

# EXECUTIVE SUMMARY

## *Demonstrating the Economic Value of Northland Pioneer College*



FEBRUARY 2015

ANALYSIS OF THE ECONOMIC IMPACT & RETURN ON INVESTMENT OF EDUCATION

*Northland Pioneer College (NPC) creates value in many ways. The college plays a key role in helping students increase their employability and achieve their individual potential. It provides students with the skills they need to have a fulfilling and prosperous career. Further, it supplies an environment for students to meet new people, increase their self-confidence, and promote their overall health and well-being.*

The contribution of NPC influences both the lives of students and also the regional economy. The college serves a range of industries in Navajo County and supports local businesses, and society as a whole in Arizona benefits from an expanded economy and improved quality of life. The benefits created by NPC even extend to the state and local government through increased tax revenues and public sector savings.

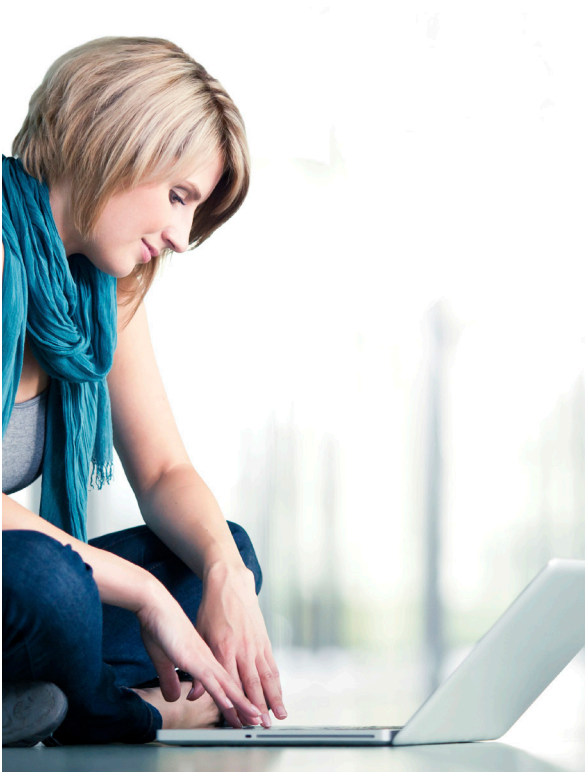
The purpose of this study is to investigate the economic impacts created by NPC on the business community and the benefits that the college generates in return for the investments made by its key stakeholder groups—students, society, and taxpayers. The following two analyses are presented:

- **REGIONAL ECONOMIC IMPACT ANALYSIS**
- **INVESTMENT ANALYSIS**

All results reflect student and financial data for Fiscal Year (FY) 2013-14. Impacts on the business community are reported under the economic impact analysis, and the return on investment to students, society, and taxpayers are reported under the investment analysis. Both analyses are described more fully in the following sections.

# ECONOMIC IMPACT ANALYSIS

*NPC promotes economic growth in Navajo County in a variety of ways. The college is an employer and buyer of goods and services, and the living expenses of students from outside of Navajo County benefit local businesses. In addition, NPC is a primary source of education to Navajo County residents and a supplier of trained workers to Navajo County industry.*



The regional economic impact analysis examines the impact of NPC on the local business community through increased consumer spending and enhanced business productivity. Results are measured in terms of added income and are organized according to the following three impacts:

1. Impact of college operations;
2. Impact of the spending of students who relocated to the region, and;
3. Impact of the increased productivity of alumni that were employed in the regional workforce during the analysis year.

## OPERATIONS SPENDING IMPACT

NPC is an important employer in Navajo County. In FY 2013-14, the college employed 553 full-time and part-time faculty and staff. Of these, 95% lived in Navajo County. Total payroll at NPC was \$17.2 million, much of which was spent in the region for groceries, rent, eating out, clothing, and other household expenses.

NPC is itself a large-scale buyer of goods and services. In FY 2013-14 the college spent \$11 million to cover its expenses for facilities, professional services, and supplies.

The total income that NPC created during the analysis year as a result of its day-to-day operations was \$17.6 million. This figure represents the college's payroll, the multiplier effects generated by the spending of the college and its employees, and a downward adjustment to account for funding that the college received from local sources.

