NORTHERN ARIZONA UNIVERSITY
The W. A. Franke College of Business

Contributions and Impact of Coconino County Accommodation School District #99

by

The Arizona Rural Policy Institute

A Unit of the Alliance Bank Business Outreach Center

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Executive Summary

This document estimates the economic value that Coconino County Accommodation School District #99 (CCASD) provides to Coconino County through three sources – budget impacts, the economic advantages of graduation, and a reduced burden on the criminal justice system. The primary economic impact stems from the district's budget, which in 2012 directly injected nearly $3 million into the local economy. This budget affects the community beyond the expenses of the district – that year it stimulated almost $800,000 in incremental economic activity through the economic multiplier effect. It also increases local jobs – in addition to about 25 employees of CCASD, the budget supported an estimated 39 local jobs in 2012. Based on budget alone, this study suggests that every dollar spent by the districts generates $1.27 in economic activity.

This study also analyzes the increase in earning potential afforded by a high school diploma (when comparing graduates with non-graduates), which is estimated at about $9,000 annually. Expanding this figure to CCASD's average annual graduate cohort (89) and the total number of graduates produced by the district's two high schools (799) suggests the following:

- The increased earning power achieved by each graduating class is $801,000 annually and $37.7 million by retirement.
- The increased earning power achieved by all graduates of the district from 2004 to 2012 is $7.2 million annually and $338.1 million by retirement.
- The increased spending power of one graduating class supports four jobs and $425,000 in economic activity annually.
- The increased spending power of all graduates from 2004 to 2012 supports 36 jobs and $3.8 million in economic activity annually.

If the lifetime incremental earning potential of the average annual graduate cohort is included, this return rises to approximately $14.60 for every dollar spent.

The district also operates several types of incarceration education – opportunities for imprisoned and recently-released youth to stay current with their schooling. In addition to a decreased chance of non-recidivism, students of these programs are more likely to earn high school diplomas.

The benefits of education and avoiding criminal behavior are countless and unquantifiable, but from a public policy perspective, cost savings are important. This report estimates that approximately $28,000 annually is saved by the jail facilities as a result of reduced incarceration attributed to the accommodation schools and the detention education programs.

When all annual effects are considered, the value of one dollar spent by the district is approximately $1.70 in economic activity. If the lifetime incremental earning potential of the average annual graduate cohort is included, this return rises to approximately $14.60 for every dollar spent.

Introduction

Coconino County Accommodation School District #99 (CCASD) meets the unique needs of a student population that faces difficulty attaining a traditional high school education. Each year, hundreds of young people attend classes and work to complete their high school diplomas by taking advantage of the CCASD's programs.

This study will analyze the district budget as well as the following programs and entities, operated by CCASD:

- *Ponderosa High School and Tse' Yaato' High School* – These are non-traditional, accredited schools offering small class sizes, hands-on instruction, and highly-qualified teachers in a supportive environment. They make accommodations for students who require flexibility in their education schedules.
- *Coconino County Juvenile Detention Education Program, Coconino County Juvenile Detention Center Transition School,* and *Coconino County Jail Education* – These are detention education programs located in or near detention facilities in Flagstaff. Youth who are incarcerated often suffer damaging gaps in their educational progress. These programs provide highly-qualified, accredited teachers and appropriate coursework so institutionalized and recently released students may keep current in the curriculum of their home schools.

As an investment in the future of the county's young people, these programs are a proven success. The district offers a life line – often a final opportunity – to those most at risk of dropping out of school. But from a policy standpoint, they also create a demonstrable financial return.

This budget analysis is broken into two parts – employment and output.

The Economic Impact of the FY2012 Budget

The CCASD district's annual budget of around $3 million makes a measurable contribution to the local economy. Budgets were provided by the CCASD's business manager and analyzed using IMPLAN, a nationally-recognized input-output software program that estimates the effects of a given level of defined spending within a specific area. IMPLAN uses regional tradeflow data and annual government reports to produce accurate estimates of how money changes hands within the economy.

This budget analysis is broken into two parts – employment and output. Employment includes employees of the district, the jobs supported by its local purchases, and the jobs supported by increased household income. Output includes the district's expenses and the additional local spending stimulated by them.

