



## The Economic Impact of James Madison University on the City of Harrisonburg and Rockingham County: 2008-09

### Executive Summary

Throughout its 102-year history, James Madison University has grown to become one of Virginia's premier institutions of higher education and one of the nation's top comprehensive universities. The university now enrolls nearly 19,000 students, with more than 3,500 full and part-time faculty and staff, and it has an annual operating budget of \$395 million.

At its current level of operations, James Madison University has a significant impact on the economies of the City of Harrisonburg and Rockingham County. The JMU Office of Institutional Research, with consultation and technical support from the Virginia Employment Commission, recently investigated that impact. This investigation was based on fiscal year 2009 spending for JMU operations and capital projects, summer 2008 through spring 2009 student spending, and calendar year 2009 compensation to employees. JMU's impact on the local economy can be seen in a variety of ways.

- ❑ Over 4,500 non-JMU jobs in the local area were the result of university-related spending; the total employment related to JMU was 8,200.
- ❑ Roughly 13 percent of all local employment, including JMU employees, resulted from university-related spending.
- ❑ More than \$448 million was spent locally by the university, students, employees and student visitors.
- ❑ Over \$62 million was spent in "indirect effects" – payments to local businesses that were re-spent with other local businesses.
- ❑ Over \$67 million was spent in "induced effects" – payroll received by employees working for local businesses that were re-spent to support their households.
- ❑ Over \$66 million (71 percent of the FY 2009 total) was spent with local firms for capital planning and construction.
- ❑ Almost \$16 million in health-insurance premiums paid by the university for its employees was returned in payments to local health-care providers.
- ❑ Almost \$11 million in retiree benefits from the Virginia Retirement System and non-VRS retirement plans were paid to JMU retirees.
- ❑ Over \$15 million was spent by student visitors.
- ❑ University-related spending generated a tax effect of \$10.5 million in revenue to local governments and \$22.7 million to the state.
- ❑ Over \$62 million was spent with local small, women and minority (SWAM) owned businesses.
- ❑ Students used their JMU Flex Card electronic debit accounts to spend more than \$1.2 million off-campus in the local community.
- ❑ Additional off-campus spending by alumni and other visitors not related to students is believed to be significant, but was not captured by this study.

## Acknowledgments

This economic impact study required the support of many individuals. We are particularly grateful for the assistance provided by Mr. Timothy Kestner, Economist, Virginia Employment Commission. Mr. Kestner helped guide the investigation through the principles of economic impact analysis and with the selection of the IMPLAN models for the study. He also processed JMU's expenditure information through the IMPLAN software to generate the estimates of JMU's impact on the local economy. From the Virginia Retirement System, Rich Rogness, Technology Support Team Leader, created a report for JMU on pensions received by local JMU retirees.

A number of staff within the university were invaluable to this project because of their expert knowledge of university data. Ms. Terry Knight, Information Systems, provided data on non-personal expenditures. Ms. Jill Eckard, Payroll Services, compiled the payroll expenditure information. Rebecca Hinkle, Card Services, compiled Flex expenditure data. Donna Graves, Facilities Management, provided information on capital outlay expenditures. Rosemary Turner, Business Services, provided board revenue data. Joan Houff, Residence Life, provided room revenue data. Brad Barnett, Office of Financial Aid & Scholarships, provided detail on the student aid budget. All of these individuals also played important roles as consultants to the analysis within their areas of expertise.

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## Introduction

A visionary group of Harrisonburg's leading citizens joined together in 1907 to lobby Virginia's General Assembly as it worked to decide on the location for a new state teacher's school. The citizens believed the benefits of a new state school would help to make Harrisonburg the economic, cultural and educational center of their beautiful Shenandoah Valley. The citizens lobbied hard and in 1908 Harrisonburg was selected as the school's location.

That state teacher's college grew to become James Madison University, one of Virginia's top institutions of higher education. Harrisonburg grew to become the Shenandoah Valley's economic, cultural and educational hub, just as the city's founders envisioned.

