

IV. Estimating the Economic Impact of Mesa State College

The impact of Mesa State College on its surrounding counties extends well beyond an organization that delivers educational programs and enhances the region's quality of life. A third significant contribution is the economic impact of the college on the local economy. Beck and Elliot¹ define economic impact as, "... the difference between existing economic activity in a region given the presence of the institution and the level that would have been present if the institution did not exist".

This chapter details the economic impact of Mesa State College. The college's economic activity is examined, based on the 14 counties for which the college is the Regional Education Provider: Delta, Eagle, Garfield, Grand, Jackson, Mesa, Moffat, Montrose, Ouray, Pitkin, Rio Blanco, Routt, San Miguel and Summit Counties. It estimates an economic impact of Mesa State College for Fiscal Year 2003 - 04 and details increases in economic activity between 1999 and 2004.

An Overview of the Economic Impact of the College

The methodology for this section relied heavily on the American Council on Education model developed by Caffrey and Isaacs² which examines expenditures made by the college, employees, and students, as well as visitors attending college activities. This study included five areas of Mesa State College expenditures that have an economic impact upon the surrounding community:

- Employee expenditures: items purchased by Mesa State employees such as housing, clothing, food, etc.;

¹ Roger Beck and Donald Elliot, "Economic Impact Study of Regional Public Colleges and Universities," *Growth and Change*. Spring 1995, Volume 26, Issue 2, p. 245.

² John Caffrey and Herbert Isaacs, *Estimating the Impact of a College or University on the Local Economy*. (Washington: American Council on Education, 1971).

- College expenditures: goods and services purchased from the local community such as printing, janitorial supplies, health care, etc.;
- Capital expenditures: labor, materials, furnishings, etc. associated with the construction of new buildings and/or the renovation/refurbishment of existing structures;
- Student expenditures: purchases by Mesa State students such as food, books, supplies and transportation; and
- Visitor expenditures: items such as food and shelter, stated as a per diem amount, purchased by visitors as they attended various college activities.

In the following section, each of the five categories of expenditures is examined separately for its direct economic impact, as well as its indirect impact due to the multiplier effect. The multiplier effect suggests since a dollar spent by an individual becomes the income of another person, the initial dollar being “respent” will have a greater impact on the economy than just the original dollar. Hence, dollars spent “grow” as they are “respent” throughout the economy. When the expenditure categories were increased using a multiplier of 1.8, the college’s resulting estimated economic impact totaled \$144 million for FY 2003 - 04.

Expenditure Categories

Employee Expenditures

Employee expenditures include all those items purchased by employees of Mesa State College as they spend their paychecks in the local community. Purchases range from rent/mortgage payments to clothing to entertainment. According to the Bureau of Labor Statistics Consumer Expenditure Survey, housing and transportation are the two largest areas of consumer expenditures. Due to the location of Mesa State College, the majority of the dollars spent by MSC employees stay in the local economy. As noted previously, Mesa State employs 1,194 full- and part-time faculty and staff, and part-time students. The college thus has a significant impact on employment levels and economic activity in the surrounding community.

To determine employee expenditure dollar amounts, all monies budgeted for salaries for all departments and auxiliary accounts were included. Benefits, which included retirement, medical insurance, life insurance, etc. were excluded, and taxes estimated at 15% also were subtracted from the salary figures.

**Table 4-1. MESA STATE COLLEGE
SALARY EXPENDITURES, 1999 - 2004**

Year	Salaries	Less 10%	Total Added
1999-00	\$13,802,874	\$1,380,287	\$12,422,587
2000-01	\$14,313,533	\$1,431,353	\$12,882,180
2001-02	\$15,359,316	\$1,535,932	\$13,823,384
2002-03	\$15,552,807	\$1,555,281	\$13,997,526
2003-04	\$15,425,847	\$1,542,585	\$13,883,262

Again, due to the college's location, it is assumed there is little dollar leakage out of the area, particularly in the major areas of housing, food and transportation. Vacations and entertainment, however, are examples of dollars that may leave the local economy. For purposes of this study, it was assumed that 10% adequately accounts for leakage out of the 14-county area encompassed by this study. Employee salaries for FY 2003 - 04 totaled \$15.4 million after taxes (Table 4-1). Adjusting for leakage, \$13.8 million were added to the local economy through employee expenditures, an increase of approximately \$1.4 million over FY 1999 - 2000.

