REPORT ON THE FEASIBILITY OF A SATELLITE SITE OF THE COMMONWEALTH CENTER FOR ADVANCED MANUFACTURING IN THE SHENANDOAH VALLEY

PREPARED BY THE
VIRGINIA ECONOMIC DEVELOPMENT PARTNERSHIP

NOVEMBER 1, 2010

INTRODUCTION

The 2010 Session of the Virginia General Assembly, in budget language adopted for the FY2010-2012 Biennium, directed the Virginia Economic Development Partnership (VEDP) to report on the feasibility of establishing a satellite site of the Commonwealth Center for Advanced Manufacturing (CCAM) in the Shenandoah Valley region of Virginia. The specific language from the budget document is provided below:

> "N. The Virginia Economic Development Partnership shall establish a working group with representatives from the Commonwealth Center for Advanced Manufacturing, the University of Virginia, James Madison University, Blue Ridge Community College, the Shenandoah Valley Partnership, the Virginia Association of Manufacturers, and other affected parties to develop a plan for a satellite site of the Commonwealth Center for Advanced Manufacturing to support the economic development needs of the Shenandoah Valley region of the Commonwealth. The Partnership shall report to the Chairmen of the House Appropriations and Senate Finance Committees on the feasibility of such a satellite site and provide any recommendations regarding its establishment by November 15, 2010."
>
> Explanation:
> (This amendment directs the Virginia Economic Development Partnership to investigate the feasibility of developing a satellite site of the Center for Advanced Manufacturing in the Shenandoah Valley and to report to the General Assembly by November 15, 2010.)

As directed by the General Assembly, VEDP convened a working group of stakeholders to undertake the study, and in so doing, to consider the needs of the manufacturing base in the Shenandoah Valley and other relevant economic development needs of the region. VEDP wishes to gratefully acknowledge the active engagement and participation by the following stakeholders in connection with the preparation of the study and its recommendations:

Dr. Robert Baldygo, Blue Ridge Community College
Dennis Burnett, Augusta County Economic Development
Joseph Croce, Virginia Manufacturers Association
Dr. John Downey, Blue Ridge Community College
Allen Finch, Virginia Economic Development Partnership
Gregory Hitchin, City of Waynesboro Economic Development
Dr. Barry Johnson, University of Virginia
Sharon Johnson, Shenandoah Valley Workforce Investment Board Inc.
Dr. Ronald Kander, James Madison University
Dr. Donald Leo, Virginia Tech
Pace Lochte, University of Virginia
Robert McClintock, Virginia Economic Development Partnership
Debbie Melvin, Virginia Department of Business Assistance
Lester Smith, Blue Ridge Community College
Robin Sullenberger, Shenandoah Valley Partnership
Brian Warner, Crosspointe Operations, Rolls-Royce North America

Following several organizational teleconferences with selected members to plan for conducting the study, an initial broad-based meeting was convened on the campus of Blue Ridge Community College in Weyers Cave on August 12, 2010. This session was designed to acquaint all members with the legislative background and objectives of the study, receive an update on the mission, goals, and status of the Commonwealth Center for Advanced Manufacturing, to gain a better understanding of key factors impacting the Shenandoah Valley's economy, and to capture ideas and recommendations addressing the feasibility of a satellite center of CCAM and other needs that could help contribute to a stronger manufacturing and economic base in this region. For purposes of this study, the area of analysis was largely confined to the communities represented by the Shenandoah Valley Partnership, the regional economic development organization for this portion of Virginia's Shenandoah Valley. Some sections of this report have additional adjoining jurisdictional data where it was deemed to support the work of the stakeholders.

OVERVIEW OF THE COMMONWEALTH CENTER FOR ADVANCED MANUFACTURING (CCAM)

The Commonwealth Center for Advanced Manufacturing was one of two new signature collaborative research centers established as a result of Virginia's successful recruitment of a major new manufacturing campus facility to be located in Prince George County, Virginia. Following an intensive multi-state and international site selection process, Rolls-Royce selected a 1,000+ acre campus, known as Crosspointe, for its new manufacturing center for North America. In their November 2007 announcement of the project, Rolls-Royce executives highlighted the existing strong university research and higher education capabilities in Virginia and the opportunity to develop a unique industry-higher education partnership as a central factor leading to the decision to invest in Virginia. In addition to CCAM, the Virginia-Rolls-Royce higher education partnership led to the creation of the Commonwealth Center for Aerospace Propulsion Systems (CCAPS). CCAPS will focus on research at Virginia Tech and the University of Virginia that is of specific value to Rolls-Royce's work in propulsion technologies.

What is CCAM?

CCAM is an applied research center which aims to bridge the gap between basic, fundamental research that is typically performed at universities and product development that is routinely performed by companies. CCAM's goal is to accelerate the transition of technologies from fundamental development, through proof of concept, and on to commercialization. In so doing, the center will reduce costs, improve quality, and shorten the time to market new products and innovations. CCAM will also serve to focus technology developments on the solution of problems of practical importance and relevance to industry. CCAM will bring together manufacturers from across various industrial sectors with common technology interests and connect them with the world-class research capabilities in Virginia. In short, CCAM offers an industry-led, university-executed applied research capability focused on providing cost-effective technological solutions. By sharing resources, facilities, and personnel, members expect to lower their overall research costs for similar work done independently.

CCAM will provide a world class, multi-disciplinary manufacturing research program in the strategy, design, and analysis of new product development, new manufacturing facilities

development, and the re-engineering of manufacturing systems. Additionally, through interaction with multiple universities, CCAM can help train the next generation of technology leaders.

