



Analysis of Modeling & Simulation

# SOUTHERN PIEDMONT REGION

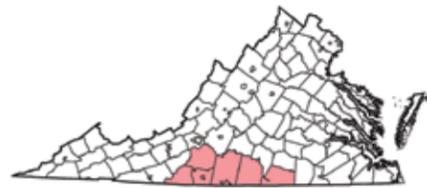
REPORT SUMMARY

The ASTA Group, LLC • November 2014

This study was prepared under contract with the Commonwealth of Virginia, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of the Commonwealth of Virginia and does not necessarily reflect the views of the Office of Economic Adjustment or the Department of Defense.



# Southern Piedmont Regional Overview



The Southern Piedmont region has key pieces in place to create an M&S technical workforce and draw businesses to the area. On the forefront are the Southern Virginia Higher Education Center (SVHEC), which is focused on education of advanced manufacturing, design and nursing, and the Riverstone Energy Center, with its research capacity. Key infrastructure includes Mid-Atlantic Broadband Cooperative and Broadband Infrastructure (400 Gbps) headquartered in Halifax, Virginia.

## Asset Summary

Three M&S assets were identified in the region.

Industry Sector	Total Employment	M&S Specific Employment
Total Southern Piedmont Region Employment	138,875.34	
Total Southern Piedmont Region Employment, M&S Related Sectors Only	6,646.34	66.46
Pharmaceutical Preparation Manufacturing	86.03	0.86
Other Commercial & Service Industry Machinery Manufacturing	5.25	0.05
Ship Building & Repairing	0.00	0.00
<b>Software Publishers</b>	1.61	0.02
Telecommunications	438.72	4.39
Other Information Services	7.45	0.07
Architectural, Engineering & Related Services	482.11	4.82
<b>Custom Computer Programming Services</b>	421.31	4.21
<b>Computer Systems Design Services</b>	452.83	4.53
Other Computer Related Services, Including Facilities Management	50.95	0.51
<b>Management, Scientific &amp; Technical Consulting Services</b>	237.33	2.37
<b>Scientific Research &amp; Development Services</b>	46.66	0.47
<b>All Other Miscellaneous Professional, Scientific &amp; Technical Services</b>	131.55	1.32
Other Private Educational Services	435.95	4.36
Private Hospitals	3,848.60	38.49

Bold text indicates core sectors of the M&S industry.

## Regional Employment in M&S

This table includes estimates for total employment in the region, for employment in M&S related sectors, and estimates for employment in each individual industry sector analyzed in this study.

As shown in the table, the related sector of *Architectural, Engineering & Related Services* has higher employment than any other M&S industry sector in the Southern Piedmont region.

Also shown in the table, about 4.8% (6,646.34) of the region's total employment (138,875.34) is comprised of employment in the M&S related sectors. Approximately 0.05% of the total for M&S related sector employment is actually M&S specific in each sector.

### Economic Impact

The M&S contribution to the regional GRP is estimated at \$138-\$155 million. The total economic impact of M&S on the regional economy is estimated at \$270-\$301 million.

Growth projections for M&S industry sectors within the Southern Piedmont region range from 15% to 20% through 2020. Analyses project that M&S will contribute \$1.2-\$1.4 billion to the regional GRP, from 2011-2020.

### Market

Riverstone Energy Center has an M&S Center of Excellence for training, education and industry collaboration. The facility includes a fully-immersive 3D theater with OCLUS RIFT visualization technology, a communication and marketing center to promote startup businesses, and a National Coatings Laboratory for research of product coatings for advanced manufacturing.

### M&S Workforce

The SVHEC integrates M&S tools into 125 training programs focusing on product design, nursing and applied manufacturing research workforce development. Significant M&S capabilities exist in the personnel, tools and facilities that comprise its Research & Development Center for Advanced Manufacturing & Energy Efficiency, Center of Nursing Excellence and studio production facilities.

### M&S Networking and Collaboration

Collaborative relationships are ongoing with Riverstone Energy Center and SVHEC, The University of Virginia, Virginia Tech, Old Dominion University, Oak Ridge National Lab, and Center of Innovation and Technology. The SVHEC partners with eleven higher education institutions to serve counties in the region. Issues with collaborative endeavors include cost relative to revenues and the ability to generate, in a higher educational setting, the financial support to maintain skilled personnel.

### Solutions

Stakeholders would like the Commonwealth to invest in a digital manufacturing hub that enables manufacturers to simulate product development, performance, manufacturing and virtual reality (VR) workforce training. A five-year program would help the region afford to recruit and hire an M&S team. They suggest the Commonwealth provide tax credit or Work Force Investment Board Support to assist manufacturers and other companies with the cost of implementing M&S.



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## Report Description

This report provides regional highlights of a 2013 study undertaken to assess the state of Modeling and Simulation (M&S) within Virginia, analyze its economic impact, and identify projected growth areas. The study produced an inventory of Commonwealth M&S assets, a survey of M&S business regionally, economic analyses of the M&S sector and workforce, and a meta-analysis of previous studies. Focus group interviews were held in each Commonwealth region to provide insight and information about M&S. Participating stakeholders represented academia, government and industry. Impact Analysis for Planning (IMPLAN®) and United States Bureau of Labor Statistics data were used for the economic and workforce analyses. The full report can be found online at the following websites:

ModSim Connected: [modsimconnected.com](http://modsimconnected.com)

Secretary of Technology: [technology.virginia.gov](http://technology.virginia.gov)

