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**The Regional Economic Impact  
of the  
Northern Virginia Workforce System**

**October 2008**



## Executive Summary

**This report assesses the economic and fiscal impact attributable to the career training and job placement services provided by the Northern Virginia Workforce System in fiscal year (FY) 2008. The principle findings from that assessment are as follows:**

**1. The Northern Virginia Workforce System plays a vital role in serving the workforce needs of northern Virginia – the engine that drives Virginia’s economy.**

- The Northern Virginia Workforce System provides workforce services to Fairfax, Loudoun, and Prince William counties, and the cities of Fairfax, Falls Church, Manassas, and Manassas Park.
- In 2007, these seven localities accounted for 22 percent of Virginia’s total population (*i.e.*, 1.7 million out of 7.7 million individuals) and 24 percent of total statewide employment (*i.e.*, 0.9 million out of 3.7 million jobs).
- These communities provide about 35 percent of the total individual state income tax collected in Virginia (\$3.0 billion out of \$8.4 billion).
- Between 2004 and 2014, Northern Virginia is projected to account for 39 percent of total statewide job growth (*i.e.*, 233,517 out of 595,760 new jobs).

**2. One consequence of this robust job growth is that the Northern Virginia economy faces a tight labor market. This raises the importance of workforce services in ensuring an adequate supply of labor, thereby keeping “Now Hiring” signs from turning into “Going Out of Business” signs for want of qualified workers.**

- Unemployment in Northern Virginia is substantially below the statewide and national level. In September 2008 (the most recent period for which data are available), Northern Virginia’s unemployment rate was 3.2 percent, as opposed to 6.0 percent nationally and 4.2 percent statewide.
- Wages in Northern Virginia also tend to significantly exceed the statewide average. In the first quarter of 2008 (the most recent period for which data are available), average weekly wages were \$1,226 in Northern Virginia in contrast to \$915 statewide.

**3. The Northern Virginia Workforce System is highly effective at providing career training and job placement services that transition previously unemployed individuals into good paying jobs.**

- In FY 2008, through its Workforce Investment Act (WIA), Base Realignment and Closure (BRAC), Virginia Serious and Violent Offender Re-Entry Initiative (VASAVOR), Pre-Release Center (PRC), and Center for Business Planning and Development (CBPD) programs, the Northern Virginia Workforce System was responsible for placing 234 previously unemployed individuals into jobs.
- If one includes self-referred individuals who take advantage of the Core Services provided through the Northern Virginia Workforce System, the number of individuals placed into jobs in FY 2008 increased from 234 to 1,176.
- Average salaries for these jobs ranged from \$16,640 to \$46,305.

**4. The career training and job placement services provided by Northern Virginia Workforce System have a large economic impact on Northern Virginia.**

- The combined pre-tax income of the 234 previously unemployed individuals placed into employment through the Northern Virginia Workforce System's FY 2008 WIA, BRAC, VASAVOR, PRC, and CBPD programs was approximately \$7.4 million.
- These salaries contributed to the Northern Virginia economy in several ways.
  - i. First, they had a direct economic impact of approximately \$7.1 million. This direct economic impact is attributable to the consumption expenditures (*e.g.*, housing, food, clothing, transportation, and entertainment) that these 234 newly employed individuals were able to make because of their salaries.
  - ii. Second, they had an indirect economic impact of approximately \$1.7 million. This indirect economic impact is attributable to the "ripple effect" that the initial consumption expenditures had as they moved through the regional economy (*e.g.*, as those expenditures became someone else's income and were then in turn spent on additional consumption, which became someone else's income, etc.).
  - iii. Total economic impact was therefore approximately \$8.7 million. It is important to note that this total economic impact also generated an

additional 49 jobs, as well as \$492 thousand in federal tax revenue, and \$418 thousand in state and local tax revenue.