This collaborative research model is one that has gained common acceptance in Europe and has been employed successfully by Rolls-Royce as well as numerous other corporations. Rolls-Royce itself has developed a global network of over 30 universities as part of its Research and Technology strategy, and this new enhanced relationship with Virginia will now provide the opportunity to extend this network to the Commonwealth.

Who is CCAM?

CCAM is a not-for-profit, Virginia-based non-stock corporation that was created by the University of Virginia and Virginia Tech in collaboration with their initial industrial partner Rolls-Royce North America, Inc. (RRNA). CCAM is organized to allow multiple universities and multiple companies to participate as equal partners in a research consortium with each university and company contributing its unique strengths to the research mission and program. Research within CCAM will be funded by membership fees paid by member companies as well as by research grants that will be pursued and obtained by the member organizations. The research will be conducted by the universities in collaboration with the companies taking advantage of the unique facilities that CCAM will provide.

It is quite important to stress that CCAM is a member driven organization and, as such, is fully dependent on operating with funds that it receives from membership fees of industrial members, research grants it may receive from federal or other government organizations, or contract services it may provide. The Commonwealth of Virginia, while providing substantial financial support for a host of activities associated with the Rolls-Royce higher education partnership (endowed chairs, university laboratory facility upgrades, matching research funding, internships, etc.) is not funding the construction of the CCAM facility in Prince George County nor providing annual operating funds for the center. Accordingly, the University of Virginia Foundation will build and operate the facility and lease it to CCAM.

The founding members of CCAM (University of Virginia, Virginia Tech, and Rolls-Royce) have worked carefully and diligently in the time since the project was announced in 2007 to develop a business plan and financial model that will be self-sustaining and provide full value to the industrial members in return for their investments through membership fees. As this planning ensued, the economic recession also contributed to shifting plans and some delays in initial project milestones. However, these delays allowed for further exploration and investigation of appropriate research themes, financial planning, and allowed incorporation of important feedback from prospective members on how to better refine the business plan and overall value proposition for CCAM.

Status of CCAM

The founding members in 2010 completed work on the CCAM business plan which includes a detailed research agenda, a governance and organizational structure, a 10-year financial plan,

specific business and research milestones, intellectual property arrangements, and a marketing strategy.

Research Themes

After careful and exhaustive deliberation the initial research themes for CCAM were chosen. The Center will initially focus its applied research efforts on surface engineering and manufacturing systems. These areas seemed to provide meaningful value and potential appeal to a broad spectrum of industrial sectors and did not readily duplicate key research tracks underway throughout the balance of the Rolls-Royce global research network. In both of these technology areas, CCAM will focus on a thorough and practical understanding of the fundamentals, development of technologies and processes that solve problems of industrial importance, the transfer of the technologies into industrial applications, and the solutions to practical problems encountered by manufacturers.

Tax Exempt Status

Application has been filed with the IRS seeking status as a 501(c)(3) tax exempt organization.

Membership Classes

Various classes of memberships to CCAM have been established. These include Organizing Industry Members, Organizing University Members, Tier 1 Industry Members, Tier 2 Industry Members, and Partner Members.

Organizing Industry Members will include those companies that join during the critical formative stages of CCAM and participate in its initial definition and establishment. Rolls-Royce is the first Organizing Industry Member. At present several other companies are actively considering signing letters of intent to become Organizing Industry Members. It is expected that there may be as many as five companies that come in as Organizing Industry Members. Members of this class have additional financial obligations, governance role, and other benefits over and above those associated with Tier 1 Industry Members.

Virginia Tech and the University of Virginia are the Organizing University Members.

Membership Fees

As noted previously, the financial plan for the Center is built upon assumptions related to membership fees from various tiers of Industry Members. Tier 1 members will pay $400,000 per year in membership fees with a minimum of five years membership ($2,000,000 commitment). Tier 2 members will pay $100,000 per year, with a minimum of five years membership ($500,000 commitment).

Feedback received during the planning process indicated that it was vitally important to members that the majority of their funding was directed into the research functions – the key rationale for the Center – as opposed to supporting overhead functions. This was viewed as a fundamental principle of the value proposition allowing for a successful launch, membership recruitment, and attaining the vision of CCAM. Accordingly, no

more than 40 percent of membership fees can be used to support overhead functions, which would include facility costs, research equipment, leadership and staffing, marketing expenses, legal expenses, and the costs of protecting intellectual property resulting from Generic Research conducted by the Center. CCAM has established a goal to cap these overhead costs at 30 percent, but has committed to ensure these costs do not exceed 40 percent.

Legal Counsel Engaged
The law firm of Williams Mullen has been engaged to serve as legal counsel to CCAM.

Board of Directors Named
Members of the Board from the Organizing Members have been appointed and have met in 2010.

Executive Director Sought
Leadership during the planning phase of CCAM has been handled in superb fashion by Virginia Tech and the University of Virginia, with additional support rendered by Rolls-Royce, which has dedicated significant staff resources to this initiative. The process to launch CCAM has led to increased momentum in various workstreams and participants agree that it is in the best interests of the Center to move forward with securing an Executive Director to manage and coordinate activities during this crucial start-up phase. A slate of prospective candidates has been developed and outreach is underway.

Marketing & Recruitment
CCAM engaged a public relations consultant to develop a website and logo for CCAM. The website was launched in 2010 and is found at www.ccam-va.com.