Using the Bureau of Labor Statistics Consumer Expenditure percentages, Table 4-2 documents how those salary dollars were spent in the local economy. The salary dollars exclude benefits and are adjusted for after-tax dollars and leakage out of the area. The table assumes an average income of \$40,000-\$49,999 for the Midwest Region, using the percentages for FY 2001 - 02, the most recent available data.

College Expenditures

Mesa State College purchases a variety of items from the surrounding community that range from printing to janitorial supplies to health care. In order to determine the economic impact of expenditures by Mesa State on the region, the following methodology was employed. Budgets for all departments and auxiliary accounts were totaled, and all items except out-of-state items were included as monies spent by the college. After review and analysis of vendor lists of college expenditures provided by the college's Office of Purchasing, it was concluded that approximately 50% of the total expenditure dollars were spent in the 14-county region.

**Table 4-2 MESA STATE COLLEGE
EMPLOYEE EXPENDITURES BY CATEGORY, 2003-2004**

<u>Category</u>	<u>Percent</u>	<u>Value</u>
Food		
Food at home	7.44%	\$1,032,915
Food away from home	5.40%	\$749,696
Total Food	12.84%	\$1,782,611
Alcoholic Beverages	1.25%	\$173,541
Housing		
Shelter	16.65%	\$2,311,563
Utilities, fuels, and public services	6.75%	\$937,120
Household operations	1.22%	\$169,376
Housekeeping supplies	1.33%	\$184,647
Household furnishings and equipment	3.79%	\$526,176
Total Housing	29.74%	\$4,128,882
Apparel and Services		
Men and boys	1.01%	\$140,221
Women and girls	1.57%	\$217,967
Children under 2	0.24%	\$33,320
Footwear	0.66%	\$91,630
Other apparel products and services	0.53%	\$73,581
Total Apparel and Services	4.01%	\$556,719
Transportation	20.97%	\$2,911,320
Health Care	6.16%	\$855,209
Entertainment	4.70%	\$652,513
Personal Care Products and Services	1.21%	\$167,987
Reading and Education	1.96%	\$272,112
Tobacco Products and Smoking Supplies	1.31%	\$181,871
Miscellaneous	1.89%	\$262,394
Cash contributions	3.19%	\$442,876
Personal insurance and pensions	9.99%	\$1,386,938
TOTAL (Differences due to rounding errors)	99.99%	\$13,883,262

As summarized in Table 4-3, college expenditures exceeded \$47 million for Fiscal Years 1999 - 2004 and averaged \$9.4 million per year. Expenditures increased by approximately \$2.4 million over the five-year time frame. The total dollar amount expended by the college was \$10.9 million for FY 2003 - 04. Assuming that 50% of those dollars were spent in the surrounding region, nearly \$5.4 million were added to the local economy by the presence of Mesa State College in FY 2003 - 04.

**Table 4-3. MESA STATE COLLEGE EXPENDITURES
1999 - 2004**

Year	Expenditure Amount	% Spent Locally	Total Added
1999-00	\$8,534,436	50%	\$4,267,218
2000-01	\$8,900,828	50%	\$4,450,414
2001-02	\$8,953,972	50%	\$4,476,986
2002-03	\$9,762,700	50%	\$4,881,350
2003-04	\$10,965,243	50%	\$5,482,622
5 Yr Total	\$47,117,179		\$23,558,590
Annual Avg	\$9,423,436		\$4,711,718

Capital Expenditures

Capital expenditures were evaluated on a year-to-year basis. During the time frame of this study, a variety of capital projects was completed/continued. The Fine Arts building was constructed during FY 2000 - 02, the technology infrastructure was upgraded and expanded, and Houston Hall, Walter Walker, Saunders and Tolman Residence Hall underwent major repairs/renovations.

Over the five-year study period, \$18.8 million were spent on capital projects, with an annual average of \$3.7 million (Table 4-4). Again estimating that 50% was spent in the region, Mesa State added approximately \$1.8 million to the local economy. Since capital projects vary greatly from year-to-year, a five-year average was used when determining the economic impact for FY 2003 - 04.