- If one broadens the scope of available workforce services to include self-referred individuals who take advantage of the Northern Virginia Workforce System's Core Services, the combined pre-tax income of the 1,176 previously unemployed individuals placed into employment in FY 2008 was approximately \$34.1 million.
- These salaries also contributed to the Northern Virginia economy in several ways.
  - i. They had a direct economic impact of approximately \$33.6 million and an indirect economic impact of approximately \$8.1 million, for a total economic impact of approximately \$41.7 million
  - ii. In addition, this total economic impact was associated with 235 added jobs, along with \$2.3 million in federal tax revenue, and \$2.0 million in state and local tax revenue.

**5. Comparing the costs associated with the programs to the economic benefits associated with them shows that benefits far exceed costs.**

- In FY 2008, the cost associated with the WIA, BRAC, VASAVOR, PRC, CBPD, and Core Services programs provided by the Northern Virginia Workforce System was approximately \$2.5 million.
- Comparing that cost to the \$8.7 million economic impact associated with the WIA, BRAC, VASAVOR, PRC, and CBPD programs shows that the benefit/cost ratio associated with these programs is 3.5 – indicating that benefits are three-and-a-half times greater than costs.
- If the analysis is expanded to include Core Services as well, the benefit/cost ratio rises to approximately 16.7 – indicating that benefits are nearly seventeen times greater than costs.

**6. In conclusion, the Northern Virginia Workforce Services System provides workforce services to the seven localities that serve as the engine of Virginia's economy. Those services serve a valuable function that enables the Northern Virginia economy to continue to function in the face of tight regional labor market. Moreover, as empirically quantified in this report, the economic benefit derived from those services is substantial.**

## Introduction

This report assesses the economic and fiscal contribution that the Northern Virginia Workforce System's fiscal year (FY) 2008 career training and job placement services made to Northern Virginia.<sup>1</sup> This report was prepared by Mangum Economic Consulting, LLC at the request of the SkillSource Group, the non-profit arm of the Northern Virginia Workforce Investment Board.

## Background

The Northern Virginia Workforce System serves the localities of Fairfax, Loudoun, and Prince William counties, and the cities of Fairfax, Falls Church, Manassas, and Manassas Park. A map depicting these localities along with the locations of the SkillSource Group's various service centers is provided in Figure 1.<sup>2</sup>

The mission of the Northern Virginia Workforce System is simple – to foster a globally competitive business environment in Northern Virginia. It does that by:

- aiding in the creation of a well-trained workforce to keep regional businesses competitive,
- providing the services and workforce information that enable businesses to connect with qualified job applicants,
- helping residents find their way to meaningful employment,
- facilitating the transition of ex-offenders and others with employment challenges into the community by providing them with the skills they need to become and remain employed, and
- preparing today's young adults for tomorrow's jobs.

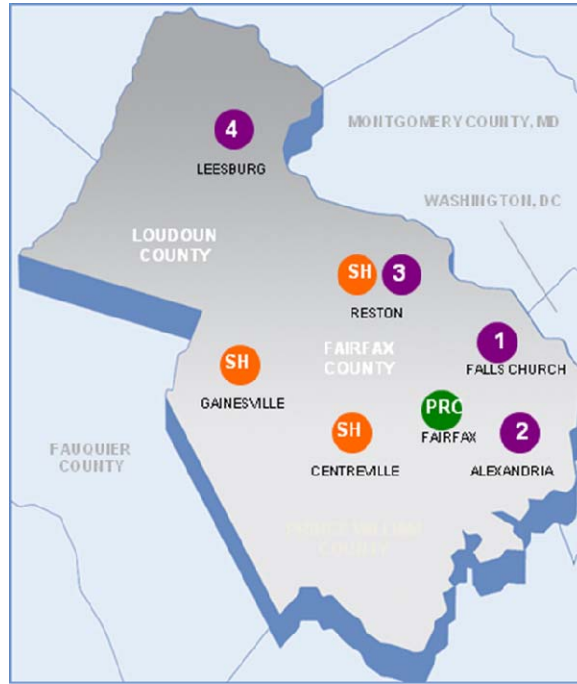
The vital importance of this mission, not only to Northern Virginia but to the Commonwealth as a whole, is reflected in the extent to which the economies of these seven localities serve as the engine that drives Virginia's economy. As shown in Figure 2, in 2007 these seven localities accounted for 22.4 percent of Virginia's total population (or 1.7 million out of 7.7 million individuals). As shown in Figure 3, in 2007 they also

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<sup>1</sup> July 1, 2007 through June 30, 2008.