Since membership fees from companies form the basis of CCAM's business and financial plan, major effort has gone into identifying and performing outreach to prospective industrial members, especially Organizing Industrial Members. At present about five companies have expressed strong interest in joining at this level and are working to finalize letters of intent to that end. Other companies are being targeted for either Organizing Member or Tier 1 status. Formal presentations have been given on CCAM both in the U.S. and in the United Kingdom. Media attention and awareness of the initiative are beginning to gain momentum and inquiries about CCAM are on the upswing.

In June 2010, the organizing partners hosted a "University Day" at the Rolls-Royce North American headquarters in Reston, Virginia for the purpose of introducing the CCAM concept to additional potential university partners from Virginia. Ten universities attended the session and initial impressions from attendees were positive. Several universities have expressed strong interest, and all attendees are being asked to formally respond with an indication of interest, a list of relevant capabilities they would bring to the Center, and to designate a primary contact person for continued dialogue.

Facility Planning and Construction

The economic recession and resulting overall project delays probably have impacted the facility planning, design, and construction component of CCAM as much as any phase of the initiative. As noted, without other funding in place for building construction, the University of Virginia Foundation will build the facility and lease it to CCAM. Planning has evolved as has the business and financing plan for the Center.

A key step forward occurred in 2010 as Rolls-Royce has donated 20 acres (twice the size initially contemplated) from its Crosspointe holdings in Prince George County to the University of Virginia Foundation. Design work on the CCAM facility has progressed, and plans are now for a building of about 50,000 sq.ft. allowing ample research laboratory space, meeting and collaborative space, as well as manufacturing process space. A number of key steps remain, but the current timetable now anticipates site work commencing in the Fall 2010, with building construction starting in Spring 2011, resulting in building completion in late 2011/early 2012. Equipment installation and readiness for usage would likely be first or second quarter 2012.

CCAM General Assessment

2010 has been an exceptionally busy year in CCAM's formative stages. Key milestones, as noted above, have been achieved and the founding partners have made substantial progress in refining the vision of the Center into a business plan and financial model that seems to have gained appeal and interest of potential corporate members. The worst of the economic recession seems to be behind us, yet there remains much uncertainty in business circles about the strength and duration of the recovery. It is a very precarious environment in which to launch a venture such as CCAM, and in so doing, pinning the Center's viability largely on membership fees and the hope for attaining government grants. In the U.K. and elsewhere, it is commonplace that national or state governments (or provinces) provide seed funding for capital construction and even some ongoing operating costs. That is not the case with CCAM. In a real sense, the Virginia CCAM model is an untested model, although all parties are committed to its success and believe their vigorous efforts have resulted in a plan which maximizes the chances for success.

Some initial R&D work related to CCAM has, in fact, already begun with research contracts underway on both the campuses of Virginia Tech and the University of Virginia. While the CCAM building is being constructed in Prince George, this activity will continue and grow on these respective campus facilities in Blacksburg and Charlottesville.

The Question of Satellite Facility Feasibility

The founding partners of CCAM, together with the additional stakeholders assembled for this study, have concluded that it would not be prudent at this critical stage in CCAM's gestation and early development to divert attention from ensuring a successful start-up for CCAM as originally envisioned in Prince George County. If CCAM can be successfully launched, manufacturing firms in the Shenandoah Valley and elsewhere in Virginia can become members and beneficiaries of the research performed and technologies explored at CCAM. This, in turn, will

strengthen the viability of the region's economy and enhance the overall competitiveness of Virginia's advanced manufacturing base.

Much good planning and effort has gone into development of what is believed to be a sound and viable business and financial model for CCAM. Significant outreach to prospective industry members has occurred. It is vital that momentum and execution of plans and recruitment efforts continue apace. Without question, the Shenandoah Valley has a strong industrial and manufacturing heritage. As will be noted herein, there are many firms in the Valley who likely would want to become CCAM members. This action item should benefit both the Valley's manufacturing base and CCAM's viability.

Additionally, through engagement with the study stakeholders, we have identified some key priority areas that can serve as a framework for ongoing work to bolster the economy of the region. These actions can be done concurrently with efforts being made to bring CCAM into reality. These actions are summarized on page 19 of this report.

THE SHENANDOAH VALLEY ECONOMY

Layoffs and Plant Closures

From January 2007 through September 2010 a total of 47,904 jobs were lost statewide due to layoffs and business closures. Manufacturing job loss accounted for 53 percent of the total. Of the jobs lost during this timeframe, 2,300 or 4.8 percent of statewide losses occurred in the Shenandoah Valley Region, and 86 percent of Shenandoah Valley job losses were in the Manufacturing sector. That amounts to nearly 2,000 manufacturing jobs lost over the past three years. When those localities contiguous to the Shenandoah Valley are included, total area job loss increases to 4,500 or 9.5 percent of the state total, with 89 percent of affected workers losing manufacturing jobs.

Employment Loss and Business Closures
January 2007 - September 2010

Statewide	Jobs Lost	% of statewide
Manufacturing	25,460	53.1%
Non-manufacturing	22,444	46.9%
Statewide Total	**47,904**	**---**

Shenandoah Valley Region	Jobs Lost	% of total
Manufacturing	1,991	86.3%
Non-manufacturing	317	13.7%
SV Total	**2,308**	**---**

Shenandoah Valley Region and Contiguous Localities	Jobs Lost	% of total
Manufacturing	4,045	89.1%
Non-manufacturing	493	10.9%
SV + Contiguous Total	**4,538**	**---**

Source: Virginia Announcements of Employment Loss and Business Closings.

From 2007 to 2010 the City of Waynesboro witnessed the greatest number of job losses in the region with a reduction of 975 positions. This amounted to 42 percent of total Shenandoah Valley job losses. With 28 percent of Shenandoah Valley job losses, Shenandoah County saw 652 workers lose their positions. When considering the Shenandoah Valley along with its contiguous jurisdictions, in the past three years 13 localities lost more than 100 jobs.