Student Expenditures

As students attend Mesa State College, many dollars are spent in the local economy. Furthermore, the majority of the dollars spent by MSC students will stay in the local economy, again, in large part due to the location of the college. Student expenditures were based on a formula used by the Financial Aid Office of Mesa State College.

**Table 4-4. MESA STATE COLLEGE
CAPITAL EXPENDITURES, 1999 - 2004**

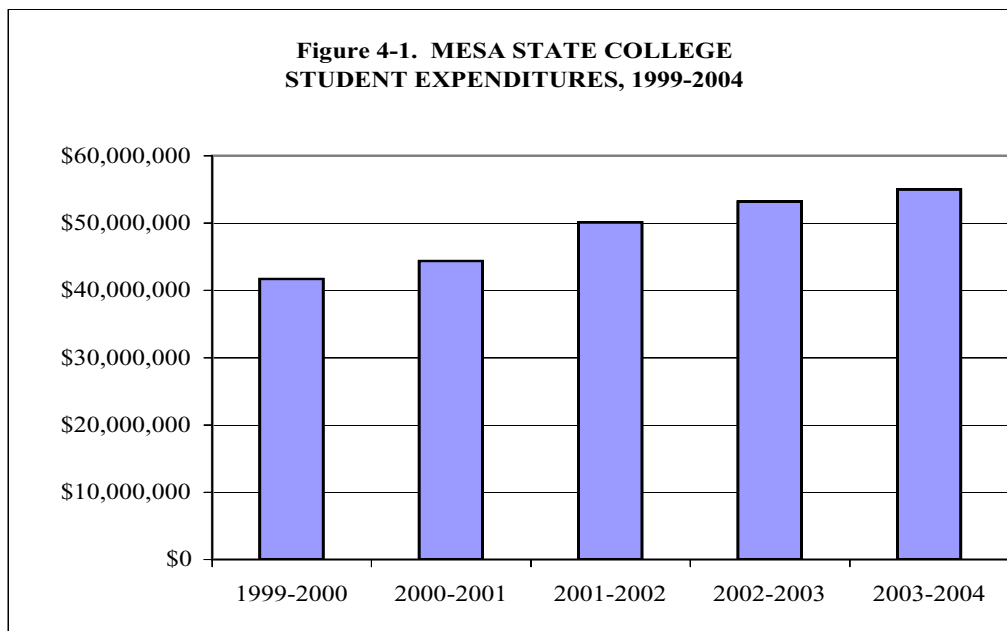
Year	Project	Expenditure Amount	% Spent Locally	Total Added
1999-00	HSSI/WWI	\$1,304,972	50%	\$652,486
2000-01	Tech/HHS/WW	\$9,004,839	50%	\$4,502,420
2001-02	HHS/Saunders	\$6,597,117	50%	\$3,298,559
2002-03	No new activity	--	--	--
2003-04	Tolman/WW/HH/Library	\$1,905,659	50%	\$952,830
5 Yr Total Annual Avg		\$18,812,587 \$3,762,517		\$9,406,294 \$1,881,259

Non-tuition student expenditures were broken into five groups; books and supplies, board, personal expenses, room, and transportation. The same expenditure amounts were used for both on- and off-campus students. It was assumed that 90% of these dollars remained in the local economy.

The increase in dollars spent is indicative of the increase in student population. In fall 1999, enrollment at Mesa State College was 4,893 students, while 5,725 attended in fall 2003. Thus with an increase of 832 students, the dollars spent in the surrounding economy also increased. Over the last five years, there has been an increase of \$13.3 million dollars added to the economy due to growth in Mesa State College enrollments (Table 4-5 and Figure 4-1). On average, 5,725 students spent \$1,186 a month while attending the college during the 2003 - 04 Academic Year.

**Table 4-5. MESA STATE COLLEGE
STUDENT EXPENDITURES, 1999 - 2004**

Year	Student Expenditures	Less 10%	Total Added
1999-00	\$46,336,710	\$4,633,671	\$41,703,039
2000-01	\$49,291,359	\$4,929,136	\$44,362,223
2001-02	\$55,714,406	\$5,571,441	\$50,142,965
2002-03	\$59,147,280	\$5,914,728	\$53,232,552
2003-04	\$61,120,100	\$6,112,010	\$55,008,090



Visitor Expenditures

Visitor expenditures include all those items purchased by visitors as they attend Mesa State College activities/events. As visitors attend college events, they purchase lodging, food, entertainment and fuel. Also, since these dollars are out of area dollars, they are “new” dollars to the community. The per diem amount of \$98 was obtained from the Department of Defense for the Metropolitan Statistical Area of Grand Junction, Colorado.