<sup>2</sup> The addresses of these facilities are as follows: 1) Falls Church SkillSource Center, 6245 Leesburg Pike, Falls Church, 2) South County SkillSource Center, 8350 Richmond Highway, Alexandria, 3) Lake Anne Employment Resource Center, 11484 Washington Boulevard West, Reston, 4) Loudoun Workforce Resource Center, 102 Heritage Way, Northeast, Leesburg, PRC) Fairfax County Pre-Release Employment Center, 10520B Judicial Drive, Fairfax, SH-Reston) SHARE Network Site at Reston Interfaith, 11150 Sunset Hills Road, Reston, SH-Centreville) SHARE Network Site at Katherine Hanley Shelter, 13000 Lee Highway, Fairfax, and SH-Gainesville) SHARE Network Site at Auspicious Cloud Monastery, 2101 James Madison Highway, Haymarket.

accounted for 24.0 percent of total statewide employment (or 0.9 million out of 3.7 million jobs).<sup>3</sup> In addition, it bears notice that these localities are responsible for providing about 35 percent of the total individual state income tax collected in Virginia.<sup>4</sup>



**Figure 1: SkillSource Group Service Area and Service Center Locations**

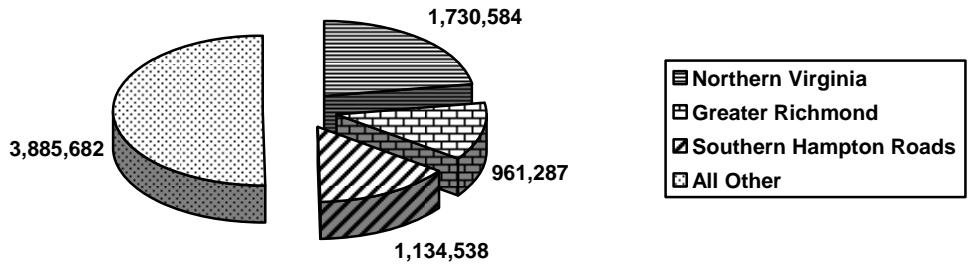
Even more importantly, as shown in Figure 4, between 2004 and 2014 it is anticipated that Northern Virginia will be responsible for 39.2 percent, or nearly two-fifths, of Virginia’s total statewide job growth (or 233,517 out of 595,760 new jobs).<sup>5</sup> The largest proportion of this growth will be fueled by the Professional and Technical Services sector. Whereas in 2007 this sector made up 10.0 percent of total employment statewide, in Northern Virginia it comprised 20.4 percent (*see* Figure 5) and by 2014 is projected to rise to 23.7 percent.<sup>6</sup>

<sup>3</sup> *Data Sources:* U.S. Census Bureau and Virginia Employment Commission.

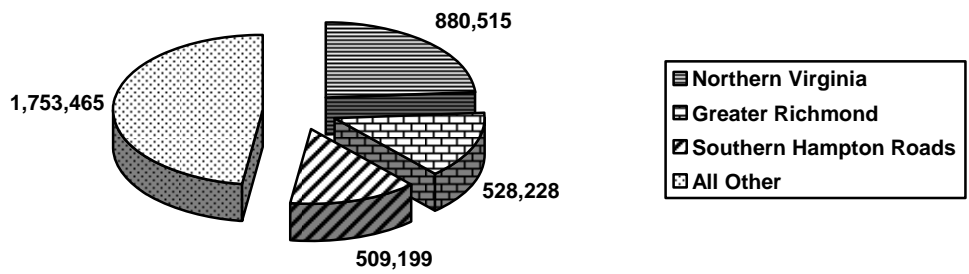
<sup>4</sup> *Data Source:* Virginia Department of Taxation, “Annual Report – Fiscal Year 2007.” In taxable year 2005 (the most recent year for which data are available) the seven localities that comprise the Northern Virginia Workforce System had a total individual income tax liability of \$3.0 billion. This total accounted for 35.1 percent of the state’s \$8.4 billion in individual income tax liability that year.