Jobs Lost

January 2007 - September 2010
Shenandoah Valley Region and Contiguous Localities

Location	Jobs Lost
Albemarle Co.	356
Alleghany Co.	231
Amherst Co.	0
Augusta Co.	412
Bath Co.	0
Bedford City	113
Bedford County	0
Botetourt Co.	442
Buena Vista	0
Charlottesville	61
Clarke Co.	387
Covington	127
Culpeper Co.	117
Frederick Co.	0
Harrisonburg	0
Highland Co.	0
Lexington	0
Madison Co.	0
Nelson Co.	40
Rappahannock Co.	0
Rockbridge Co.	124
Rockingham Co.	0
Shenandoah Co.	652
Staunton	145
Warren Co.	0
Waynesboro	975
Winchester	356
Grand Total	**4,538**

Of the 2,308 job losses in the Shenandoah Valley Region, the manufacturing concentrations suffering the most losses were Chemicals, Transportation Equipment, and Food Products, experiencing a total loss of 1,345 jobs. Textile mills and furniture and fixtures also saw a significant employment decrease losing over 500 jobs. When considering the localities contiguous to the Shenandoah Valley Region, major job losses can also be identified in the Computers and Electronics and Electrical Equipment sectors.

Top 10 Sectors Experiencing the Most Jobs Lost in the Shenandoah Valley Region January 2007 - September 2010

Sector	Jobs Lost
Chemicals	662
Transportation Equipment	372
Food Products	311
Textile Mills	265
Furniture and Fixtures	181
Administrative Services	137
Truck Transportation	104
Computers and Electronics	101
Stone, Clay, Glass	90
Telecommunications	37

Top 10 Sectors Experiencing the Most Jobs Lost in the Shenandoah Valley Region and Contiguous Localities January 2007 - September 2010

Sector	Jobs Lost
Transportation Equipment	929
Chemicals	769
Furniture and Fixtures	613
Food Products	311
Computers and Electronics	266
Textile Mills	265
Electrical Equipment	246
Administrative Services	223
Printing	199
Plastics and Rubber Products	127

Unemployment

Unemployment rates in the Shenandoah Valley Region are typically consistent with statewide rates, yet percentages and the number unemployed vary widely across individual member localities with Page, Lexington, Buena Vista and Waynesboro currently experiencing unemployment of nearly 2 to 4 percentage points greater than the current statewide 7 percent. Augusta and Rockingham Counties have the largest number of unemployed with a total of approximately 5,000 without jobs. Total unemployed in the region has increased year over year since December 2007, growing from 5,600 at the beginning of the recession to the current 13,212 unemployed.

Unemployment
December 2007, 2008, 2009 and August 2010
Not Seasonally Adjusted

	December 2007		December 2008		December 2009		August 2010	
Location	Rate	Unemployed	Rate	Unemployed	Rate	Unemployed	Rate	Unemployed
Augusta	2.6%	979	5.1%	1,928	6.7%	2,511	6.6%	2,494
Bath	3.5%	104	6.6%	175	6.9%	176	5.8%	153
Highland	4.2%	48	7.6%	84	8.4%	93	7.3%	85
Page	6.5%	746	11.2%	1,347	13.2%	1,573	10.8%	1,282
Rockbridge	2.7%	419	6.3%	716	7.0%	795	7.6%	835
Rockingham	2.4%	1,031	4.2%	1,794	5.5%	2,326	6.1%	2,576
Shenandoah	3.5%	706	5.9%	1,179	8.5%	1,673	8.2%	1,616
Buena Vista	3.9%	132	7.1%	243	9.2%	314	9.8%	330
Harrisonburg	2.8%	654	4.6%	1,051	6.4%	1,483	7.4%	1,714
Lexington	4.2%	99	6.8%	162	9.4%	225	12.1%	290
Staunton	3.2%	371	5.9%	691	7.6%	893	7.6%	904
Waynesboro	3.6%	371	7.7%	804	7.7%	784	8.9%	933
Shenandoah Valley	3.2%	5,660	5.7%	10,174	7.2%	12,846	7.4%	13,212
Statewide	3.2%	129,775	5.0%	207,302	6.7%	275,288	7.0%	293,477

Source: Virginia Employment Commission.

Employment by Industry

As of first quarter 2010, the Shenandoah Valley Region had a workforce of approximately 135,000. With a loss of 11,500 jobs, total employment in the region decreased 7.9 percent since the beginning of the recession. Major employment sectors include Services employing 45,000 or 33 percent of the workforce, followed by the Government and Manufacturing sectors employing a total of 48,600. From 2007 to the first quarter of 2010, Manufacturing sector employment decreased 14.8 percent, representing a loss of 4,100 jobs.

Employment by Industry
Shenandoah Valley
2007 and 1st Quarter 2010

	2007		1st Qtr. 2010	
Industry Sector	Employment	Percent	Employment	Percent
Natural Resources and Mining	1,192	0.8%	1,256	0.9%
Construction	10,147	6.9%	6,863	5.1%
Trade	23,239	15.9%	20,694	15.3%
Transportation and Utilities	6,125	4.2%	6,160	4.6%
Manufacturing	27,788	19.0%	23,661	17.5%
Information	2,407	1.6%	2,518	1.9%
Financial	4,433	3.0%	3,820	2.8%
Services	46,545	31.8%	45,015	33.4%
Government	24,649	16.8%	24,986	18.5%
Other	0	0.0%	0	0.0%
Total	146,525	100.0%	134,973	100.0%

Source: Virginia Employment Commission, QCEW, (2007 and 1st quarter 2010).

