

**The Economic Impact
Of
Minnesota State Colleges
And Universities**

Updated Statewide and
Local Estimates
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Prepared for the
Minnesota State College and University System by

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Executive Summary

Statewide Impact of System Operations

The total statewide economic impact of Minnesota State Colleges and Universities in 2002 was over \$3.0 billion as measured by estimates of direct and induced spending as well as the enhanced productivity of the state's labor force.

The enhanced productivity of graduates of degree programs and training programs offered by Minnesota State Colleges and Universities contributes over \$2 billion to the Minnesota economy each year, a figure equal to about 2 percent of the total wages paid in the state.

When compared to estimated net state spending, the annual economic benefits returned to Minnesota by the system amount to \$6.14 for every dollar spent.

The increased productivity of Minnesota workers was the most important source of the system's impact on the state's economy. The impact of net spending by the state was distributed as follows:

These estimates are in line with other studies. A recent survey of impact studies conducted by the National Association of State Universities and Land-Grant Colleges recently said that, on average, those universities return \$5 for every state dollar invested. Those different studies considered somewhat different factors than this study and did not try to quantify the impact of colleges on labor productivity as is done here.

Local Economic Impacts of Minnesota State Colleges and Universities

Revised estimates of the impact of the system's two-year and four-year institutions on their local economies were also produced.

The local estimates included the impact of student spending in the community, a factor not included in statewide estimates because such spending is considered a redistribution within the state.

The estimates for four-year institutions include an estimate of visitor spending but the estimates for two-year institutions do not. Sufficient data to make estimates of visitor spending at two-year schools are not available.

The estimates of local economic impact do not include a measure of the enhanced productivity of the local labor force similar to the measure used for in the statewide impact estimates for the entire system because it not feasible to make a similar calculation at the local level. So these estimates understate the local impact of system institutions, especially of the two-year schools.

Higher multipliers were used in the estimates for Twin Cities area schools based on government figures that show that more of the succeeding rounds of spending generated by university expenditures are captured inside the Metropolitan area.

In general, four-year universities are estimated to have the largest impacts on local areas, The largest estimated impacts for universities are \$390 million for Saint Cloud State and \$303 million for Minnesota State University – Mankato.

Estimates of the local economic impact of the community colleges in the system ranged from \$17 million per year to \$127 million with Normandale Community College having the largest impact.

Estimates for combined community and technical colleges covered a wide range of economic impact. Century College is estimated to have the greatest local impact at \$139 million, followed closely by Minneapolis Community and Technical College at \$129 million.

Among the technical colleges, Hennepin Technical College is estimated to have the highest local impact at \$149 million.

I. Introduction

The study has two objectives:

First, it provides updated estimates of the statewide economic impact of the operations of the Minnesota State College and University system based on the most recent financial data for a complete school year (FY 2002). Two previous studies have used data from fiscal years 1997 and 2001.

Second, it provides estimates of the local economic impact of the Minnesota state colleges and universities. These estimates are based on FY 2002 spending and enrollment. In addition, a number of institutions chose to request more detailed studies of their impact. For these institutions, a survey of student spending was done in order to estimate their overall economic impact more accurately. The surveying also made it possible to provide campus-by-campus estimates for multi-campus institutions.

II. Statewide Impact of Operations

The method used to estimate the statewide impact of system operations was identical to that used in the earlier study. Since the method was explained in detail there, only a brief description is offered here. There are three elements of the economic impact of colleges and universities: direct spending, induced spending, and enhanced labor productivity. Each will be discussed in turn.

Direct Spending

The first element of the economic impact of the system is the direct spending of the system and its employees within the state of Minnesota. The largest component of system spending is its *payroll expenses*, which totaled over \$839 million in fiscal year 2002. However, not all of that spending is injected into the Minnesota economy. As in the previous study, adjustments were made to deduct financial fringe benefits and taxes from that amount. An additional minor adjustment was made to reflect the fact that some campuses are located near a state border. The final figure of \$341 million is our estimate of the amount of in-state spending on goods and services by employees of Minnesota's state colleges and universities.

A second component of direct spending is the system's expenditures for *purchased services*. This spending includes the purchase of local utility services such as energy, sewer, and water. It also includes certain kinds of contract services provided by local vendors. In the fiscal year 2002, these expenses total just over \$175.3 million. A small adjustment was made for cross-border spending. Total in-state spending on services was estimated as \$172.9 million.