<sup>5</sup> *Data Source:* Virginia Employment Commission. The Virginia Employment Commission’s 2004 to 2014 sub-state employment projection for northern Virginia includes data for both the Northern Virginia and Alexandria/Arlington Workforce Investment Boards.

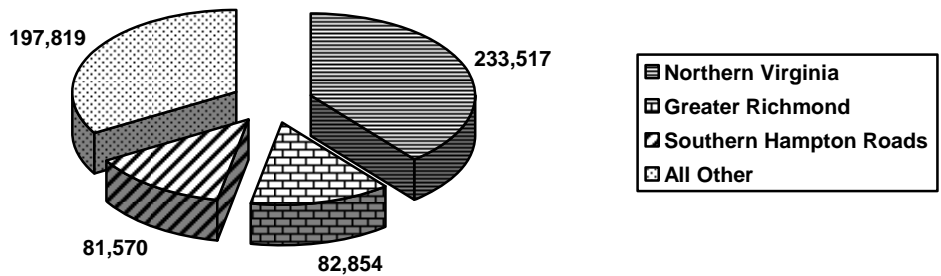
<sup>6</sup> *Data Source:* Virginia Employment Commission.



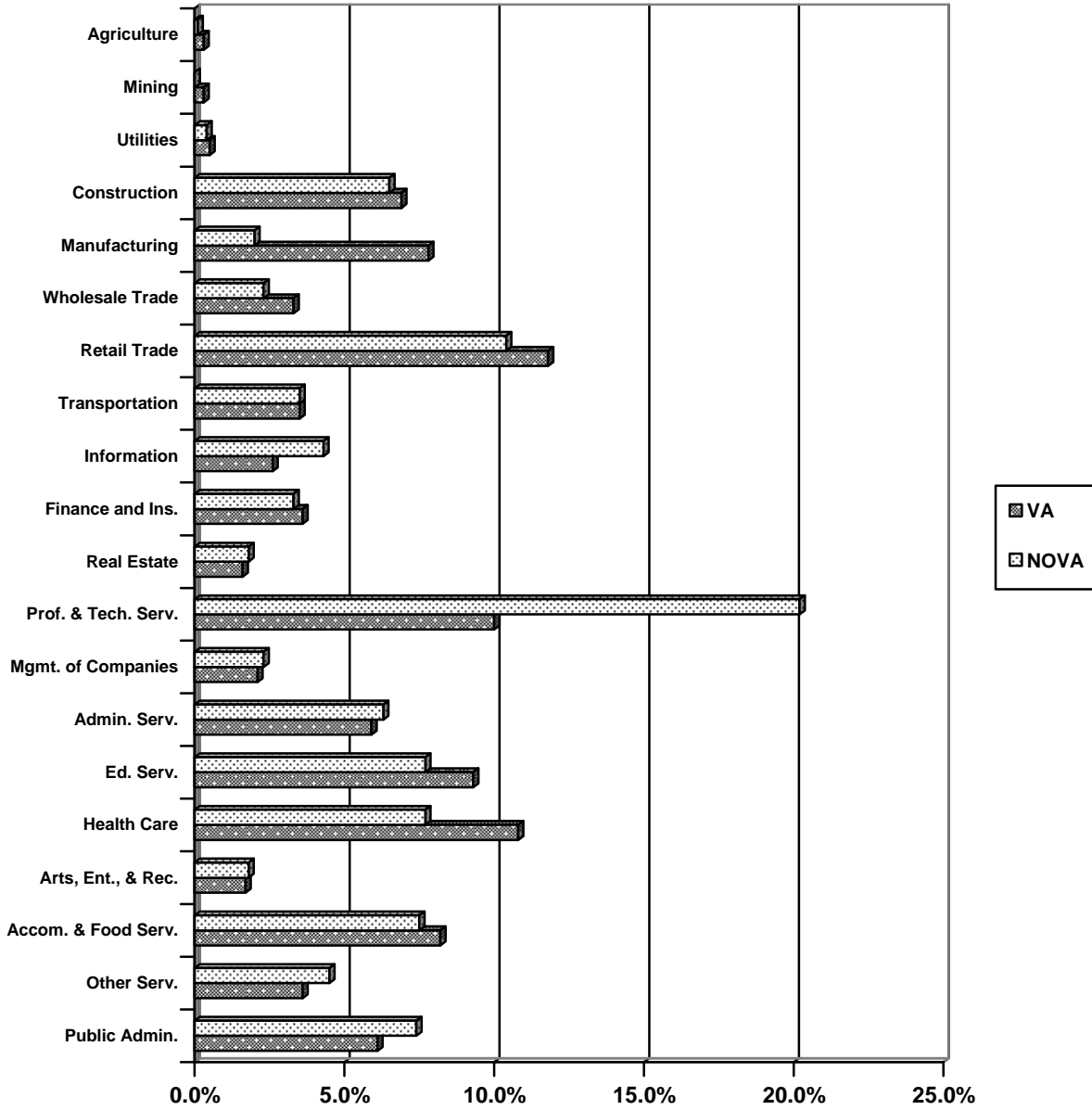
**Figure 2: 2007 Virginia Population by Region**