Manufacturing

Manufacturing plays an important role in the Shenandoah Valley Region accounting for nearly 18 percent of the area's workforce. Concentrations employing the most workers include Food (over 8,000 employed) and Printing & Related Support Activities (2,200 employed). These two sectors provide 44 percent of total manufacturing jobs in the region. Other major industries are Fabricated Metal Products, Plastics & Rubber Products, Chemicals, Machinery, and Wood Products which combined employ over 7,000 workers or 30 percent of total manufacturing employment.

Manufacturing Employment in the Shenandoah Valley
1st Quarter 2010

Manufacturing Concentration	Percent of Total Manufacturing Employment
Food	35.1%
Printing & Related Support Activities	9.3%
Fabricated Metal Products	7.2%
Plastics & Rubber Products	6.5%
Chemicals	6.3%
Machinery	5.2%
Wood Products	5.1%
Textile Product Mills	4.1%
Miscellaneous	3.1%
Primary Metals	2.6%
Beverage & Tobacco	2.5%
Computer & Electronic Products	2.4%
Paper	2.1%
Transportation Equipment	2.1%
Nonmetallic Mineral Products	1.8%
Furniture & Related Products	1.5%
Textile Mills	1.4%
Apparel	1.0%
Electrical Equipment & Appliance	0.5%
Petroleum & Coal Products	0.2%
Total	100.0%

Source: Virginia Employment Commission, QCEW (1st quarter 2010).

Major Manufacturers
Shenandoah Valley Region plus Northern Shenandoah Valley and Roanoke Regions

Company Name	Employment
CARGILL MEAT SOLUTIONS CORP	1,500 - 2,499
R R DONNELLEY & SONS COMPANY	1,500 - 2,499
WESTVACO VIRGINIA INC	1,000 - 1,499
MOHAWK ESV INCORPORATED	600 - 999
MCKEE FOODS CORPORATION	600 - 999
M W MANUFACTURERS INC	600 - 999
MERCK & COMPANY INC	600 - 999
RUBBERMAID COMMERCIAL PRODUCTS	600 - 999
YOKOHAMA TIRE CORP	600 - 999
GEORGES CHICKEN LLC	600 - 999
PERDUE FARMS INC	600 - 999
GENERAL ELECTRIC CO	600 - 999
PILGRIMS PRIDE CORP	600 - 999
HERSHEY CHOCOLATE OF VA INC	600 - 999
BERRYVILLE GRAPHICS INC	600 - 999
VA POULTRY GROWERS COOP INC	300 - 599
TENNECO AUTOMOTIVE	300 - 599
MILLERCOORS LLC	300 - 599
TYSON FARMS INC	300 - 599
HOLLISTER INC	300 - 599
KRAFT FOODS NORTH AMERICA	300 - 599
STEEL DYNAMICS ROANOKE BA	300 - 599
AAF MCQUAY INCORPORATED	300 - 599
IAC STRASBURG LLC	300 - 599
HP HOOD LLC	300 - 599
CCBCC INC	300 - 599
E.I. DUPONT DE NEMOURS & CO., INC.	300 - 599
WHITEWAVE FOODS CO	300 - 599
ALCOA HOME EXTERIORS INC	300 - 599
OSULLIVAN FILMS INC	300 - 599
TREX COMPANY INC & SUBSID	300 - 599
PACKAGING CORP OF AMERICA	300 - 599
GRAHAM PACKAGING PLASTIC INC	300 - 599

Source: Virginia Employment Commission, QCEW (1st quarter 2010).

Wages/Income

The Shenandoah Valley's average wage of $33,004 is nearly 32 percent lower than the statewide rate of $48,418. Annual wages increased 4.4 percent from 2007 to the first quarter of 2010; however from 2009 through the first quarter of 2010, the region's wages experienced a reduction of -0.1 percent. During the same time period state wages increased 5.2 percent with a less than 1 percent increase for the first quarter of 2010.

Average Annual Wages
2007 - 1st Quarter 2010

Location	Date	Average Annual Wage	Yr-to-Yr % Change	2007-2010 % Change
Shenandoah Valley	2007	$ 31,616		
Shenandoah Valley	2008	$ 32,714	3.47%	
Shenandoah Valley	2009	$ 33,037	0.99%	
Shenandoah Valley	1Q2010	$ 33,004	-0.10%	4.39%
Statewide	2007	$ 46,017		
Statewide	2008	$ 47,187	2.54%	
Statewide	2009	$ 48,291	2.34%	
Statewide	1Q2010	$ 48,418	0.26%	5.22%

Source: Virginia Employment Commission, QCEW (2007 & 1st quarter 2010).

THE SHENANDOAH VALLEY'S ECONOMIC DEVELOPMENT STRATEGIC INITIATIVES

The Central Shenandoah Valley Region has established a variety of regional strategic initiative focus areas, which include environmental, economic development, intergovernmental cooperation and partnerships, infrastructure, and community. The Economic Development Focus initiatives are noted below:

- Distinguish the Shenandoah Valley as a regional model of an innovation ecosystem that catalyzes resources and accelerates high tech growth through model strategic alliances among business/industry, government, and higher education partners.
- Emphasize existing secondary and higher education, vo-tech, adult education, and workforce training programs which support targeted existing or new business sectors and review for gaps in curriculums. Enhance and work towards 21st century technologies at all education and training levels.
- Identify, promote and invest in regionally significant business niches and sectors that are compatible with the economic, cultural and resource bases of the region and that can produce sustainable economic opportunity and returns to local communities and the region.
- Recognize tourism as a diverse and viable economic development engine with emphasis on regional heritage; eco-tourism; agri-tourism; arts & culture; appropriate hospitality providers including inns, bed & breakfasts; and outdoor recreation sectors.
- Develop and implement a strong existing business retention and expansion program that compliments the economic investment strategy of the region.
- Promote and enhance development of an efficient and effective regional health care infrastructure with emphasis on access to services, affordability, workforce development, and regional cooperation.
- Seek ways to support and utilize to the greatest extent the increasingly diverse mix of races, ethnicities, countries of origin, and special needs populations in our regional workforce and to effectively integrate the knowledge, skills and abilities of all peoples into the economic base of the region.