Another component of direct spending is *purchases of supplies* used during the course of the year. Not all of the supplies purchased by the system and its separate institutions come from in-state vendors, so an adjustment was made to account for out-of-state purchases. In fiscal 2002, the total expenditure on supplies was \$63.9 million. Based on the previous study, roughly 87 per cent of supplies were assumed to be purchased in Minnesota. This resulted in a figure of \$55.6 million as the estimate of in-state spending on supplies. Taken together, these three components produced total direct spending in Minnesota of \$569.1 million in fiscal 2002.

Induced Spending

The second element of the economic impact of the state college and university system is the induced spending that takes place in the state as result of the system's direct spending. This quantity reflects the fact that when the state colleges or their employees spend money in the state there is a ripple effect of spending by other parties and people. When employees purchase groceries or goods, businesses in the state have higher sales and have higher profits or pay more in salaries to additional workers. Likewise, when the system buys supplies or services. Then the owners and/or the workers at those businesses purchase additional goods and services from local businesses. The additional sales from this second round of spending bring forward a third round of spending and so on. Since some income is saved or diverted, each successive round of spending is smaller than the last but the total spending continues to grow. The sum of these successive rounds of spending is finite. In this study, it was assumed that these successive rounds added a total another 80 cents of spending to each dollar spent initially.

Economists summarize the total effects of these additional rounds of spending in a single number termed a multiplier. The multiplier is defined as the ratio of total spending to the first round of direct spending. There is no very precise way to estimate the appropriate multiplier for different types of spending on different areas and economic studies of different regions have used different multipliers. For this study, a multiplier of 1.8 was used. This multiplier is somewhat conservative but within the reasonable range of multipliers that have been used in similar studies. Using this multiplier means that the additional rounds of spending contributed another 80 cents

for each dollar of direct spending in the first round. This additional spending is called induced spending.

Enhanced Productivity

The third element of the economic impact of the Minnesota State Colleges and Universities is the enhanced productivity of the Minnesota workforce as a result of the system's operations. This is the largest and most profound economic effect that the system has on the state's economy.

Through training its students, the system enhances the productivity of both public and private enterprises in Minnesota. In both sectors, these former students of state colleges and universities do not make just a one-time addition to the state's economy; they continue to contribute throughout their working lives.

Since performing a direct measurement of the contribution of system graduates to Minnesota businesses and governments is not feasible, we chose to estimate this concept indirectly by estimating the additional earnings of system graduates as a result of their training. This estimate was constructed in three steps.¹

First, the numbers of graduates from four-year colleges, two-year colleges, and technical colleges were estimated using historical graduation data, the percentages of graduates who stay in the state, and assumptions about working lives and labor force participation. Second, data on earnings by educational attainment were used to estimate the additional wages earned by the

¹ For additional detail on these estimates, please refer to the Appendix that includes sections of the 1998 report.

different groups of graduates. The numbers of graduates were multiplied by their additional earnings to get the added earnings for the entire group.

However, an additional step was needed to avoid overstating the impact of these workers on the labor force. The first two steps would be all that is needed if it were known that 100 percent of system graduates working in Minnesota would not have received equivalent training in the absence of the state college and university system. That clearly overstates the case because many of them would have gone to other colleges or might have received private technical training if the state schools were not available. On the other hand, it is reasonable to assume that a good number of those graduates might not have been able to attend college or technical school if the state were not covered as it is with institutions that offer quality education and training at relatively affordable tuition rates. Therefore, the total contribution figure was multiplied by 40 per cent, under the assumption that somewhat less than half of those workers would not have received similar training in the absence of the Minnesota State College and University system.

Economic Impact from Operations

The total annual economic impact of the ongoing operations of the system is estimated to be \$3,098,000,000 in 2002 dollars as shown in Table 1 below.

Table 1
Annual Statewide Economic Impact
Of System Operations
(in 2002 \$ per year)

Direct impact		
• Spending by faculty and staff	\$341 million	
• Purchased services	\$173 million	
• Purchased supplies	<u>\$ 55 million</u>	
		\$ 569 million
Induced impact		
• Additional activity		\$ 455 million
Enhanced productivity of Mn workforce		<u>\$2,074 million</u>
	TOTAL IMPACT	\$3,098 million

The direct effect of system spending is \$569 million, comprised of non-housing spending of employees and the system's expenditures on purchased services and supplies. The indirect effect of that spending is induced spending of additional \$455 million in the state. The largest effect is the increased productivity of the Minnesota workforce contributed by system graduates. That effect is estimated to be \$2.074 billion as measured in 2002 dollars.