JOB EQUIVALENTS BASED ON INCOME

Job equivalents are a measure of the average-wage jobs that a given amount of income can potentially support. They are calculated by dividing income by the average income per worker in the county. Based on the added income created by NPC, the job equivalents are as follows:

Operations spending impact = **472** job equivalents

Impact of student spending = **2** job equivalents

Alumni impact = **5,481** job equivalents

Overall, the added income created by NPC and its students supported **5,955** job equivalents.

INCOME CREATED BY NPC IN FY 2013-14 (ADDED INCOME)

<div>\$17.6 MILLION</div> <div>Operations spending impact</div>
<div>\$75.4 THOUSAND</div> <div>Impact of student spending</div>
<div>\$204.7 MILLION</div> <div>Alumni impact</div>
<div>\$222.4 MILLION</div> <div>Total impact</div>

IMPACT OF STUDENT SPENDING

Around 20% of students attending NPC originated from outside the county in FY 2013-14. Some of these students relocated to Navajo County. These students likely would not have come to the region if the college did not exist. While attending, out-of-region students spent \$254,034 to purchase groceries, rent accommodation, pay for transportation, and so on. A significant portion of these expenditures occurred in the region, generating \$75.4 thousand in new income in the economy during the analysis year.

ALUMNI IMPACT

NPC’s biggest impact results from the education and training it provides for local residents. Since the college was established, students have studied at NPC and entered the workforce with new skills. Today, thousands of former students are employed in Navajo County.

During the analysis year, former students of NPC generated \$204.7 million in added income in the region. This figure represents the higher wages that students earned during the year, the increased output of the businesses that employed the students, and the multiplier effects that occurred as students and their employers spent money at other businesses.

TOTAL IMPACT

The overall impact of NPC on the local business community during the analysis year amounted to \$222.4 million, equal to the sum of the operations spending impact, the student spending impact, and the alumni impact. This added income was equal to approximately 9.6% of the region’s Gross Regional Product.

# INVESTMENT ANALYSIS

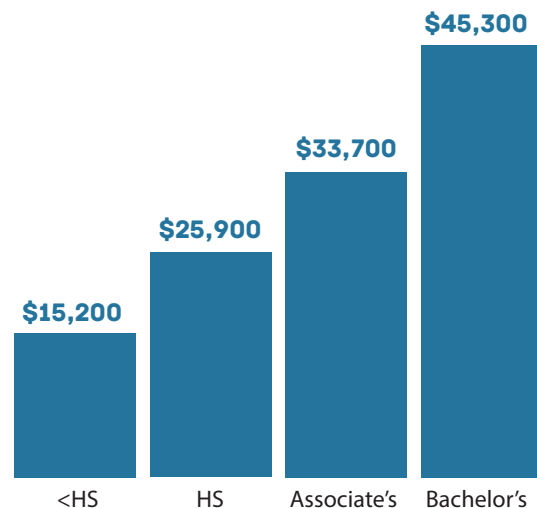
*Investment analysis is the process of evaluating total costs and measuring these against total benefits to determine whether or not a proposed venture will be profitable. If benefits outweigh costs, then the investment is worthwhile. If costs outweigh benefits, then the investment will lose money and is considered unprofitable. This study considers NPC as an investment from the perspectives of students, society, and taxpayers. The backdrop for the analysis is the entire Arizona economy.*

## STUDENT PERSPECTIVE

In 2013-14, NPC served 6,975 credit students and 2,381 non-credit students. In order to attend college, students paid for tuition, fees, books, and supplies. They also gave up money that they would have otherwise earned had they been working instead of attending college. The total investment made by NPC's students in FY 2013-14 amounted to \$33.1 million, equal to \$2.5 million in out-of-pocket expenses plus \$28.4 million in forgone time and money.

In return for their investment, NPC's students will receive a stream of higher future wages that will continue to grow through their working lives. As shown in Figure 1, mean income levels at the midpoint of the average-aged worker's career increase as people achieve higher levels of education. For example, the average associate's degree completer from NPC will see an increase in earnings of \$7,800 each year compared to someone with a high school diploma or equivalent. Over a working lifetime, this increase in earnings amounts to an undiscounted value of approximately \$273,000 in higher income.