A host of factors over the past century contributed to transform Harrisonburg and Rockingham County into an area mixed with the special character, beauty and industries of the Shenandoah Valley. James Madison University is not the sole reason Harrisonburg has grown and prospered. But now that the City of Harrisonburg, Rockingham County and James Madison University are inextricably intertwined, it is helpful to periodically examine and put into perspective the university's economic impact on the local community.

In summer 2006, the Office of Institutional Research published the results of an economic impact study which found more than \$290 million in local spending and 6,225 local jobs associated with JMU in 2004-05 (*Investigating the Economic Impact of James Madison University on the City of Harrisonburg and Rockingham County*, JMU Office of Institutional Research, July 2006). By 2008-09, the number of students increased by 13.6 percent and the number of faculty and staff grew by 13.5 percent. Because the methodologies of both studies were almost identical, this study also speaks to changes in economic impact over the past four years.

## Overview

For this study, economic impact means tracking expenses to see how much they contribute to local businesses and their employees, and how those businesses and their employees spend that income locally. Local expenses become the input for an economic model that outputs three types of effects:

- ❑ Direct Effects: The amount of expenses which initially remain in the local community. For example, if a television were purchased locally, the direct effect would be the vendor's markup (the difference between the vendor's wholesale purchase price and retail sales price).
- ❑ Indirect Effects: Estimates of the expenses that occur when direct dollars are spent by local businesses with other local businesses, and are then spent again between local businesses until the expenses leave the community. Indirect effects also include the number of jobs associated with the indirect expenditures.
- ❑ Induced Effects: Include estimates of the direct and indirect dollars paid by businesses to their employees which they spend locally to support their households. The number of jobs created by induced spending is also an induced effect.

The JMU Office of Institutional Research has received help from the Virginia Employment Commission with estimating the local economic impact of the university in four prior studies beginning in 1992. The VEC has the expertise and computing tools that can estimate economic impact from spending estimates supplied by the university. The software used by the VEC is commonly referred to as IMPLAN (Impact Analysis for Planning). For this study, VEC used IMPLANPro, an economic modeling system owned and maintained by Minnesota IMPLAN Group (MIG), Inc. With some additional modifications, the VEC has also enabled IMPLAN to help estimate the tax impact (revenue) to state and local governments.

Two types of data help power IMPLAN. First, IMPLAN has data about the kinds of goods and services that are produced and/or can be purchased in a specific locality. Second, IMPLAN knows the groupings of goods and services that people, businesses or institutions are likely to purchase. By knowing how much of "what" may be purchased locally by "whom," IMPLAN can return the various effects on expenses and employment (direct, indirect and induced).

The best economic impact estimates are derived from IMPLAN models requiring high levels of spending detail. For example, a line-item model for operations spending would receive as input the totals for many specific items like electricity, paving, vehicles and postage. With an aggregate model, the model would internally include a distribution of expenses across a basket of goods and services that is based upon research of a sample of institutions. The line-item model should return better results than the aggregate model. Likewise, a model based on employee net wages is better than one that uses gross wages. The gross wage model would introduce some error in order to estimate the net wages within the analysis. Finally, the larger the institution, the more difficult it becomes to take operational data on expenses and transform them into the line-item categories required by the IMPLAN model.

## Methodology

The methodology for this study was essentially the same as the last economic impact study published by the Office of Institutional Research. That study examined the economic impact of 2004-05 spending. This report includes a short discussion of changes made from prior studies and information on the difficulties of determining inputs for the IMPLAN tool. The report is published online at <http://www.jmu.edu/instresrch/resrchstud/economic/EcoImp06.pdf>. The main difference between the 2006 study and this version is the addition of student visitor spending estimates.

There are two fundamental challenges to preparing data for IMPLAN modeling: determining the categories of expenditure and determining their amounts.

The categories of expenditure are the same as the summer 2006 study with the addition of estimates of student visitor spending. These are:

- ❑ Student spending within the local community.
- ❑ Employee spending (students not included).
- ❑ JMU operational spending (non-personal only) to local vendors.
- ❑ JMU capital expenditures to local vendors.
- ❑ Health care insurance payments to local providers.
- ❑ Payments to retirees living locally.
- ❑ Student visitor spending.