**Figure 3: 2007 Virginia Employment by Region**

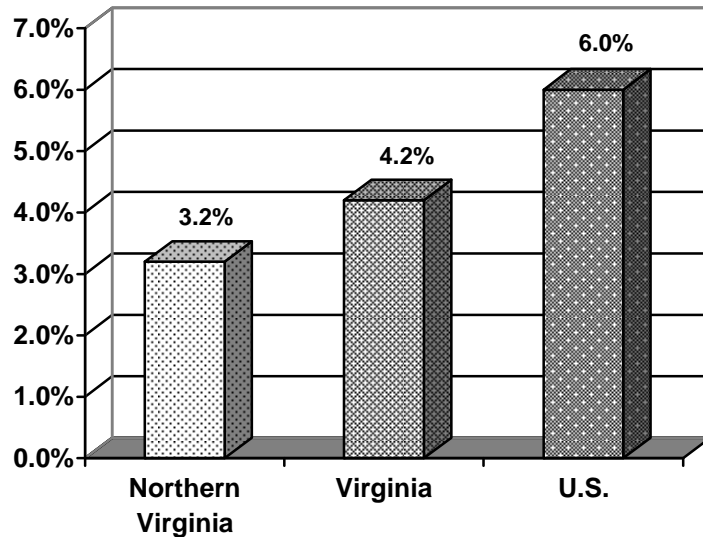


**Figure 4: 2004 to 2014 Projected Change in Employment in Virginia by Region**



**Figure 5: 2007 Employment by Sector – Northern Virginia vs. Virginia**

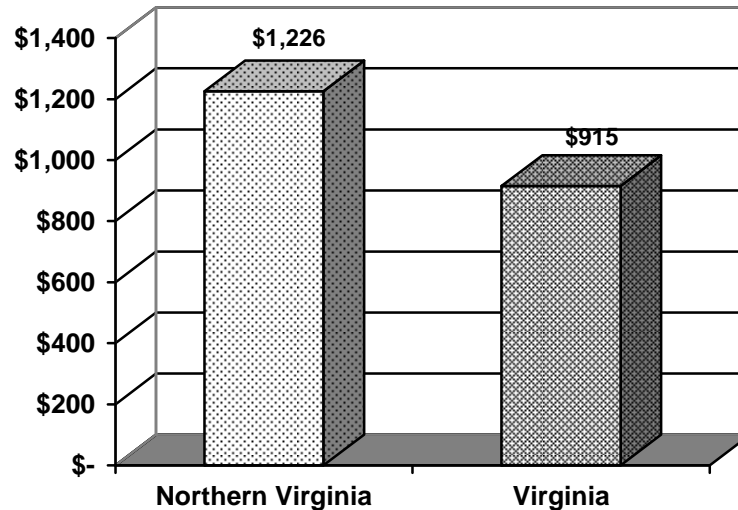
An important consequence of this robust job growth is that the economy of Northern Virginia operates under the constraint of a tight labor market. This condition is evidenced by the fact unemployment in Northern Virginia is substantially below the statewide and national level. As shown in Figure 6, in September 2008 (the most recent period for which data are available) Northern Virginia’s unemployment rate was 3.2 percent, as opposed to 6.0 percent nationally and 4.2 percent statewide.<sup>7</sup> The tightness of Northern Virginia’s labor market is also evidenced by the fact that wages in Northern Virginia significantly exceed the statewide average. As shown in Figure 7, in the first quarter of 2008 (the most recent period for which data are available) average weekly wages in Northern Virginia were \$1,226 as opposed to \$915 statewide.<sup>8</sup>



**Figure 6: September 2008 Unemployment Rate**

<sup>7</sup> Data Source: Virginia Employment Commission.

<sup>8</sup> Data Source: Virginia Employment Commission.



**Figure 7: First Quarter 2008 Average Weekly Wages**

This under-supply of labor raises the importance of the workforce services that the Northern Virginia Workforce System provides by making it that much more critical that the Northern Virginia labor market function as efficiently as possible. In an environment where labor is a scarce resource, it becomes vitally important that available workers are provided with the education and training that will make them job-ready as quickly as possible. It is also vitally important that workforce development services are extended to all segments of the population with the potential to find meaningful employment. Absent these efforts, critical labor shortages can create an environment where “Now Hiring” signs start turning into “Going Out of Business” signs for want of qualified workers.

