 individuals who completed the program during the five-year period did not provide sufficient information about post-training wages to be included in the economic impact analysis. However, based on longer term data on graduates, it is evident that a number of the graduates who were not employed immediately did ultimately find jobs in their field in Pima County.

- The return on investment calculation is equal to (Aggregate increase in wages for graduates placed in jobs in a given year + decrease in public assistance costs for graduates from that year previously receiving assistance)/ total expenses for that year.
- The aggregate wage increase is the sum of the post-training wage minus the pre-training wage for each individual who was placed in a job based on data for graduates in the past year.
- The amount of public assistance is equal to the average cost per program times the number of graduates participating in those assistance programs as described in section 5.0.
- Total expenses used to estimate return on investment are taken from annual audited financial statements and include program costs, general and administrative costs and fundraising expenses.

Case management is integral to the success of participants in the JobPath program. Typical clients are already stretched thin by family and work demands and building habits of engagement requires a concerted effort. Case managers help students navigate academic and institutional challenges, as well as providing counsel and directives that are essential to help them avoid disruptions that sabotage their ability to complete their academic program. Case managers are also able to connect students to other financial resources beyond the financial assistance provided by JobPath, including Pell Grants, scholarships, and Workforce Investment Act funds through Arizona@Work Pima County.

Over the 2018-19 fiscal year, total expenses were \$1.0 million. This represents a 13 percent increase over the previous year. The number of graduates this year (including those not placed in jobs) decreased from a record high last year of 109, to 102 this year. However the number of 2018-19 graduates was still well above the five year average of 95. The current total annual expenses for JobPath can be compared to an increase in wages less the decrease in public assistance of \$3.7 million in 2018-19, resulting in a return on investment of 264 percent. The average cost per graduate in 2018-19 was \$10,075, based on 102 individuals completing the

program, which is slightly higher than last year given the increase in expenses. The average wage increase for program graduates was \$42,200, which is the highest average increase over the five-year study period.



It is important to note that some of the individuals that did not obtain jobs immediately may have furthered their education with or without assistance from JobPath. Thus some of the value of increased wages that are attributed to the JobPath program may have happened anyhow, given that more than 90 percent of students are already enrolled at the community college prior to becoming JobPath clients. However, JobPath has been able to significantly decrease the dropout rate for the types of individuals that they serve with less than 5 percent of participants not completing the JobPath program, thus adding value to the community and increasing the return on investment for the public funding they receive.

JobPath provides an important service to the community by enhancing the quality of life for graduates and their families by increasing their household incomes. In 2018-19, the average increase in annual wages per graduate was \$42,200. JobPath also provides qualified motivated employees to meet the needs of local employers in high growth and targeted industries. JobPath has aligned its programs with the target industries for the region, including Aerospace and Defense, Transportation and Logistics, and Bioscience. The types of graduates that JobPath produces fill a critical need for middle-skill workers in these industries.

Based on the average increase in wages compared to local program funding, JobPath has provided an excellent return on investment over the past five years, with another strong year in 2018-19. In the past five years there were 477 total graduates, including 378 graduates that reported post-training wages. These employed graduates from the past five years experienced a combined annual wage increase of \$14.6 million over their pre-training wage levels. At the

same time, there was a reduction in public assistance costs estimated at \$1.9 million for these individuals, based on the sum of annual reductions over the past five years. In reality these impacts cumulate over time, but in order to provide a conservative return on investment calculation, we are simply counting each year of graduates once.

The sum of wage increases less reductions in public assistance over the past five years can be compared to \$4.2 million in total expenses over the five year period, resulting in an overall return on investment of 297 percent for the period. In other words, for every \$1.00 of local funding, JobPath produced \$3.97 in direct wage increases plus decreases in public assistance costs for graduates in between 2014-15 and 2018-19.

APPENDIX A – METHODOLOGY AND DATA SOURCES

The job training impacts for JobPath relies primarily on multipliers from IMPLAN for Pima County. IMPLAN is a national vendor of input-output software and data used to create economic impact models and is widely used in government, higher education and in the private sector to evaluate economic impacts. IMPLAN is an input-output model. Input-output analysis is a means of examining relationships within an economy, both between businesses and between businesses and final consumers. It captures all monetary market transactions for consumption in a given time period. The resulting mathematical formulas allow for examination of the effects of a change in one or several economic activities on an entire economy (impact analysis).