In determining the amounts of these expenditures, the foci of concern are that:

- ❑ Dollars spent in the community do not “leak out of” the analysis,
- ❑ Dollars not spent in the community do not “leak into” the analysis, and
- ❑ Dollars are not double counted.

For student spending, an estimate was derived from the student budget that is used by the university's Office of Financial Aid and Scholarships to calculate student aid awards. The student budget was built with line-items like room, board, transportation and clothing. As a result, a detailed line-item estimate of local spending by students was a viable fit for an IMPLAN line-item model. To avoid double counting, the student totals were adjusted to remove JMU revenue from students for tuition, fees, housing, meal plans and Flex (electronic debit) accounts spent on-campus. Estimates were based on enrollment from summer 2008 through spring 2009.

Student spending estimates required special handling to avoid double counting as students spend money both on and off campus. Tuition and fees will eventually be spent by the university and were not included in student spending estimates. University revenue amounts for optional student services, like room and board, were also removed from student spending. Other line items that make up the student financial aid budget were examined and a few, like amounts for car insurance and license fees, were not included as local expenditures. The commission paid by the privately operated bookstore to JMU was removed from student spending estimates for books and supplies to prevent double counting.

Employee spending was based on the net salary and wages paid to JMU employees in calendar year 2009. The net wages data were adjusted in two ways. First, student payroll was removed from the totals. Second, pre-tax benefit deductions, like medical expenses and day care, were added back into the net. They were returned to net because they are predominantly local expenses which are normally paid from net wages by many people who do not have pre-tax benefit plans.

For operational expenses (non-personal only), total local expenditures were determined and input to an aggregate IMPLAN model, a model based upon a basket of goods common to universities and colleges. The total was based upon the percentage of local expenditures determined in the summer 2006 study. In the 2006 study, 62 percent of these expenditures were determined to be local. A slightly conservative value of 60 percent of the fiscal 2009 expenses was used for this study.

Expenses for capital outlay were compiled from vendor data and zip codes to determine local expenditures. Although capital acquisition expenditures, like JMU's purchase of Rockingham Memorial Hospital, were local and significant, they could not be used in the IMPLAN model and are discussed separately.

According to Anthem, the administrator of the Commonwealth's employee health insurance system, about 75 percent of premiums paid to Anthem return as payments to local health care providers. JMU's 2009 calendar year expense for employee health care was used to calculate this input.

OIR also received a special report from the Virginia Retirement System on pension payments to local JMU retirees. However, some JMU employees have non-VRS benefit plans. The proportion of these employees to the total number of employees was used to estimate the net non-VRS retirement pensions returned to the local community. Unfortunately, federal social security payments from JMU retirees leaked from the model.

Student visitor spending was estimated from the results of other studies on such spending in Virginia. Two institutions, The University of Virginia and Longwood University, used student surveys to estimate the number of visitor days per student and the average expenditures per visit. The two studies included sufficient detail to provide line-item inputs, e.g., food, gas and lodging, for the IMPLAN model. The Weldon Cooper Center for Public Service found the results of these two studies were close enough that they could be generalized across the Commonwealth in a study of the overall economic impact of higher education. JMU student visitor spending was derived by applying JMU's enrollment data to the results of these previous studies (18.8 visitor days per student and \$48 per visit).

Note that the student visitor spending estimate was derived from surveys of students and does not capture off-campus spending by alumni and visitors. This additional spending is believed to be significant. Examples include spending on food, gas and lodging by:

- ❑ Alumni attending homecoming.
- ❑ Prospective students and their families who visit, but do not attend JMU.
- ❑ Attendees at campus sporting and cultural events.
- ❑ Participants of JMU sponsored summer camps and conferences.

On-campus spending by alumni and visitors, like admissions to sporting events and lodging for summer camp programs, is captured in the model. These revenues flow into JMU and then out again as expenditures for operations and wages.