- Recognize agriculture as a vital element of the economy and focus on opportunities to ensure the long-term economic viability and productivity of agricultural lands. (Central Shenandoah Valley's 2009-2010 Regional Strategic Initiatives)

From this working foundation, the region has declared an economic development approach which embraces technology and innovation while staying close and responsive to the needs of traditional business sectors that form the heritage and culture of the region. The Shenandoah Valley Partnership's (SVP) website highlights the region's diversity and strong ties to its traditional economic base:

> *"Virginia's Shenandoah Valley is a diverse region with a strong manufacturing base and vibrant technology sector that includes innovations in information technology, energy and advanced drug research and development. The Valley's diversity creates a stable economy where companies thrive and grow."*

The region, through the Shenandoah Valley Partnership, has established several Industrial Target Markets for which it is well-suited to build on existing strengths and to pursue growth opportunities that will be compatible with the region. These markets are:

- Information Technology
- Advanced Manufacturing
- Life Sciences (including Drug Research & Development, Pharmaceutical Production, Medical Device Manufacturing)
- Alternative Energy Development
- Sustainable Agriculture

As part of its current Marketing Plan, the SVP acknowledges the need to "Create a business atmosphere that encourages the retention and growth of existing business." A specific supporting strategy is to:

> "Support a coordinated regional workforce development network
>
> a. Assess workforce needs of the region
> b. Facilitate implementation of workforce development programs" (Shenandoah Valley Partnership, Economic Development Marketing Plan, July 2009-June 2010)

This workforce emphasis is highlighted further in the next section and represents a top priority for the region's leadership in support of overall economic development and strengthening the manufacturing sector, especially in the current uncertain economic environment of 2010.

WORKFORCE DEVELOPMENT: THE TOP PRIORITY FOR VALLEY MANUFACTURERS

In the stakeholders' deliberations which encompassed the state of the region's economy, existing assets in place to support economic development, and the potential for research and development to support facets of the advanced manufacturing base, considerable attention was devoted to workforce development as being in the forefront of any new initiatives the region should undertake. Particular acknowledgement was given to the historical cooperative and collaborative

nature of workforce development projects in the Valley, and that this provides a solid foundation for additional necessary work required to keep the region's manufacturing base competitive. A sub-committee of the stakeholders' working group led by Dr. John Downey, President of Blue Ridge Community College and Ms. Sharon Johnson, Director of Regional Workforce Development, Shenandoah Valley Workforce Investment Board developed the following proposal.

Preparing and maintaining a highly skilled workforce for the advanced manufacturing base that is already in the Valley, as well as attracting new manufacturers to a region of the state recognized for hard working and productive employees, constitute the two critical issues facing our region today. Employers in the area consistently cite the obstacle of ongoing workforce development as a growing concern, despite the recognition of an outstanding partnership of education and training providers available locally. A landmark study of the local workforce development needs of the Valley was commissioned by the Shenandoah Valley Partnership and completed by SRI, International in January of 2008: (http://policyweb.sri.com/cep/publications/downloads/MasterPlan21stCenturyWorkforceTransitions_final.pdf) .

Among the issues sited in the SRI study, the report noted that "there has been little regional action or communication among stakeholders to address chronic workforce challenges," despite the fact that, "individuals and organizations are willing to collaborate to identify workforce problems and create solutions."

Proposals for Action

Given the history and background of workforce development challenges in the valley, we propose a two pronged plan in response to the General Assembly's call for a feasibility study. First, we propose a research study, entitled *The Changing Manufacturing Workforce in the Shenandoah Valley: A look at regional issues related to worker up-skilling and an aging workforce.* The proposed study is intended to frame regional understanding of the workforce issues in this critical industry sector during a time of economic stabilization, to provide the foundation for formulation of workforce initiatives to support industry, and to provide a model and tools for regional replication of the proposed study within the Commonwealth. Building upon the challenges identified in the SVP/SRI Workforce Transitions report, the new study will examine industry specific perspectives on up-skilling and workforce aging. The report will result in the identification of specific methods in which regional collaboration across industry partners and education providers can lead to a more skilled workforce which will help retain existing industry and attract new manufacturers to the region.

Second, along with the CCAM efforts, Blue Ridge Community College is leading an effort, in partnership with a large manufacturer (Merck), to begin to address the emerging workforce needs of regional manufacturers. Working with numerous local and state partners, a program is already in the process of being developed that will systematically review the workforce training needs of area manufacturers and identify gaps in existing training resources. Once those gaps are identified, the partners will look to state, federal and private funding sources to develop curriculum that fills the gaps identified in the comprehensive review. In some cases, the gap analysis will identify not only curricular and instructor deficiencies, but also facility, equipment and other resource needs required to address specific workforce development challenges. The proposed study will significantly enhance the efforts of Blue Ridge Community College, along

with other regional community colleges and workforce and economic development partners, to immediately and adequately address the workforce training issues already identified by industry partners.