Comparison to State Spending

Additional perspective can be gained by comparing this benefit to the state with Minnesota's actual spending of tax dollars to support the state college and university system. Such a comparison would show the dollars of economic benefit the state receives for every dollar the state invests in the state college and university system.

One approach is to compare total impact to gross state spending. We feel that a more accurate approach is to divide total impact by the net state appropriation. The net state appropriation is calculated by starting with the gross state budget appropriation for the system from the state general fund. In fiscal 2002 that figure was just slightly more than \$602 million. Adding state capital expenditures on system projects and debt service for system-related projects increases that number. Then the number is reduced by subtracting the estimated state income taxes and sales taxes paid by system employees and the additional income taxes and sales taxes paid system graduates as a result of their higher earnings. When these adjustments are made, the net state spending on Minnesota state colleges and universities for fiscal 2002 is estimated to be \$504.7 million.

By dividing total economic impact by net state spending, we estimate that Minnesota receives \$6.14 of impact for each dollar of net spending on the state college and university system as shown in Table 2 below.

Table 2
Comparison of Economic Impact of System Operations
To Net State Appropriation

Economic impact	\$3,098 million
Net state appropriation	\$ 504.7 million
Ratio (\$ of economic impact per \$ of net appropriation)	\$6.14

This \$6.14 figure is similar to the benefit/cost ratios that are often calculated for prospective public spending projects to help policymakers form spending priorities and decide among competing projects. A ratio greater than 1 indicates there is a net benefit to the public from undertaking a particular investment. The higher the ratio the greater the return. Table 3 below enumerates the composition of the return to Minnesota from the state college and university system..

Table 3
Composition of Economic Impact
per Dollar of Net State Appropriation

Enhanced productivity of Mn workforce	\$4.11
Spending by faculty and staff	\$1.21
Purchased services	\$0.61
Purchased supplies	<u>\$0.21</u>
TOTAL IMPACT	\$6.14

As the table shows, the majority of the impact comes from the increased productivity of the Minnesota workforce. Even if only the economic impact of system spending (as reflected in the

last three terms) were considered, the ratio of economic impact to net state spending would be 2.03, still a favorable ratio.

III. Local Impact of Campuses

In addition to estimates of the statewide impact, this report also includes updated estimates of the local economic impacts of all of the Minnesota state colleges and universities. These estimates measure the amount of economic activity in a specific city or region that can be attributed to the presence of a two- or four-year school in the area.

Since we are analyzing the local effects of campuses, there are some additional categories of direct spending that need to be considered in calculating economic impact. Spending by students was not included in the statewide impact calculations because they represent a redistribution of spending within the state rather than an addition to overall spending in Minnesota. However, such redistributions should be included in measurements of the economic impact on a particular city or region. In fact, in the cases of the four-year residential colleges, spending by students is the single largest category of direct spending, surpassing the total direct spending of the school itself. So this spending was added to the direct spending by the institutions in calculating local economic impact.

The student spending estimates for two-year institutions in this report are based surveys of student spending that were performed on a number of campuses during Spring term, 2003. Ten two-year institutions were part of a more detailed investigation of local economic impact. As part of that study, student surveys were conducted on the 25 campuses of those ten institutions.

Analysis of the survey data made it possible to produce more detailed and more accurate estimates of economic impact. For multi-campus institutions, estimates were produced on a campus-by-campus basis as well as for the institution as a whole.

The estimates for the other two-year institutions were improved by the information from the student surveys from the 25 campuses in the detailed study. For each of these other schools, the assumed spending levels for full-time and part-time students were based on the spending of similar types of students in similar institutions in nearby or similar cities.

The estimates of local impact estimate do not include estimates of the added productivity of the local labor force that parallel the labor force impact included in the statewide estimates for the system as a whole. Estimating the impact of an individual college on the labor force in its immediate area is much more complicated than estimating the system's impact on the state labor force. While we have some relatively reliable data on the proportions of system graduates who take jobs within the state, relatively little is known about the percentages of students who take jobs in particular communities. Surveys of students at a number of two-year institutions make it clear that many of the students plan to stay in the area after completing their studies but there is no reliable information on the proportions of students who actually do so. Any estimate of the school's effect on the productivity of the local labor force would be driven almost solely by assumptions that could not be verified. Therefore, the effect on local labor force has not been explicitly included in these estimates, though it is believed to be substantial.