## Results

The investigation into fiscal 2009 spending by JMU, its employees and students estimated that more than \$448 million was spent in the City of Harrisonburg and Rockingham County. This included over \$66 million in capital and \$15 million in student visitor spending. Almost \$12 million in acquisition of local property could not be included in the IMPLAN model. Table 1 shows the types and amounts of spending that were delivered to the VEC for this economic impact analysis.

*Table 1*

*Estimates of Local Spending by JMU, JMU Employees, JMU Students and JMU Retirees in the City of Harrisonburg and Rockingham County: 2008-09*

<b>Spending Categories</b>	<b>Amount</b>
Total local expenditures	\$ 448,399,350
Total for IMPLAN modeling	\$ 436,434,544
Students (summer 2008, fall 2008 and spring 2009)	\$ 132,568,313
Employee net wages (Students not included, calendar 2009)	\$ 125,287,105
Operations	\$ 70,151,815
Capital planning and construction	\$ 66,164,798
Employer paid premiums for health insurance returned as payments to local providers.	\$ 15,986,053
Retirement (Social Security not included)	\$ 10,961,890
Student visitor spending	\$ 15,314,570
Capital acquisitions (not included in IMPLAN model)	\$ 11,964,806

The VEC determined that out of the total of \$436 million spent locally, \$284 million remained in the local economy to generate indirect and induced spending for other local goods and services. This was the direct effect. The indirect effect from local industry purchases was \$62.8 million. The induced effect of households spending income from the direct and indirect effects was \$67.2 million. Total employment and payroll, including JMU, was 8,200 jobs associated with \$263.7 million in compensation. An estimated 4,566 non-JMU jobs were associated with institution-related spending, as well as 3,634 JMU full-time and part-time employee jobs.

Table 2 shows the estimated effects of spending by JMU on the local economy in terms of spending and jobs associated with the spending.

*Table 2*

*Estimated Effects of Spending by JMU on the Local Economy*

<b>Spending Effects</b>	<b>Amount</b>
Total Spent Locally	\$ 436,434,544
Direct Effect	\$ 284,222,650
Indirect Effect	\$ 62,800,000
Induced Effect	\$ 67,200,000
Total Effects of Spending	\$ 414,222,650
<b>Jobs Associated with Spending</b>	
JMU Employees (full-time and part-time fall 2009)	3,634
Non-JMU jobs	4,566
Total jobs associated with the institution	8,200

The IMPLAN tool also generated an estimate of the tax impact on the state and local area in three categories: corporate, business and personal taxes. The estimate includes tax revenue and other forms of government revenue such as vehicle license fees and fines. Overall, the state received about \$22.7 million and the local area about \$10.5 million. State tax receipts included over \$4 million in corporate taxes, almost \$6 million in sales tax and over \$10.8 million in income tax. The model generated more than \$8 million in business property taxes to the local governments. However, the model seemed to underestimate personal property taxes at \$57,437. Table 3 shows the tax impact of JMU in these three categories as generated by IMPLAN.

*Table 3*

*Tax Impact of JMU on the State and the Local Area by Tax Category, FY 2009*

<b>Tax Category</b>	<b>Amount</b>
Corporate Profits and Dividends	\$ 4,307,704
<b>Indirect Business Taxes</b>	
Property Tax	\$ 8,101,521
Sales Tax	\$ 5,956,020
Meals Tax	\$ 971,436
Other Taxes and Fees	\$ 2,919,259
Indirect Business Taxes Total	\$ 17,948,236
<b>Personal Taxes</b>	
Income Tax	\$ 10,811,743
Motor Vehicle License	\$ 128,928
Property Tax	\$ 57,437
Other taxes, fines, fees & sport licenses	\$ 268,557
Personal Taxes Total	\$ 11,266,665
Total Taxes	\$ 33,522,605

## Discussion

A July 16, 2010 press release from Moody’s Investor Service addressed the bond rating of the City of Harrisonburg. In a section titled “Growing Regional Economy Benefits from Presence of University” the release noted that James Madison University is Harrisonburg’s “economic anchor and largest employer.” It went on to say:

Contrary to national and state trends, Moody’s expects that the City of Harrisonburg will continue to experience moderate economic expansion and tax base growth.