## Services

In FY 2008, the Northern Virginia Workforce System provided career training and job placement services through eight separate workforce programs:

- Workforce Investment Act (WIA) Adult Program – provides employment and training services to assist adults (individuals 18 years of age and older) in finding meaningful employment.
- WIA Dislocated Worker Program – provides employment and training services to dislocated workers (an individual who has been terminated or laid off, or has received notice that they will be terminated or laid off) in finding meaningful employment.

- WIA Youth Program – provides summer and year-round development programs to at risk youth (*e.g.*, dropouts, foster children, juvenile offenders, children of incarcerated parents, and migrant children).
- Base Realignment and Closure (BRAC) – responds to workforce needs resulting from the federal Base Realignment and Closure process.
- Virginia Serious and Violent Offender Re-entry Initiative (VASAVOR) – supports the transition of long-term incarcerated adults from jail into the community.
- Fairfax Pre-Release Employment Center (PRC) – a one-stop employment center that provides pre-release employment and training services to selected Fairfax County jail inmates.
- Center for Business Planning and Development (CBPD) – provides technical and developmental assistance to new and established businesses in Northern Virginia.
- Core Services (Core) – provides self-service tools that assist a job seeker in making an effective job search.

As detailed more fully in Table 1, in FY 2008 these programs were instrumental in transitioning 1,176 previously unemployed individuals into well-paying jobs.<sup>9</sup> Out of this number, 234 were placed through the Northern Virginia Workforce System’s WIA, BRAC, VASAVOR, PRC, and CBPD programs. The average annual salaries associated with those placements ranged between \$16,640 and \$46,305. An additional 942 individuals were placed as a result of the self-service job placement tools provided through the Northern Virginia Workforce System’s Core Services. The average annual salary for those self-referred placements was \$28,392.