Employment

The district employs the equivalent of 20 full-time (FTE) workers with a payroll of approximately $1.3 million. Its non-payroll expenses, mostly payments to Flagstaff Unified School District #1 and Page Unified School District #8 for student transportation, support an estimated 33 jobs (approximately 30 FTE). In addition to transportation, the budget spends over $300,000 on other aspects of operations. All of this operational spending (transportation included), when local, supports local jobs.

These workers, approximately 58 (33 plus the CCASD FTE figure converted to an estimated 25 total jobs), spend much of their earnings within the county. As they purchase goods and services from local businesses, the demand leads to more local hiring; this is called the induced effect. According to IMPLAN estimates, this household spending likely supports an additional six jobs within the county - this means the budget supports sixty-four total jobs.

Table 1 below lists these estimated job numbers, as well as the total labor income the employees receive.

Table 1: Employment impact of 2012 Budget

	Jobs	FTE*	Labor Income**
CCSD99	25***	20	$ 1,300,000
Non-payroll	33	30	$ 622,000
Induced	6	5	$ 200,000
Total	**64**	**55**	**$ 2,122,000**

* IMPLAN does not estimate employment in terms of FTE. Rather, it reports all jobs, both full and part time, that are supported by a set amount of labor income during a year. Figures in the FTE column have been adjusted to reflect what the employment equivalent would be in full-time jobs.

** Labor Income is the full cost of an employee, including all taxes, benefits, and withholdings. These numbers have been rounded to reinforce the fact that they are estimates.

*** The Jobs column for CCSD99 is an estimate based on the provided FTE figure of 20.

The labor income listed in Table 1 is explained in the same manner as the job numbers. CCASD has a payroll of approximately $1.3 million. The suppliers and service providers from which the district makes purchases have combined payrolls (the portion supported by CCASD spending) of over $622,000. When the employees of the district and its suppliers make household purchases, the induced effects stimulate an additional $200,000 in payroll. Overall, CCASD's budget leads to an estimated $2.1 million in labor income.

Output

The budget effects extend beyond employment. Economic activity is measured as dollars flow from the district budget to the other school districts and local businesses. These entities, in turn, spend some of that money at other local businesses. Beyond additional hiring, the

businesses spend further, on necessities such as increased inventory, structural improvements, debt payments, savings, or investments. When these payments are made locally they increase the wealth and spending power of even more businesses.

In economic terms this spending is called output. Beyond the $1.3 million district payroll, direct output is $1.6 million. The institutions and companies that receive these payments (suppliers) then make local purchases of over $112,000. The household wealth supported by wages in these industries and institutions leads to additional local spending of $679,000. Including the payroll, the budget stimulates an estimated $3.7 million in local output. Figure 1 charts the total impact of the 2012 budget.

Total impact is essentially 127% of the budget. This suggests that for every dollar spent by CCASD, $1.27 is circulated throughout the economy.

Figure 1: Total Economic Impact of CCASD 99 Budget, FY2012

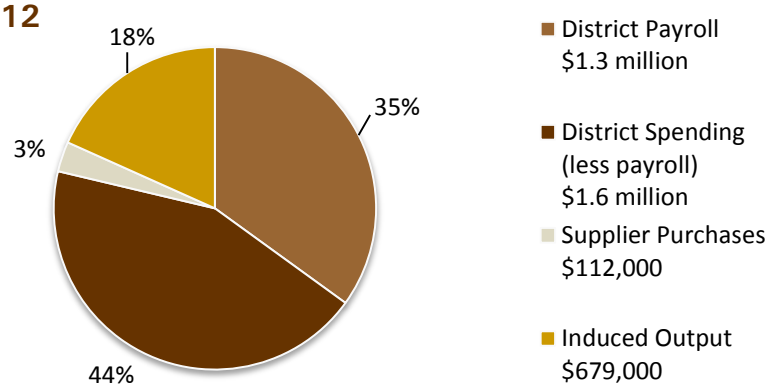

Table 2: Wage Differential Calculation

Median Annual Wage Differential*		
High School Graduate	**Non-Graduate**	**Differential**
$26,614	$17,610	$9,004

* IMPLAN *Median wages for workers age 25+ in Coconino County. Wages for ages 18 -25 were unavailable, but this document assumes that this differential will be acceptable for estimates.