In order to determine the number of visitors to Mesa State College, the various areas listed below were asked to provide their visitor numbers for the year 2003. Table 4-6 summarizes the information provided by the various areas.

**Table 4-6. NUMBER OF MESA STATE COLLEGE
VISITORS BY AREA**

<u>Area</u>	<u>Number of Visitors</u>
Tomlinson Library	5,520
Performing Arts	8,000
College Center	66,805
Athletics	46,269
Graduation (estimate)	<u>5,000</u>
Total	131,324

Of the 131,000 visitors, it is estimated that 30% were from out of the area and spent dollars in Mesa County due to the presence of Mesa State College. Thus, 39,397 people visited the area in 2003 attending college activities. Using \$98 as the per diem amount, \$3,860,906 was spent by visitors attending events at Mesa State College in 2003.

Multiplier Effect

The multiplier effect is important to consider when determining the total economic impact of Mesa State College on the surrounding community. Due to the multiplier effect any time a dollar is spent, that dollar spent increases as it travels through the economy as it becomes another person's income. Thus the economic impact is not just the original dollar but the dollar multiplied by an additional increase, the multiplier. Thus, since the dollars spent by Mesa State College grow into the income of others as they are spent in the surrounding community, the total economic impact of Mesa State is determined by multiplying the total original dollars spent by the multiplier.

When reviewing similar studies, a range of multipliers has been used to calculate the multiplier or indirect effect of dollars spent in the surrounding community. The following table lists differing studies and the multipliers used for those studies.

Table 4-7. MULTIPLIERS USED IN SELECTED ECONOMIC IMPACT STUDIES

Colorado State University	4.0
University of Idaho	1.50
Northern Arizona University	3.49
Montana State University	2.50
University of Colorado-Boulder	1.93-2.06
University of Colorado-Health Sciences Center	2.06-2.5
Mesa State (1999) RIMS Multipliers	1.595-1.87
Grand Valley Conv/Visit Bur RIMS Multipliers	1.477-2.649

For purposes of this study, the multipliers in Table 4-7 were averaged separately by the high and low ranges. The averages ranged from 2.319 to 2.571. A multiplier of 1.8 was chosen, one which is conservative when compared to others in the above table.

Labor Multiplier

A labor multiplier can be used to calculate the number of jobs created by the influx of the \$80 million into the surrounding community. These are jobs created in order to service original jobs. Again, as selected studies were reviewed, differing labor multipliers were applied. Table 4-8 presents a variety of studies and the labor multipliers used in those studies.

**Table 4-8. LABOR MULTIPLIERS USED
IN SELECTED ECONOMIC IMPACT STUDIES**

University of Nevada-Las Vegas	3.08
Colorado State University	1.5
Montana State University	1.67
University of Idaho	1.41
Mesa State College (1999)	1.4
Grand Valley Convention and Visitors Bureau	1.2-2.445
University of Colorado	1.8
Grand Junction Economic Partnership	3.0-7.0

Using an adjusted average from the referenced studies, a labor multiplier of 1.4 was used to estimate the additional number of jobs created in order to service expenditures made by Mesa State College employees. Using the current 1,194 employees at Mesa State, and the labor multiplier of 1.4, an additional 477 jobs have been created due to the presence of the college. These 477 jobs include both full- and part-time positions.³

Total Economic Impact

As documented throughout this report, Mesa State College makes significant contributions to the 14 counties of the Western Slope. Its economic impact is equally significant. Table 4-9 and Figure 4-2 summarize the direct dollars spent by expenditure category by Mesa State College in FY 2003 - 04, as well as the indirect impact due to the multiplier effect. The total impact is then determined. By combining all expenditure categories for the year and then applying a multiplier of 1.8, the direct impact of the \$80 million of expenditures generated approximately \$144 million as the dollars are multiplied throughout the region.