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<sup>9</sup> *Data Source:* data on placements and associated average annual salaries were obtained from the SkillSource Group.

**Table 1: Northern Virginia Workforce System Job Placements in FY 2008**

Program	Job Placements	Average Annual Salary
WIA – Adult	33	\$28,080
WIA – Dislocated Worker	54	\$46,305
WIA – Youth	54	\$18,470
BRAC/NEG	1	\$20,800
VASAVOR	32	\$27,768
PRC	8	\$16,640
CBPD	52	\$37,000
<b>Subtotal</b>	<b>234</b>	
Core Services	942	\$28,392
<b>TOTAL</b>	<b>1,176</b>	

## Economic Impact

In this section, we assess the economic impact that the FY 2008 career training, job placement, and other workforce services that were provided by the Northern Virginia Workforce System had on the economy of Northern Virginia. The primary nature of that impact had to do with the new income earned by the 1,176 previously unemployed individuals that the Northern Virginia Workforce System was instrumental in transitioning into meaningful employment.<sup>10</sup> Given the tightness of the Northern Virginia labor market, absent the workforce services provided by the Northern Virginia Workforce System some of these positions may not have been filled and almost all would not have been filled as quickly as they were. As shown in Table 2, the aggregate annual pre-tax income generated through those placements was approximately \$34.1 million.

<sup>10</sup> It is important to note that whereas the wages earned by these previously unemployed individuals constitute the primary economic impact of the career training, job placement, and other workforce services provided by the Northern Virginia Workforce System in FY 2008, they are by no means the only economic impact. Although it is beyond the scope of the analysis presented here, a more inclusive definition of economic impact would also include, among other things, the cost of any social assistance that these individuals were receiving while unemployed (*e.g.*, unemployment assistance, food stamps) and that they no longer required after they were employed. For that reason, the more narrowly focused estimates of economic impact presented in this report should be assumed to be conservative in nature.

**Table 2: Consumption Expenditures Attributable to FY 2008 Job Placements**

Program	Job Placements	Average Annual Salary	Total Pre-Tax Income	Total Consumption Expenditures
WIA – Adult	33	\$28,080	\$926,640	\$920,154
WIA – Dislocated Worker	54	\$46,305	\$2,500,472	\$2,217,919
WIA – Youth	54	\$18,470	\$997,380	\$994,388
BRAC/NEG	1	\$20,800	\$20,800	\$20,654
VASAVOR	32	\$27,768	\$888,576	\$882,356
PRC	8	\$16,640	\$133,120	\$132,721
CBPD	52	\$37,000	\$1,924,000	\$1,881,672
<b>Subtotal</b>	<b>234</b>		<b>\$7,390,988</b>	<b>\$7,049,863</b>
Core Services	942	\$28,392	\$26,745,264	\$26,558,047
<b>TOTAL</b>	<b>1,176</b>		<b>\$34,136,252</b>	<b>\$33,607,910</b>

Economic impact is generally referred to in terms of “direct” and “indirect.” In this case, the direct economic impact of the \$34.1 million in new income generated by the Northern Virginia Workforce System’s job placements in FY 2008 pertains to consumption expenditures. As previously unemployed individuals exit the workforce programs provided by the Northern Virginia Workforce System and are placed in new jobs, they spend the majority of their newly acquired incomes on rent, food, clothing, and other goods and services. Those consumption expenditures provide an immediate injection into the regional economy. As shown in Table 2, based on recent data on consumer expenditures from the U.S. Department of Labor, we estimate that the \$34.1 million in annual pre-tax income generated by FY 2008 Northern Virginia Workforce System job placements translated into approximately \$33.6 million in new consumption expenditures.<sup>11</sup>

Indirect economic impact refers to the ripple effects that an expenditure has as it makes its way through the economy. For example, when the \$33.6 million in new consumption expenditures described above become income for someone else, which is in turn spent, thereby becoming income for someone else, and so on, and so on, and so on. Through this process, one dollar in initial expenditures ultimately generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total

<sup>11</sup> Estimates of consumption expenditures are derived using data from the U.S. Department of Labor’s “2006 Consumer Expenditure Survey.”

income generated is called the Keynesian multiplier. Keynesian multipliers are named after John Maynard Keynes, the British economist who studied this phenomenon in the early portion of the last century.