The Economic Benefits of High School Diplomas

The previous analysis quantified the effects of one year of district operations. This section will explain how educational success creates a perpetual return in the form of increased personal income, and the accompanying tax and local economic benefits. The increased earning power available to high school graduates adds up significantly over the course of a working life. According to the United States Census Bureau, high school graduates in Coconino County earn about $9,000 more annually than non-graduates.[1] These calculations are shown in Table 2. As this is a median wage differential, it is expanded without discounting to estimate total lifetime earnings, assuming no significant changes in real dollar value.

Over the course of a working life (47 years between 18 and 65), this difference in earning potential would rise to approximately $423,188.

High Schools

Crediting CCASD with these differential earnings requires the assumption that no students would attain a diploma without the district's help. As this is certainly not the case, the following calculation should be considered a contribution of the district. Like the operational costs, these numbers represent the district's contributions to the economy, but not necessarily a net impact.

Conversely, the estimates might be considered conservative. According to staff, many graduates pursue post-secondary education. The earnings differentials between high school graduates and those who attend college – even without earning degrees – are substantial. Because no data is available to indicate how many graduates pursue further education, this study will not calculate those earnings, but they would increase the overall impact significantly.

Table 3: Wage Differential Calculations

Wage Differentials, Average Annual Graduates

Annually	Graduates, Annual Average	Total
$9,004	89	$801,356
Working Life	**Graduates, 2004 – 2012**	**Total**
$423,188	89	$37,663,732

Table 4: Wage Differential Calculations

Wage Differentials, All Graduates

Annually	Graduates, Annual Average	Total
$9,004	799	$7,194,196
Working Life	**Graduates, 2004 – 2012**	**Total**
$423,188	799	$338,127,212

Since 2004, Ponderosa High School has graduate 500 students, and Tse' Yatto' has graduated 299. To estimate the increased earnings these graduates receive each year, an annual average of 89 was used (799 total over 9 years = 89 annually). As Table 3 shows, the total annual earnings differential for the average graduating class would be $801,356. If these graduates work until they are 65 years old, that differential will reach nearly $38 million.

Applying the same calculations to the total of 799 graduates yields potential earnings increases of $7.2 million annually and $338 million over 47 years. Table 4 shows these calculations.

Taxes

Table 5 estimates the state income taxes that would be paid on the incremental earnings of the entire population of graduates over the course of one year. A state income tax rate of 3.36%[2] was applied to the incremental annual earnings calculated above. This indicates that over the course of a year, these graduates would be paying $261,000 in state taxes that they wouldn't have paid if they had not earned a diploma.

Table 5: Estimated State Taxes Paid on Incremental Earnings

Estimate of Incremental State Taxes Paid Annually				
Incremental Earnings	Tax Rate	Annual Incremental Tax Paid	Total Graduates	Total Incremental Personal Income Tax Paid
$ 9,724	3.36%	$ 327	799	$ 261,054

Wage Analysis

The annual impact of these wage increases ($801,000 for each class; $7.2 million for all graduates) was also analyzed using IMPLAN. As with the budget analysis, the program was used to estimate employment, labor income, and output that result from incremental spending. Table 6 displays the results.

One average graduating class creates four jobs, $137,700 in labor income, and $425,053 in output. The earnings of all 799 graduates to date would create 36 jobs, $1.2 million in labor income, and $3.8 million in total output each year.

Table 6: Impacts of Annual Increased Graduate Earnings

	Employment	Labor Income	Output
Average Class (89)	4	$ 136,700	$ 425,053
All Classes (799)	36	$ 1,227,231	$ 3,815,930

The wage and tax estimates are a reasonable assumption of impact. However, it should be made clear that these impacts are only local to the degree that graduates remain within Coconino County.

Jail and Juvenile Detention Programs

The third contribution provided by CCASD is detention education – opportunities for students who face a disrupted education path due to legal troubles. The juvenile and jail education programs provide incarcerated and recently released students the opportunity to actively continue their schooling. They offer courses of study that facilitate an easier transition when students return to their home schools.