**FIGURE 1. ANNUAL INCOME BY EDUCATION LEVEL AT CAREER MIDPOINT IN NAVAJO COUNTY**

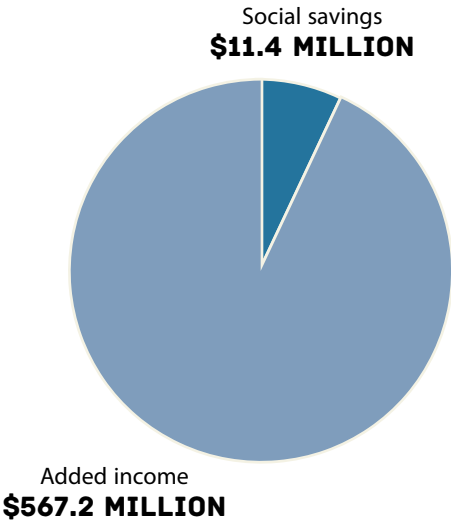


Source: EMSI complete employment data.





**FIGURE 2. PRESENT VALUE OF  
ADDED INCOME AND SOCIAL  
SAVINGS IN ARIZONA**



The present value of the higher future wages that NPC’s students will receive over their working careers is \$216.7 million. Dividing this value by the \$33.1 million in student costs yields a benefit-cost ratio of 6.5. In other words, for every \$1 students invest in NPC in the form of out-of-pocket expenses and forgone time and money, they receive a cumulative of \$6.50 in higher future wages. The average annual rate of return for students is 27.2%. This is an impressive return compared, for example, to the less than 1% return per annum that is generally expected from saving money in today’s standard bank savings accounts.

**SOCIAL PERSPECTIVE**

Society as a whole within Arizona benefits from the presence of NPC in two major ways. The first and largest benefit that society receives is the added income created in the state. As discussed in the previous section, students earn more because of the skills they acquire while attending NPC. Businesses also earn more because the enhanced skills of students make them more productive. Together, higher student wages and increased business output stimulate increases in income across the state, thereby raising prosperity in Arizona and expanding the economic base for society as a whole.

Benefits to society also consist of the savings generated by the improved lifestyles of students. Education is statistically correlated with a variety of lifestyle changes that generate social savings across three main categories: 1) health, 2) crime, and 3) unemployment. Health savings include avoided medical costs associated with smoking, alcoholism, obesity, drug abuse, and mental disorders. Crime savings include reduced security expenditure and insurance administration, lower victim costs, and reduced criminal justice system expenditures. Unemployment savings include the reduced demand for income assistance and welfare benefits. For a list of study references to these statistical benefits, please contact the college for a copy of the main report.

Figure 2 shows the present value of the added income and social savings that will occur in Arizona over the working lifetime of the 2013-14 student population at NPC. Added income amounts to a present value of \$567.2 million due to the increased lifetime incomes of students and associated increases in business output. Social savings amount to \$11.4 million, the sum of health, crime, and unemployment savings in Arizona. Altogether, total benefits to society equal \$578.6 million (in present value terms).



Society invested \$59.1 million in NPC educations during the analysis year. This includes all expenditures by NPC, all student expenditures, and all student opportunity costs. For every dollar of this investment, society as a whole in Arizona will receive a cumulative value of \$9.80 in benefits, equal to the \$578.6 million in benefits divided by the \$59.1 million in costs. These benefits will occur for as long as NPC's 2013-14 students remain employed in the state workforce.

## TAXPAYER PERSPECTIVE

From the taxpayer perspective, benefits consist primarily of the taxes that state and local government will collect from the added income created in the state. As NPC students earn more, they will make higher tax payments. Employers will also make higher tax payments as they increase their output and purchase more supplies and services. By the end of the students' working careers, state and local government will have collected a present value of \$41.4 million in added taxes.

A portion of the savings enjoyed by society also accrues to state and local taxpayers. Students are more employable, so the demand for welfare and unemployment benefits reduces. Improved health habits lower the students' demand for national health care services. Students are also less likely to commit crimes, so the demand for law enforcement services reduces (study references are available in the main report). All of these benefits will generate a present value of \$4.4 million in savings to state and local taxpayers.