The IMPLAN model begins with the most current national transactions matrix developed by the National Bureau of Economic Analysis Benchmark Input-Output Model. The model breaks down the U.S. economy into over 500 separate economic sectors in agriculture, manufacturing, commercial services, and government. Next, IMPLAN creates state- and county-level values by adjusting the national level data, such as removing industries that are not present in a particular state or region. These economic sector data are updated annually by IMPLAN. The most current available sectoral data are for 2018, which was used in this analysis for evaluate 2018-19 data. Multipliers for previous years were matched with historical data for JobPath graduates.

Economic impacts are typically estimated using multipliers. IMPLAN proprietary software combined with data files purchased from IMPLAN for a particular geographic region can be used to create multipliers. In this case, county-level data for Pima County were used to create the multipliers in order to focus the analysis on local job creation within the JobPath service area. In general, these multipliers quantify the total production requirements for each industry within the selected study area for every unit of production sold to final demand. Multipliers may be constructed for output, employment, and labor income. Multipliers can be used to measure the impact of industries in the region buying goods and services from other regional industries. The cycle of spending works its way backward through the supply chain until all money leaks from the regional economy, either through imports or by payments to value added.

In the case of job training and placement, multipliers for specific industries are matched to the types of businesses where graduates are placed. The increase in employment and payroll associated with newly hired JobPath graduates ultimately translates into increased production of goods or services. This increase in production triggers an increase in demand for inputs, some of which are provided by local suppliers. This activity can be quantified using economic multipliers for individual industries and then aggregated across all JobPath programs.

Multipliers are also used to measure how payroll from the businesses employing JobPath graduates results in additional consumer purchases by employees. This money is recirculated through their household spending patterns causing further economic activity in the region and supporting additional jobs and labor income. These are the induced impacts discussed above. Direct, indirect, and induced impacts are summed to generate total impacts.

The economic multipliers are applied to data on individual graduates that is provided on an annual basis by JobPath. Each student record includes the JobPath program name, graduation date, pre-training wage, post-training wage, employer name, amount of direct financial assistance provided by JobPath, and a binary indicator of previous participation in public assistance programs including AHCCCS, food stamps, utility assistance, TANF and child care assistance.