The local economic impact estimates are grouped by type of institution. All institutions are listed according to their names for the upcoming academic year. In some cases, reorganizations have occurred since the year in which the data were generated. Where possible, the local impact estimates have been adjusted to reflect the campuses now included. These adjustments are explained in footnotes.

Four-year Universities

To calculate the local impact of four-year state universities, we used actual data on direct spending by each school for fiscal 2002 and assumed levels of student spending and visitor spending on a per-student basis. Total student and visitor spending were added to the school's expenditures to get total direct spending. Then a multiplier was applied to total direct spending in order to calculate the additional induced spending.

The amount of direct spending by individual school was taken from final institution-by-institution financial reports for fiscal year 2002. Not all spending by the colleges was included in the basis for economic impact. The direct spending that was counted included wages and salaries, supplies, purchased services, repairs, and maintenance. Wage and salary expenses were adjusted to exclude taxes, benefits, and estimated spending outside the community.

Student direct spending was estimated by multiplying an assumed annual spending level of \$8000 per year times the average number of students attending classes during the school year.

Visitor spending was estimated at \$500 per year per student. Both dollar figures are in line with

survey information done as part of single-campus impact studies done at several of the system institutions². Since none of these institutions were involved in the surveying of student spending, there is no basis for a revision in the estimated spending used in the earlier preliminary estimates.

The number of students used in estimating local student spending was calculated by averaging the number of students on campus during the fall and spring terms of the 2001/2002 academic year. This estimate of average attendance was reduced by excluding the number of Post Secondary Educational Options (PSEO) students counted in the totals.³ This method produces a more accurate estimate of economic impact than using statistics on unduplicated headcount as was done in the preliminary estimates that were done in 2002.

Table 4 below includes the total impact estimates for all of the four-year colleges in the system.

Table 4
Annual Local Economic Impact
Four-year State Universities
Fiscal year 2002

Bemidji State University ⁴	\$ 116 million
Metropolitan State University	\$ 119 million
Minnesota State University, Mankato	\$ 303 million
Minnesota State University Moorhead	\$ 171 million
Saint Cloud State University	\$ 390 million
Southwest Minnesota State University	\$ 74 million
Winona State University	\$ 189 million

² For student spending, see, in particular, Robert Ley and Jeffrey Totten, "Economic Impact of Bemidji State University on the Economy of the Bemidji Region," November, 2001. A lower figure was used for Metropolitan State University to reflect the fact that it is not a residential campus.

³ This measure is a more accurate reflection of the number of students having an impact on the local economy than the unduplicated headcount statistics used in the previous study. That measure tended to overstate the impact.

⁴ This estimate does not include the impact of Northwest Technical College located in Bemidji that will now be aligned with Bemidji State University.

The estimates of local impact range from a high of \$390 million for Saint Cloud State University to a low of \$74 million for Southwest State University. These estimates are, for the most part, close to the earlier preliminary estimates made on the basis of FY 2001 financial data. Only two estimates changed substantially. The impact estimate for Metropolitan State University increased because estimated spending per student was raised based on student spending information collected in surveys of other state college campuses in the Metro area. The estimate for Southwest State University is lower because the newer measure of students on campus is substantially lower than the unduplicated headcount for the college used in the earlier estimates.

Community Colleges

Local economic impact estimates for two-year community colleges are shown in Table 5. In all cases, these estimates are based on actual college spending data from fiscal year 2002 and estimated levels of student spending. For some of the colleges, student spending estimates are based on surveys conducted on-campus. For the colleges where student spending information was not collected, the estimates use spending assumptions that are based on the survey results at the most comparable institutions among the 25 two-year schools that were surveyed.

At all of the two-year colleges where surveys of students were conducted, part-time and full-time students were asked to detail their local spending in a number of categories. The estimates of per-student spending were then multiplied by the average number of part-time and full-time students on campus during the school year.