One of the major criticisms of economic impact studies conducted in-house is the temptation to increase the numbers, use larger multipliers and thus overstate the economic impact of the college on the surrounding community (Beck and Elliot, 1995). This study has used a very conservative approach in calculating dollars spent, multipliers used and the total economic impact of the college. It is likely, therefore, that the economic impact of Mesa State College is actually greater than the value of \$144 million estimated in this study.

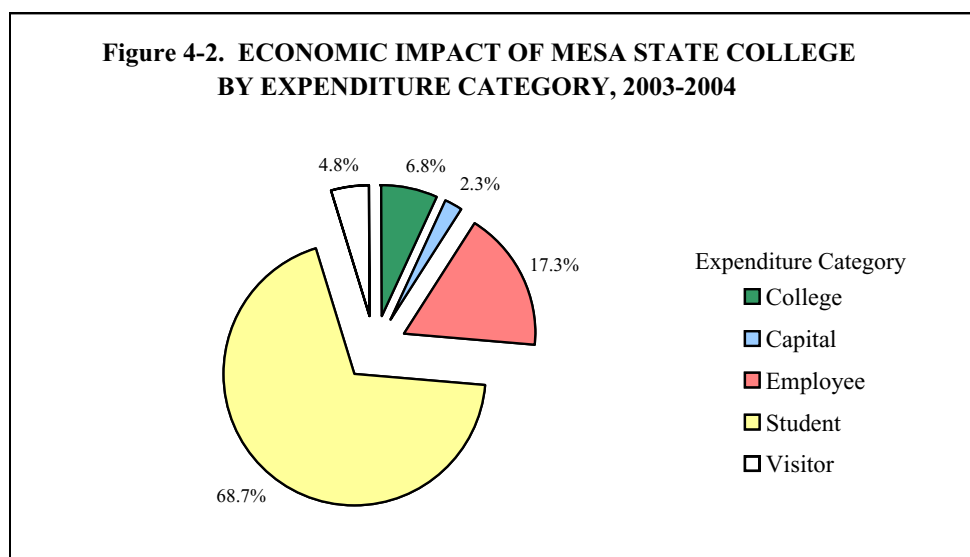
³Instead of using jobs, FTE can be used to calculate number of jobs created. Based on the 408.4 FTE currently at Mesa State and using the multiplier of 1.4, a total FTE of 571.8 were created. FTE are full-time equivalent positions, a number comparable to student FTE (full-time equivalent students) for reporting purposes. Calculating job creation another way, the \$144 million in total impact would be spent in the community. Of the total, wages and salaries would account for 5.3% according to the industry survey from BizStats.com. The \$144 million multiplied by 5.3% would create \$7.6 million in salaries/wages. Using retail, and a 2,000-hour job at \$7.00 an hour, 542 jobs would be created from the original \$144 million.

**Table 4-9. ECONOMIC IMPACT OF MESA STATE COLLEGE
BY EXPENDITURE CATEGORY, 2003 - 2004***

Expenditure Category	Direct Impact	Indirect Impact	Total Impact	% of Total
College	\$5,482,622	1.8	\$9,868,719	6.8%
Capital	\$1,881,259	1.8	\$3,386,266	2.3%
Employee	\$13,883,262	1.8	\$24,989,872	17.3%
Student	\$55,008,090	1.8	\$99,014,562	68.7%
Visitor	\$3,860,906	1.8	\$6,949,631	4.8%
Total	\$80,116,139		\$144,209,049	100.0%

*To avoid distortion from differing multipliers and inflation, total impact was calculated only for 2003-2004.

**Figure 4-2. ECONOMIC IMPACT OF MESA STATE COLLEGE
BY EXPENDITURE CATEGORY, 2003-2004**



Concluding Remarks

This chapter has outlined the ways in which Mesa State College has added significantly to the economic base of Western Colorado. Direct and indirect expenditures, coupled with construction projects, result in an estimated economic impact of \$144 million for FY 2003 - 04. Additionally, the college is the third largest employer in the region, with more than 1,000 full- and part-time employees. Finally, an estimated 477 jobs are created by these expenditures due to the multiplier effect. Taken collectively, these values document the college’s role as a major stimulant to the economic development of the region. ■