APPENDIX B – HISTORICAL ECONOMIC IMPACTS

**APPENDIX B
ECONOMIC IMPACT OF JOBPATH PROGRAM 2009-10 TO 2013-14**

	Direct Impacts			Total Impacts			Total Annual Expenditures	Return on Investment ²
	Output	Jobs	Income ¹	Output	Jobs	Income		
2009-10	\$2,698,248	43	\$1,407,176	\$4,639,351	60	\$2,020,845	\$672,465	166%
CNA	\$89,183	3	\$44,720	\$154,574	4	\$65,167		
Histology	\$80,410	2	\$40,321	\$139,369	3	\$58,756		
Radiology Technician	\$78,813	1	\$39,520	\$136,601	1	\$57,589		
Respiratory Therapy	\$99,553	1	\$49,920	\$172,548	2	\$72,744		
RN Program	\$1,228,387	17	\$615,962	\$2,129,071	25	\$897,588		
LPN Program	\$368,579	5	\$184,820	\$638,831	7	\$269,323		
Dental Hygenist	\$361,851	5	\$214,750	\$609,230	7	\$295,525		
Dental Assisting	\$126,172	3	\$74,880	\$212,429	4	\$103,045		
Biotech Research	\$26,147	1	\$16,640	\$48,039	1	\$23,878		
Aviation	\$73,137	1	\$50,398	\$116,350	1	\$64,697		
PCT	\$77,465	2	\$38,844	\$134,264	2	\$56,604		
HIT	\$41,481	1	\$20,800	\$71,895	1	\$30,310		
Electrician	\$47,070	1	\$15,600	\$76,150	1	\$25,619		
2010-11	\$3,017,894	48	\$1,468,349	\$5,165,672	66	\$2,147,617	\$802,820	126%
Radiology Technician	\$305,578	5	\$153,229	\$529,635	7	\$223,287		
Respiratory Therapy	\$170,024	3	\$85,257	\$294,690	4	\$124,238		
RN Program	\$1,113,341	15	\$558,274	\$1,929,670	22	\$813,524		
LPN Program	\$380,514	5	\$190,805	\$659,517	7	\$278,044		
Dental Hygenist	\$261,013	4	\$154,905	\$439,455	6	\$213,171		
Dental Assisting	\$157,014	4	\$93,184	\$264,356	5	\$128,234		
Biotech	\$24,060	2	\$15,312	\$44,205	2	\$21,972		
Medical Lab Tech	\$44,592	1	\$22,360	\$77,287	1	\$32,583		
Electrician	\$31,380	1	\$10,400	\$50,767	1	\$17,079		
Medical Coding & Billing	\$210,391	5	\$124,862	\$354,224	6	\$171,827		
Power Plant/A&P	\$319,987	3	\$59,761	\$521,865	4	\$123,658		
2011-12	\$2,420,421	36	\$1,136,157	\$4,205,571	53	\$1,699,408	\$940,786	57%
Radiology Technician	\$219,385	4	\$108,526	\$390,706	6	\$161,022		
Respiratory Therapy	\$7,779	1	\$3,848	\$13,853	1	\$5,709		
RN Program	\$1,219,032	15	\$603,035	\$2,170,993	24	\$894,735		
LPN Program	\$309,004	5	\$152,859	\$550,309	7	\$226,800		
Dental Hygenist	\$162,794	2	\$103,168	\$292,785	3	\$146,307		
Plumbing	\$24,257	1	\$8,320	\$38,355	1	\$13,292		
Biotech	\$6,191	1	\$3,328	\$11,676	1	\$5,188		
Aviation	\$67,938	1	\$36,400	\$123,734	2	\$56,878		
Trucking	\$32,474	1	\$14,400	\$55,562	1	\$22,935		
Electrician	\$48,513	1	\$16,640	\$76,711	1	\$26,584		
Medical Coding & Billing	\$26,814	2	\$16,993	\$48,225	2	\$24,098		
Power Plant/A&P	\$170,563	1	\$39,520	\$249,108	2	\$66,707		
Air Frame	\$125,678	1	\$29,120	\$183,554	2	\$49,153		
2012-13	\$5,169,041	75	\$2,543,911	\$9,127,363	113	\$3,861,578	\$887,493	224%
Radiology Technician	\$97,961	2	\$48,460	\$174,461	3	\$71,901		
Respiratory Therapy	\$74,003	2	\$36,608	\$131,793	3	\$54,316		
RN Program	\$1,286,006	14	\$636,166	\$2,290,268	23	\$943,892		
LPN Program	\$1,229,899	19	\$608,411	\$2,190,346	28	\$902,711		
Dental Hygenist	\$166,240	3	\$105,352	\$298,983	4	\$149,404		
Dental Assisting	\$117,829	4	\$74,672	\$211,915	5	\$105,895		
Med Lab Tech	\$39,419	1	\$19,500	\$70,202	1	\$28,933		
Aviation	\$683,980	13	\$366,462	\$1,245,706	19	\$572,625		
Trucking	\$1,402,883	15	\$622,080	\$2,400,280	25	\$990,790		
Electrician	\$64,257	1	\$22,040	\$101,605	1	\$35,211		
Medical Coding & Billing	\$6,564	1	\$4,160	\$11,806	1	\$5,899		

APPENDIX B
ECONOMIC IMPACT OF JOBPATH PROGRAM 2009-10 TO 2013-14

	Direct Impacts			Total Impacts			Total Annual Expenditures	Return on Investment ²
	Output	Jobs	Income ¹	Output	Jobs	Income		
2013-14	\$4,297,596	60	\$2,187,635	\$7,628,215	92	\$3,292,815	\$680,447	252%
Radiology Technician	\$125,936	2	\$62,299	\$224,282	3	\$92,434		
Respiratory Therapy	\$75,685	1	\$37,440	\$134,788	2	\$55,550		
RN Program	\$1,157,663	15	\$572,677	\$2,061,699	23	\$849,691		
LPN Program	\$727,277	11	\$359,772	\$1,295,219	16	\$533,801		
Dental Hygenist	\$520,111	7	\$329,612	\$935,420	11	\$467,437		
Dental Assisting	\$56,104	4	\$35,555	\$100,903	4	\$50,422		
Med Lab Tech	\$84,094	1	\$41,600	\$149,765	2	\$61,723		
Aviation	\$660,992	12	\$354,146	\$1,203,839	17	\$553,380		
Trucking	\$889,734	7	\$394,534	\$1,522,301	13	\$628,377		

Source: JobPath; Applied Economics, 2020.

¹ Direct income represents only increase in salary over pre-training level, not full ending salary. ² Return on investment based on increase in wages (direct income) per dollar of total expenses.