Table 5
Annual Local Economic Impact
Two-year Community Colleges
Fiscal year 2002

Anoka-Ramsey Community College	\$ 73.1 million
Fond du Lac Tribal and Community College	\$ 17.1 million
Inver Hills Community College	\$ 65.2 million
Normandale Community College	\$ 126.9 million
North Hennepin Community College	\$ 78.6 million

The estimates range from a high of \$126.9 million for Normandale Community College to a low of \$17.1 million for Fond du Lac Tribal and Community College.

Combined Community and Technical Colleges

Local economic impact estimates for combined community and technical colleges are included in Table 6. These estimates were produced using actual college spending for fiscal year 2002 and per student spending figures based on campus surveys. The attendance figures showed that, in general, these institutions had more part-time students than full-time students, a pattern replicated in the other two-year schools.

Data from the student surveys on selected campuses consistently showed that around three-quarters of all students, both full-time and part-time, were working while attending school. Full-time student usually worked about 20 hours per week and part-time students typically worked between 25 and 30 hours.

Table 6
Annual Local Economic Impact
Combined Community and Technical Colleges
Fiscal year 2002

Central Lakes College	\$ 54.5 million
Century College	\$ 139.6 million
Hibbing Community College	\$ 78.0 million
Lake Superior College	\$ 73.3 million
Minneapolis Community and Technical College	\$ 129.2 million
Minnesota State Community and Technical College ⁵	\$ 70.5 million
Minnesota West Community and Technical College	\$ 65.2 million
Northeast Higher Education District ⁶	\$ 79.7 million
Itasca Community College	\$ 29.9 million
Mesabi Range Community and Technical College	\$ 25.9 million
Rainy River Community College	\$ 11.9 million
Vermillion Community College	\$ 12.0 million
Northland Community and Technical College ⁷	\$ 58.1 million
Ridgewater College	\$ 75.2 million
Riverland Community College	\$ 54.4 million
Rochester Community and Technical College	\$ 80.4 million
St. Paul College	\$ 91.2 million

The highest estimated local impact for a CTC is \$139.6 million for Century College in White Bear Lake. Taken individually, the campuses that comprise the Northeast Higher Education District have smallest impact in this category, but taken as a group, they had a total impact of \$79.7 on their part of the state.

⁵ Minnesota State Community and Technical College includes four campuses that were part of other institutions in FY 2002: Fergus Falls, Detroit Lakes, Moorhead, and Wadena. Individual estimates for those four campuses were combined to produce an overall estimate.

⁶ The Northeast Higher Education District is comprised of four institutions and five campuses since Mesabi Range CTC has campuses in both Eveleth and Virginia. An overall estimate is presented here as well as estimates for the four institutions.

⁷ Northland CTC now includes two campuses, Thief River Falls and East Grand Forks, the latter having been part of Northwest Technical College in FY 2002. Individual estimates for the two campuses were combined.

Technical Colleges

Estimates of the local economic impact of the state technical colleges are contained in Table 7. Hennepin Technical College was estimated to have the largest local impact at \$149.3 million and Northwest Technical College - Bemidji the lowest at \$11.2 million. It should be noted that these estimates do not include estimates of visitor spending in the local area because it was not feasible to conduct yearlong surveys of visitors to provide needed input for such an estimate.

Table 7
Annual Local Economic Impact
Technical Colleges
Fiscal year 2002

Alexandria Technical College	\$ 42.0 million
Anoka Technical College	\$ 86.9 million
Dakota County Technical College	\$ 86.8 million
Hennepin Technical College	\$ 149.3 million
Minnesota State College – Southeast Technical	\$ 30.4 million
Northwest Technical College - Bemidji ⁸	\$ 11.2 million
Pine Technical College	\$ 11.6 million
South Central Technical College	\$ 78.0 million
St. Cloud Technical College	\$ 51.8 million

None of the local economic estimates include an estimate of the contribution made to the local economy through enhancing the productivity of the local labor force. At the state level, that effect was larger than the economic effect of school spending, but data do not exist to facilitate producing parallel estimates for local communities. If such calculations could be made at the local level, the impact of technical colleges and other two-year institutions would probably be

⁸ In FY 2002, Northwest Technical College included four additional campuses that have since become part of other institutions. The Bemidji campus is now aligned with Bemidji State University.

increased substantially. So the estimates presented here are conservative and likely to understate the total impact of the Minnesota's state colleges and universities on their local economies.