Total benefits to taxpayers equal \$45.8 million, equal to the sum of the added taxes and public sector savings. Comparing this to the taxpayer costs of \$23.9 million—equal to the funding that NPC received from state and local government during the analysis year—yields a benefit-cost ratio of 1.9. This means that for every \$1 of public money invested in NPC, taxpayers receive a cumulative value of \$1.90 over the course of the students' working lives. The average annual rate of return is 5.5%, a solid investment that compares favorably with other long-term investments in both the private and public sectors.



TABLE 2. SUMMARY OF INVESTMENT ANALYSIS RESULTS

STUDENT PERSPECTIVE	
\$216,677	Benefits (thousands)
\$33,125	Costs (thousands)
\$183,552	Net present value (thousands)
6.5	Benefit-cost ratio
27.2%	Rate of return

SOCIAL PERSPECTIVE	
\$578,575	Benefits (thousands)
\$59,056	Costs (thousands)
\$519,520	Net present value (thousands)
9.8	Benefit-cost ratio
NA	Rate of return*

TAXPAYER PERSPECTIVE	
\$45,785	Benefits (thousands)
\$23,906	Costs (thousands)
\$21,878	Net present value (thousands)
1.9	Benefit-cost ratio
5.5%	Rate of return

\* The rate of return is not reported for the social perspective because the beneficiaries of the investment are not necessarily the same as the original investors.

## SUMMARY OF INVESTMENT ANALYSIS RESULTS

Table 2 presents the results of the investment analysis for all three of NPC’s major stakeholder groups—students, society, and taxpayers. As shown, students receive great value for their educational investment. At the same time, the investment made by state and local taxpayers in the college creates a wide range of benefits to society and returns more to government budgets than it costs.



# CONCLUSION



The results of this study demonstrate that NPC creates value from multiple perspectives. The college benefits local businesses by increasing consumer spending in the region and supplying a steady flow of qualified, trained workers into the workforce. It enriches the lives of students by raising their lifetime incomes and helping them achieve their individual potential. It benefits society as a whole in Arizona by creating a more prosperous economy and generating a variety of savings through the improved lifestyles of students. Finally, it benefits state and local taxpayers through increased tax receipts across the state and a reduced demand for government-supported social services.

## ABOUT THE STUDY

Data and assumptions used in the study are based on several sources, including the 2013-14 academic and financial reports from the college, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of EMSI's Social Accounting Matrix (SAM) model, and a variety of studies and surveys relating education to social behavior. The study applies a conservative methodology and follows standard practice using only the most recognized indicators of investment effectiveness and economic impact. For a full description of the data and approach used in the study, please contact the college for a copy of the technical report.

## ABOUT EMSI

Economic Modeling Specialists International, a CareerBuilder company, is a leading provider of economic impact studies and labor market data to educational institutions, workforce planners, and regional developers in the U.S. and internationally. Since 2000, EMSI has completed over 1,200 economic impact studies for educational institutions in four countries. Visit [www.economicmodeling.com](http://www.economicmodeling.com) for more information about EMSI's products and services.



# FACT SHEET

## Demonstrating the Economic Value of Northland Pioneer College

FEBRUARY 2015

*Northland Pioneer College (NPC) creates a significant positive impact on the business community and generates a return on investment to its major stakeholder groups—students, society, and taxpayers. Using a two-pronged approach that involves an economic impact analysis and an investment analysis, the study calculates the benefits to each of these groups. Results of the analysis reflect Fiscal Year (FY) 2013-14.*

### INCOME CREATED BY NPC IN FY 2013-14 (ADDED INCOME)

**\$17.6 MILLION**

Operations spending impact

**\$75.4 THOUSAND**

Impact of student spending

**\$204.7 MILLION**

Alumni impact

**\$222.4 MILLION**

Total impact

### IMPACT ON BUSINESS COMMUNITY

During the analysis year, NPC and its students added **\$222.4 MILLION** in income to the Navajo County economy, approximately equal to **9.6%** of the Gross Regional Product. The economic impacts of NPC break down as follows:

#### Operations spending impact

- NPC employed 553 full-time and part-time employees in FY 2013-14. Payroll amounted to **\$17.2 MILLION**, much of which was spent in Navajo County to purchase groceries, clothing, and other household goods and services. The college spent another **\$11 MILLION** to support its day-to-day operations.
- The net impact of college payroll and expenses in Navajo County during the analysis year was approximately **\$17.6 MILLION** in added income.