Each year, these programs provide around 200 young people a stronger chance of completing high school. Success rates were unavailable, but many formerly incarcerated students are able to graduate thanks to one of these programs. In addition to the earning potential mentioned above ($9,004 annually), graduates enjoy lower unemployment rates

Table 7:
Estimates of Annual Savings to Local Jails

Reduced Incarceration Among Graduates of Accommodation Schools	
Average Annual Graduates	89
Graduate Incarceration Rate	1%
Dropout Incarceration Rate	6.3%
Change in Incarceration Rate	-5.3%
Change in Incarceration Numbers	-4.7
Reduced Incarceration Among Former Inmates Receiving Education	
Estimated Number of Inmates Receiving Services Annually	200
Standard Recidivism Rate	31%
Recidivism Rate After Education	21%
Change in Recidivism Rate	-10%
Change in Incarceration Numbers	-20
Estimated Cost Savings Associated with Educational Opportunities	
Total Estimated Reduction	24.7
Estimated Days Per Incarceration	13.5
Total Inmate Days Avoided	334
Estimated Daily Cost of Incarceration	$ 85
Total Costs Avoided	**$ 28,390**

(8.3% vs. 12.4%[3]) than dropouts, and are less likely to end up back in custody (1.0% vs. 6.3%)[4].

Society benefits from these programs as well – a 2001 study of prison inmates suggests that education can reduce re-arrests by 16%, re-convictions by 23%, and re-incarcerations by 32%[5]. A lower likelihood of return translates to reduced government costs for arrest, trial, and imprisonment.

All these reports were used to formulate an estimate of annual cost savings associated with reduced jail time. Table 7 shows these calculations, which use a daily incarceration cost of $85, as estimated by Coconino County Jail staff, and an average stay of 13.5 days, as reported by the Arizona Supreme Court's Juvenile Justice Services Division[6]. The calculations indicate that over $28,000 annually might be saved through detention education programs.

Summary

The value of the Coconino County Accommodation School District lies primarily in the priceless benefits that are afforded by education. However, with already scarce funding sources becoming rarer, it is important to realize that a significant and measurable impact occurs when public monies are spent on these programs.

As noted above, every dollar of budget alone stimulates $1.27 in local economic impact. Expanding this calculation to reflect all of the previously quantified benefits raises that return to $1.70. This includes the following assumptions.

- Jail Cost Savings - $28,390
- Increased Earnings of Average Class - $801,356
- Induced Output form Average Class Spending - $425,053
- Payroll - $1,298,065
- District Spending, Less Payroll - $1,622,516
- Indirect Output - $111,523
- Induced Output - $678,965
- **Total – $4,964,478**

Taking this concept one step further, and considering lifetime earning potential, provides a much bigger number. As calculated earlier, the total incremental lifetime earnings of an average class would be approximately $37.7 million. If this earning potential were considered a return attributable to CCASD, the overall effect would rise to $42.6 million, or $14.60 for every $1 spent.

The value of the Coconino County Accommodation School District lies primarily in the priceless benefits that are afforded by education.

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End Notes

[1] American Factfinder. United States Census Bureau. U. S. Department of Commerce. <Factfinder2.census.gov>

[2] The average wage of a high school graduate in Coconino County, according to the US Census Bureau, is $26,614. The state of Arizona applies a 3.36% tax rate to incomes between $25,000 and $50,000.

[3] "Earnings and Unemployment Rates by Educational Attainment." Bureau of Labor Statistics, United States Department of Labor, Current Population Survey, 2012.

[4] Sum, Andrew; Khatiwada, Ishwar; and McLaughlin, Joseph. "The Consequences of Dropping Out of High School: Joblessness and Jailing for High School Dropouts and the High Cost for Taxpayers. Center for Labor Market Studies Northeastern University. October 1, 2009.

[5] Steurer, Stephen; Smith, Linda; and Tracy, Alice. "Three State Recidivism Study." Office of Correctional Education. United States Department of Education. Correctional Education Association. Lanham, MD. September 20, 2001.

[6] *Detention Education*. Juvenile Justice Services Division, Arizona Judicial Branch. The Supreme Court of Arizona. 2012. <www.azcourts.gov/jjsd/CorrectionalEducation//DetentionEducation.aspx> Retrieved June1, 2013.