The results of the study conducted by OIR are consistent with Moody’s assessment. This study found that about 13 percent of jobs in the local area were associated with spending by James Madison University, its employees, students and student visitors. This spending was estimated at \$448 million in the City of Harrisonburg and Rockingham County in fiscal year 2009. This spending was associated with over 4,500 non-JMU jobs and more than \$414 million in direct, indirect and induced spending in the local community.

One highlight of this study is the growth in local capital expenditures. In 2004-05, JMU spent \$21 million locally on capital projects. The July 2006 report noted that the most recent five year average for capital spending was more than \$23 million per year. The most recent five year average for capital spending, acquisitions not included, is almost \$49 million with a total of \$93 million in fiscal 2009.

JMU also made significant capital/property acquisitions over the past five years, including the purchase of Rockingham Memorial Hospital and the former Harrisonburg High School property. The five year average of acquisition expenditures was over \$12.6 million. Although most of these dollars were probably spent locally, they could not be included in the IMPLAN model to estimate their contribution to the local economy.

Table 4 displays the last five years of total capital spending with detail by acquisition.

*Table 4*  
*JMU Capital Expenditures, FY 2005 – FY 2009*

<b>Fiscal Year</b>	<b>Planning &amp; Construction</b>	<b>Acquisitions</b>	<b>Capital Total</b>
2009	\$ 93,277,102	\$ 11,964,806	\$ 105,241,908
2008	\$ 62,305,287	\$ 24,145,908	\$ 86,451,195
2007	\$ 34,026,418	\$ 17,304,667	\$ 51,331,085
2006	\$ 28,661,464	\$ 8,566,290	\$ 37,227,754
2005	\$ 26,039,263	\$ 1,287,449	\$ 27,326,713

In the 2006 economic impact study, university spending was related to about ten percent of all local jobs in 2004-05. This statistic has increased to roughly 13 percent for 2008-09. A small portion of this increase results from the addition of student visitor spending (\$15 million) to the model. Another small portion results from the increase in local unemployment (from 3 percent to 6 percent) which lessens the total number of local jobs. Some of the growth in jobs resulted from an increase in the student body, from 15,809 on-campus students in fall 2004 to 17,964 in fall 2008. The spending categories driven by student enrollment, i.e., all categories except construction, rose in unadjusted dollars by roughly 30 percent each. The largest increase in spending from fiscal 2005 on a percentage basis was construction, reaching 212 percent. Table 5 highlights the growth in unadjusted dollars from fiscal 2005 to fiscal 2009 by spending

category and includes an estimate for each in the number of jobs created. Note that while local construction expenditures were only half those of student spending, construction accounted for 1,200 jobs and student spending accounted for 1,315 jobs.

As noted in Table 5 and in the Methodology section of this report (page 6), over \$15 million in the category “Student Visitors” is added to this study. The expenditures are based on surveys of students and do not include off-campus spending by alumni and other types of visitors who are not related to students. This is likely to be a significant amount of expense in the community.

*Table 5*

*Local Expenditures, Growth and Jobs, FY 2005 – 2009*

	<b>FY 2005</b>	<b>FY 2009</b>	<b>Percent Growth</b>	<b>Non-JMU Jobs 2009</b>
Total Local Expenditures	\$ 292,066,775	\$ 448,399,350	54%	NA
Total for IMPLAN modeling	\$ 292,066,775	\$ 436,434,544	49%	4,566
Students	\$ 100,032,742	\$ 132,568,313	33%	1,315
Employees	\$ 96,536,869	\$ 125,287,105	30%	1,045
Operations	\$ 54,114,454	\$ 70,151,815	30%	406
Capital	\$ 21,189,006	\$ 66,164,798	212%	1,200
Medical	\$ 11,984,489	\$ 15,986,053	33%	230
Retirement	\$ 8,209,215	\$ 10,961,890	34%	100
Student Visitors	NA	\$ 15,314,570	NA	270
Acquisitions	Included in Capital	\$ 11,964,806	NA	NA

The increase in JMU related employment in the four-year period between FY 2005 and FY 2009 was substantial and evidenced in Figure 1.