#### Impact of student spending

- Around 20% of students attending NPC originated from outside the county. Some of these students relocated to Navajo County and spent money on groceries, transportation, rent, and so on at county businesses.
- The expenditures of students who relocated to the region during the analysis year added approximately **\$75.4 THOUSAND** in income to the economy.

#### Alumni impact

- Over the years, students have studied at NPC and entered or re-entered the workforce with newly-acquired skills. Today, thousands of these former students are employed in Navajo County.
- The accumulated contribution of former students currently employed in the regional workforce amounted to **\$204.7 MILLION** in added income during the analysis year.

JOB EQUIVALENTS BASED ON INCOME

Job equivalents are a measure of the average-wage jobs that a given amount of income can potentially support. They are calculated by dividing income by the average income per worker in the region. Based on the added income created by NPC, the job equivalents are as follows:

Operations spending impact = **472** job equivalents

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Alumni impact = **5,481** job equivalents

Overall, the added income created by NPC and its students supported **5,955** job equivalents.

FOR EVERY \$1 SPENT BY...

STUDENTS	<div>\$6.50</div> <div>Gained in lifetime income for STUDENTS</div>
SOCIETY	<div>\$9.80</div> <div>Gained in added state income and social savings for SOCIETY</div>
TAXPAYERS	<div>\$1.90</div> <div>Gained in added taxes and public sector savings for TAXPAYERS</div>



RETURN ON INVESTMENT TO STUDENTS, SOCIETY, AND TAXPAYERS

Student perspective

- NPC’s 2013-14 students paid a total of **\$2.5 MILLION** to cover the cost of tuition, fees, books, and supplies. They also forwent **\$28.4 MILLION** in money that they would have earned had they been working instead of learning.
- In return for the monies invested in the college, students will receive a present value of **\$216.7 MILLION** in increased earnings over their working lives. This translates to a return of **\$6.50** in higher future income for every \$1 that students invest in their education. The average annual return for students is **27.2%**.

Social perspective

- Society as a whole in Arizona will receive a present value of **\$567.2 MILLION** in added state income over the course of the students’ working lives. Society will also benefit from **\$11.4 MILLION** in present value social savings related to reduced crime, lower unemployment, and increased health and well-being across the state.
- For every dollar that society spent on NPC educations during the analysis year, society will receive a cumulative value of **\$9.80** in benefits, for as long as the 2013-14 student population at NPC remains active in the state workforce.

Taxpayer perspective

- In FY 2013-14, state and local taxpayers in Arizona paid **\$23.9 MILLION** to support the operations of NPC. The net present value of the added tax revenue stemming from the students’ higher lifetime incomes and the increased output of businesses amounts to **\$41.4 MILLION** in benefits to taxpayers. Savings to the public sector add another **\$4.4 MILLION** in benefits due to a reduced demand for government-funded services in Arizona.
- Dividing benefits to taxpayers by the associated costs yields a **1.9** benefit-cost ratio, i.e., every \$1 in costs returns \$1.90 in benefits. The average annual return on investment for taxpayers is **5.5%**.

# RETURN ON INVESTMENT TO SOCIETY

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*Benefits created by NPC extend to far more people than just its students. As students and employers enjoy higher income and increased output, society as a whole benefits from an expanded economy and a range of savings associated with the students' improved quality of life.*

## NPC RAISES PROSPERITY IN THE STATE

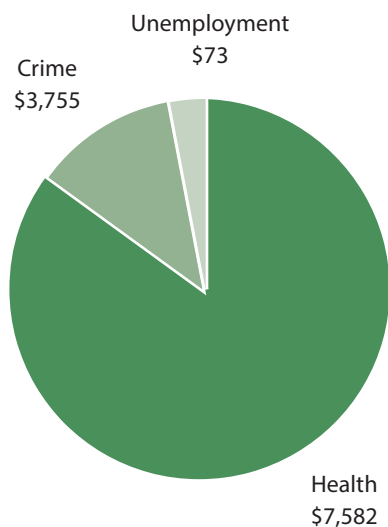
- Students earn more because of the skills and qualifications they acquire at NPC. Further, employers earn more because the added skills of the students they hire make their businesses more productive.
- Together, increases in earnings and business output stimulate corresponding increases in income and employment throughout the state. Over their working lives, NPC's 2013-14 student population will generate a present value of **\$567.2 MILLION** in added income in the state of Arizona.