The Case for State Support:

The initiative of the 2010 General Assembly to examine the feasibility of a satellite CCAM center in the Valley is helpful in responding to regional manufacturing challenges and job creation goals. However, to ensure the long-term viability of existing manufacturing in the Shenandoah Valley and to attract new industry to the region, concentrated efforts for ensuring a more educated and skilled workforce is an essential prerequisite. Therefore we propose that the Commonwealth of Virginia invest in workforce development in two specific ways. First, we seek an investment in a proposed study entitled *The Changing Manufacturing Workforce in the Shenandoah Valley: A look at regional issues related to worker up-skilling and an aging workforce.*

The proposed study is of the utmost importance to the Shenandoah Valley because as of the first quarter of 2010 almost 18 percent of the workforce was employed in the manufacturing sector, making it the third highest employment industry in the region behind the Services and Government sectors. This is remarkable considering 4,127 local workers have lost manufacturing jobs since January 2007. The region's population by age has consistently been older than state and national levels. This is especially evident in the manufacturing workforce where currently 51% of the workers are 45-65 years old. In addition to the known labor market data, employers have anecdotally voiced concerns regarding an aging workforce and the need to up-skill workers as technology and production advances require an advanced, specialized or integrated worker skill set. Therefore, the primary study focus will be on examining:

- skill shortages in the current workforce;
- the magnitude of retirement age eligible workers;
- employer practices for knowledge and job skill transfer from older to younger workers; and
- employer needs regarding workforce up-skilling and an aging workforce.

Whereas the SVP/SRI Transitions study identified the fact that, despite the expressed willingness for collaboration, there has been little regional communication or action on specific workforce development needs, the proposed study will result in an organized process for ensuring that those needs are clearly identified, and that regional educational partners are quick to respond. Steps were immediately taken to address the Transitions study recommendations and regional partners are currently working together to implement a workforce plan to address green skill development for dislocated, unemployed and incumbent workers. The Shenandoah Valley Energy Partnership (SVEP) consists of 16 education, workforce and economic development partners and employer associations. These partners are successfully implementing weatherization, renewable energy, efficiency assessment, green and sustainable construction programs, and placing workers into employment.

To build upon these successes, the current proposal leverages the collaborative commitment of the SVEP partners to address manufacturing workforce needs. Job retention and career development in the Shenandoah Valley are highly dependent upon an organized approach to workforce training. The proposed study, and the resulting collaborative approach to need identification and service delivery, will directly result in job retention and creation.

Lead organizations responsible for the study would be the Shenandoah Valley Workforce Investment Board (SVWIB) and the Shenandoah Valley Partnership (SVP). Blue Ridge Community College will be the lead agency for implementation once the processes identified in the study are established. An existing base of collaborative workforce, education and economic development partners currently exists and is successfully working together to implement additional workforce projects such as the Shenandoah Valley Energy Partnership (SVEP). The proposed study will be designed and conducted in partnership with regional leaders in the manufacturing sector. Industry leaders' study objectives include:

- perceptions regarding workforce up-skilling, the older workforce and potential for brain drain;
- assessment of the impact an older workforce and impending worker retirements has on business; and
- an understanding of how prepared industry leaders feel they are regarding an aging workforce and transfer of knowledge and skills between workers.

For purposes of the proposed study, the Shenandoah Valley is defined as an expanded 20 locality region and includes the counties of Rockingham, Augusta, Highland, Bath, Rockbridge, Alleghany, Page, Shenandoah, Frederick, Warren, Clarke, Fauquier, Rappahannock and the cities of Winchester, Harrisonburg, Staunton, Waynesboro, Lexington, Buena Vista, and Clifton Forge. This existing partnership region encompasses the service regions for the SVWIB, SVP, Blue Ridge Community College, Dabney S. Lancaster Community College, and Lord Fairfax Community College. To address data collection in a region of this size, the initial proposed methodology includes focus groups, informant interviews, an exploratory survey, and extant data sources. Of key importance will be the findings from the SVP/SRI Workforce Transitions Study and the Skilled Trades Gap Analysis Report, a 2007 study commissioned by the Virginia Manufacturers Association, Virginia Workforce Council and Virginia Manufacturing Advisory Council. The proposed study will seek to expand the body of knowledge from previous studies by drilling deeper within a specific region, the Shenandoah Valley, and within a specific industry, manufacturing.

Secondly, through this proposal we also seek to address the immediate workforce development needs of the region by creating the infrastructure to respond to the industry-specified training requests that already exist, and which emerge as a result of the study. Industry leaders in the region have expressed a strong desire for a single point of contact for workforce training needs. That single point of contact must be a partner who is well aware of the wide range of education and training service providers and who can leverage the full range of providers in a manner that quickly and responsively addresses expressed industry needs. The regional education partners listed above all have a range of curricula and training courses that are serving the needs of the

industry now. A centralized coordinator that industry can rely upon to match training needs with skilled training providers is a critical deficiency in the region. Our proposal requests seed funding that will allow the region to hire a single point of contact, housed at and supervised by Blue Ridge Community College, on behalf of the range of industries in the partnership. In addition, we are seeking seed funding that will allow regional education providers to immediately hire industry-identified instructors who can provide curricula right away that will be designed to develop the skills and technical competency of existing employees in existing manufacturing plants. We believe once the program is established using seed funding, the industry partners will sustain the delivery of instruction by underwriting the cost of training provided by all the education partners involved in this proposal. Most regional manufacturers have already invested in the technology upgrades necessary to compete in the competitive global economy. The region simply needs to ramp up for the high number of new and existing employees that need training and retraining to use the high tech equipment that the companies have invested in.