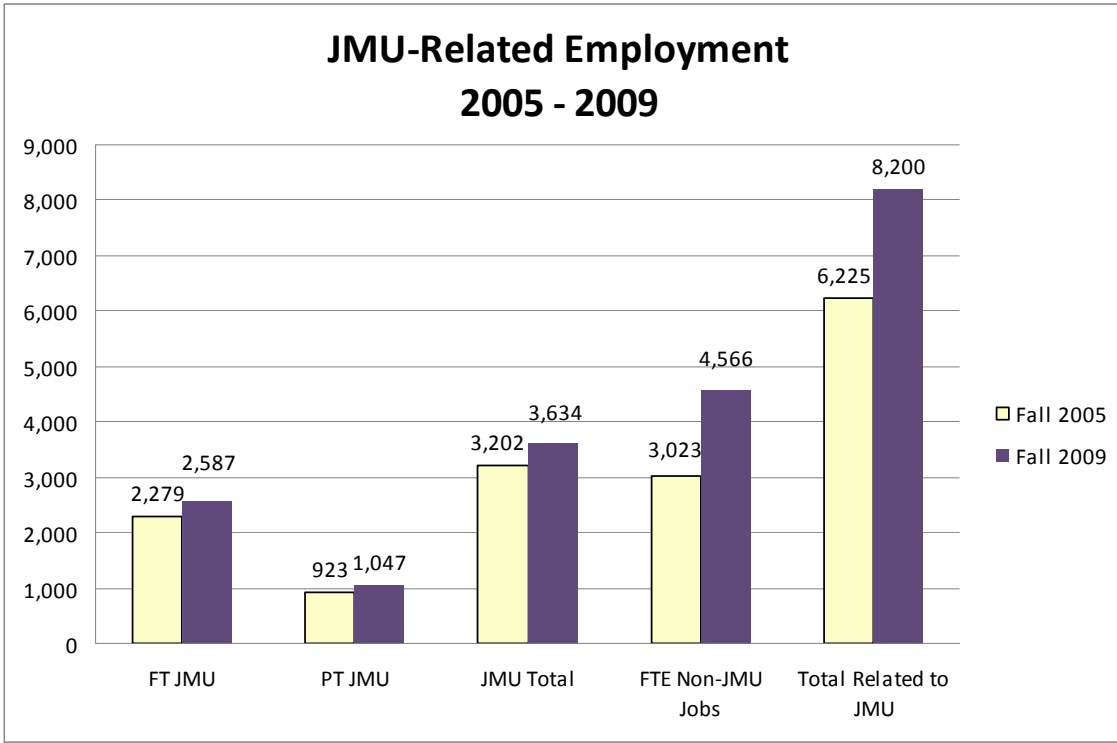


Figure 1. JMU-Related Employment

Notes: In FY 2009 270 jobs were related to visitor spending, a category not accounted for in the FY 2005 study.  
 Part-time JMU jobs are not recalculated on an FTE basis.  
 Non-JMU jobs are represented as full-time equivalents.

## Conclusion

Over the past four years, the number of jobs associated with JMU spending has slightly increased to about 13 percent. The total fiscal 2009 local expenditures were \$448 million and total jobs associated with this spending were estimated at 8,200. Given that on-campus enrollment of students taking classes on the main campus grew about 14 percent, the increase in total expenditures comes as no surprise. However, a large factor of the increase in economic impact resulted from the significant rise in capital expenditures and the greater power of these expenditures to create jobs. The community can also be encouraged by the fact that, despite difficult economic times, JMU has been able to sustain its enrollment and operations without reduction in personnel.

Enrollment at JMU is expected to increase by 2.5 percent between 2010 and 2015. The community should expect corresponding economic benefits from this growth. However, capital planning and construction expenditures may have peaked in fiscal 2009 at \$93 million. Fiscal 2010 expenditures are approaching \$80 million, and a variety of projects are still planned for fiscal 2011. The bigger picture of the state and national economies are likely to determine whether the kind of economic benefit gained locally from construction spending will be sustained.