## NPC IMPROVES QUALITY OF LIFE

- As NPC students achieve higher levels of education, they are statistically more likely to develop good health habits. This leads to a present value of **\$7.6 MILLION** in savings to students and to society as a whole for medical treatment related to smoking, alcoholism, obesity, drug abuse, and mental disorders.



## PRESENT VALUE OF SOCIAL SAVINGS (THOUSANDS)



- Students enjoy better employment opportunities as a result of their education at NPC. This makes them less likely to require income assistance and less likely to commit crimes. These effects translate to a present value of **\$73,482** in unemployment-related savings and **\$3.8 MILLION** in law enforcement savings to society as a whole.
- Altogether, savings to society amount to a present value of \$11.4 million, equal to the sum of avoided costs related to health, crime, and unemployment.



## BENEFITS TO SOCIETY OUTWEIGH SOCIAL COSTS

- In FY 2013-14, society invested **\$59.1 MILLION** in NPC educations. This includes all NPC expenditures, all student expenditures, and all student opportunity costs. In return for this investment, society as a whole will receive a present value of **\$578.6 MILLION** in benefits, the sum of the added income and social savings that NPC's 2013-14 student population will generate in the state.
- For every dollar spent on NPC educations, society as a whole in Arizona will receive a cumulative value of **\$9.80** in benefits, for as long as NPC's 2013-14 students remain active in the state workforce.

# RETURN ON INVESTMENT TO STUDENTS

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*Education has the power to raise students' earning potential and increase their employability. In return for their investment in education, NPC's 2013-14 students will receive higher wages that will continue to grow throughout their working lives.*

## EDUCATION MAKES A DIFFERENCE IN PEOPLE'S LIVES

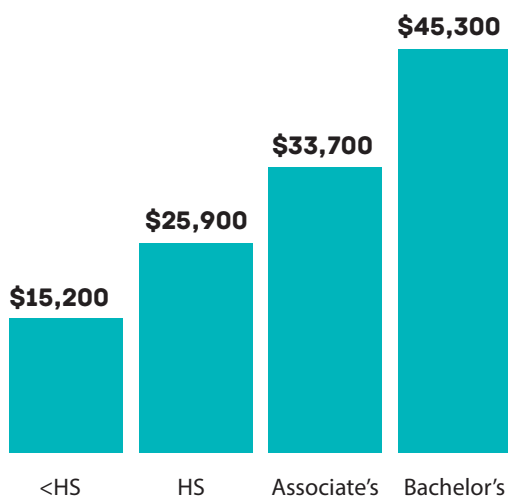
- NPC provides an environment for students to learn the skills they need to gain and maintain productive employment.
- The training and credentials that students acquire at the college increases their earning potential and help put them on the path to fulfilling and prosperous careers.

## EDUCATION RETURNS VALUE FOR MONEY SPENT

- To meet the costs of going to college, students rely on their own earnings or on the earnings of their families. At NPC, students paid a total of **\$2.5 MILLION** in FY 2013-14 to cover the cost of tuition, fees, books, and supplies.
- While at college, students spend time focusing on their studies, time they would have otherwise spent in employment or with their families and friends. For NPC students, the value of time and earnings forgone was estimated to be **\$28.4 MILLION** (less offsetting monies received from residual aid).



## ANNUAL INCOME BY EDUCATION LEVEL AT CAREER MIDPOINT IN NAVAJO COUNTY



- In return for the costs of going to college, students will receive a stream of higher lifetime income. These income gains will fully recover the money that students invested and will continue to grow throughout the students' working lives.

## EDUCATION INCREASES PEOPLE'S EARNING POTENTIAL

- Average annual incomes increase as students attain higher levels of education. On average, associate's degree completers in Navajo County will earn \$33,700 at the midpoint of their careers, **\$7,800** more than someone with a high school diploma.
- Associate's degree completers will earn **\$1,179,500** (undiscounted) over their working lifetime, an increase of \$273,000 compared to someone with a high school diploma.