Funding Proposal:

In response to the workforce needs identified as a result of the legislative request to explore a CCAM satellite center, we propose the one-time state funding of the prerequisite proposal outlined above. Specifically we suggest the following allocations:

Research Study **$150,000**

Funds are requested to plan, coordinate and conduct the regional study, to contract expertise for data collection and analysis, for regional outreach and communication, to reimburse for regional travel (proposed region covers over 6,000 square miles), and to print and distribute results. The Shenandoah Valley Partnership and the Shenandoah Valley Workforce Investment Board will be the lead agencies coordinating this study.

Response to Immediate Needs **$150,000**

Funds are requested to establish a specific point of contact, housed at and supervised by Blue Ridge Community College, to coordinate industry specified training in partnership with regional education and training providers. Secondly, funding will be used to provide seed money to those existing training and education partners so that the already expressed workforce training needs of manufacturers can be immediately addressed. Blue Ridge Community College will be the lead agency coordinating the response to industry-specified workforce development needs.

The Shenandoah Valley of Virginia continues to enjoy a strong manufacturing employment base because of the investment of local companies in technology, the strong work ethic and productivity of the local workforce, and because of the quality of life available for families who relocate to the region. As the manufacturing workforce ages, the challenges of retraining existing employees to learn emerging technology and to educate the next generation of workers, are critical needs our region must address in the next decade. The current proposal employs the CCAM satellite proposal as an impetus for addressing a prerequisite need for an organized method to address these challenges in the coming years.

RECAP OF RECOMMENDATIONS & FINDINGS

The Commonwealth Center for Advanced Manufacturing represents an important opportunity to establish in Virginia a true industry-led, university-executed research collaboration model. This model has enjoyed success internationally, and many believe this initiative can be a blueprint for fostering collaborations in other industry sectors, bringing universities and the private sector together to boost corporate competitiveness, and in so doing, enhancing regional and state economic performance. After almost three years of planning, key steps have occurred in 2010 that have provided clarity of purpose and a business model that is believed to be viable and achieves the vision for the Center. Nevertheless, as a new and untested venture, there is risk in this endeavor, particularly given the tenuous economic landscape. A sufficient number of Organizing and Tier 1 members need to be recruited to enable a successful launch of the Center. In addition to its key mission and vision noted herein, CCAM can be viewed as an asset which can support the creation and strengthening of an advanced manufacturing cluster extending to all parts of the Commonwealth. CCAM membership has no geographic boundary requirements; companies anywhere can tap into the research and technology benefits the Center affords. Thus duplicating a separate facility elsewhere in the state brings no additional value to members but would likely significantly increase the Center's overall cost structure.

1. Consequently, the key finding of this report is that the stakeholders associated with preparing the report have determined that it is not feasible at this time to consider establishment of a satellite facility of CCAM in the Shenandoah Valley or in any other location other than the Center's site in Prince George County. The full, undiluted attention of the CCAM leadership should be focused on ensuring a successful start-up, construction and outfitting of the facility, expected to be completed in 2012, building the membership base of corporations and other academic partners, and in conducting the critical translational research programs originally envisioned.

2. Given the significant manufacturing presence in the Shenandoah Valley, there are a number of manufacturing companies in the region which should be targeted for membership in CCAM. By becoming members of CCAM, these companies will have ready access to the research assets and innovation capacity they will need to stay competitive, and in so doing, will aid in job creation and economic development in the Valley region. The Shenandoah Valley Partnership, in concert with the local economic development organizations in the region, should coordinate with CCAM leadership on identifying and prioritizing regional firms for CCAM membership outreach.

3. Within the manufacturing sector, the Valley exhibits strong assets associated with the medical and pharmaceuticals arena. Merck's facility in Rockingham County continues to invest heavily in its operations and SRI International's new R&D Center for Advanced Drug Research (CADRE) appear to be anchor assets that can be leveraged in this growing and important field. These are unique opportunities around which the Valley may be able to carve out its own distinctive niche for R&D and economic development. The Shenandoah Valley Partnership is recommended as the organization that could best engage and convene relevant stakeholders to pursue this initiative.

4. The stakeholders group from the Valley concluded: *"Although the CCAM satellite idea would be potentially helpful to the region, a more urgent, prerequisite need in our region is a coordinated response to workforce development, so that the Valley can successfully retain and create additional jobs."* To that end, the group specifically recommends embarking on a research study, to be entitled "*The Changing Manufacturing Workforce in the Shenandoah Valley: A look at regional issues related to worker up-skilling and an aging workforce."* This study is intended to examine skill shortages in the regional workforce, the magnitude of retirement age eligible workers, employer practices for job skill transfer from older to younger workers, and employer needs regarding workforce up-skilling and an aging workforce. It is anticipated that this study could provide a model for regional replication elsewhere in the Commonwealth. Thus, it is further recommended that state grant support to undertake this vital research be secured at an estimated $150,000.

   Further, a second workforce related recommendation is to seek state grant support to establish a specific point of contact, housed at and supervised by Blue Ridge Community College, to coordinate industry specified training in partnership with regional education and training providers. The funding sought will also be used to provide seed money to those partners to help launch programs to immediately respond to already expressed workforce training needs of manufacturers. The funding required to conduct this immediate need response is $150,000.

   The Shenandoah Valley Partnership, the Shenandoah Valley Workforce Investment Board, and Blue Ridge Community College should coordinate and lead efforts to advocate for and pursue all relevant state and other potential funding sources to best respond to this high priority need for the manufacturing community identified in the course of this CCAM satellite feasibility study.