## EDUCATION IS ONE OF THE BEST INVESTMENTS STUDENTS AND THEIR FAMILIES CAN MAKE

- NPC's 2013-14 students will receive an average annual rate of return of **27.2%** on their investment in the college. This rate of return continues throughout their working lives.
- Had students and their families taken the money they spent on education and invested it instead in a standard bank savings account, they would have received a rate of return of less than 1%.
- On average, NPC's 2013-14 students will receive a cumulative **\$6.50** in higher future income for every \$1 they invested in their education.



# RETURN ON INVESTMENT TO TAXPAYERS

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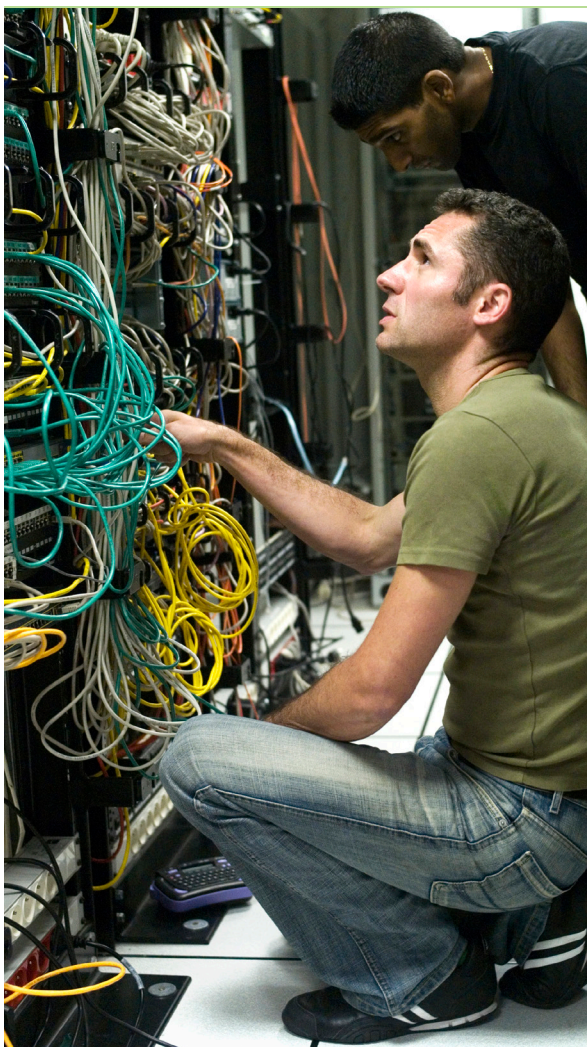
*Students and society as a whole enjoy a range of benefits due to their educational investment in NPC. A portion of these benefits accrues to state and local taxpayers in the form of higher tax receipts and a reduced demand for government-supported social services.*

## NPC INCREASES TAX REVENUE

- Approximately **100%** of NPC's students remain in Arizona upon completing their educational goals. As students earn more, they pay higher taxes. Employers also pay higher taxes through their increased output and spending.
- Over the students' working lives, state and local government in Arizona will collect a present value of **\$41.4 MILLION** in the form of higher tax receipts.

## NPC REDUCES GOVERNMENT COSTS

- NPC students who achieve higher levels of education are statistically less likely to have poor health habits, commit crimes, or claim welfare or unemployment benefits.
- The improved lifestyles of students result in a reduced demand for government-supported services. Better health leads to reduced health care costs. Reduced crime leads to a reduced burden on the criminal justice system. Further, increased employability leads to fewer claims for welfare and unemployment benefits.



- As a result, taxpayers in the state of Arizona will see a present value of **\$4.4 MILLION** in savings to government over the students' working careers.

## NPC IS A SOLID INVESTMENT FOR STATE AND LOCAL TAXPAYERS

- In FY 2013-14, state and local taxpayers in Arizona paid **\$23.9 MILLION** to support the operations of NPC.
- For every \$1 of public money spent on NPC, taxpayers receive a cumulative return of **\$1.90** over the course of students' working lives in the form of higher tax receipts and public sector savings.
- Taxpayers see an annual return of **5.5%** on their investment in NPC. This return compares favorably with the 1.1% discount rate used by the federal government to appraise long-term investments.

### COMPARING TAXPAYER RATE OF RETURN TO DISCOUNT RATE