To fully quantify the direct and indirect economic impact associated with the Northern Virginia Workforce System's FY 2008 job placements we employ a commonly used regional economic impact model called IMPLAN.<sup>12</sup> The IMPLAN model uses regional and national economic data to construct regional Keynesian multipliers and uses these multipliers to quantify economic impact. In the estimates that follow, we further disaggregate those impacts into three categories: 1) the economic output, or the dollar value of the impact, 2) the number of additional jobs that are associated with that economic output, and 3) the fiscal impact, or tax revenue generated.

### WIA, BRAC, VASAVOR, PRC, and CBPD programs

We first look at the economic impact associated with the Northern Virginia Workforce System's WIA, BRAC, VASAVOR, PRC, and CBPD programs – those programs where the Northern Virginia Workforce System directly provided career training and job placement services that enabled an individual to transition from unemployment into a well-paying job. In assessing the likely economic impact attributable to those programs, we employ the following assumptions:

- A total of 234 individuals exited from these programs and were placed into jobs in FY 2008.
- The average salary and total pre-tax income associated with these programs are detailed in Table 2.
- Consumption expenditures are derived using data from the U.S. Department of Labor's "2006 Consumer Expenditure Survey" for three income categories: \$15,000 to \$25,000, \$25,000 to \$35,000, and \$35,000 to \$50,000.
- All consumption expenditures were made within Northern Virginia.
- Economic impact is based on a "representative year" and no attempt is made to phase placements in based on actual job start data from FY 2008.

By feeding these assumptions into the IMPLAN model, we obtain the following estimates of the economic impact that career training and job placement services provided in FY 2008 through the WIA, BRAC, VASAVOR, PRC, and CBPD programs had on Northern Virginia. As shown in Table 3, with respect to overall economic output, it is estimated that the combined direct and indirect economic impact from these

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<sup>12</sup> IMPLAN is produced by Michigan IMPLAN Group, Inc.

programs was \$8.7 million. In addition, this economic impact generated 49 jobs (it is important to realize that these jobs are primarily in the retail trade, housing, and other service sectors that are typically impacted by household consumption expenditures and are in addition to the 234 placements), and \$909 thousand in state, local, and federal tax revenue.

**Table 3: Estimated Economic Impact of WIA, BRAC, VASAVOR, PRC, and CBPD Programs**

	Direct	Indirect	TOTAL
<b>Output</b>	\$7,049,863	\$1,689,287	<b>\$8,739,150</b>
<b>Employment</b>	35	14	<b>49</b>
<b>Fiscal</b>			<b>\$909,309</b>
State and Local Tax Revenue			\$417,576
Federal Tax Revenue			\$491,733

WIA, BRAC, VASAVOR, PRC, CBPD, and Core Services programs

In this section, we add FY 2008 placements from Core Services to the placements attributable to the WIA, BRAC, VASAVOR, PRC, and CBPD programs. Core Services have an arguably less direct impact on job placement since these services primarily involve self-service tools that assist a job seeker in making an effective job search. In assessing the likely economic impact attributable to the combined FY 2008 placements from all of these programs, we employ the following assumptions:

- A total of 1,176 individuals exited from these programs (234 from WIA, BRAC, VASAVOR, PRC, and CBPD, and 942 from Core Services) and were placed into jobs in FY 2008.
- The average salary and total pre-tax income associated with these programs are detailed in Table 2.
- Consumption expenditures are derived using data from the U.S. Department of Labor’s “2006 Consumer Expenditure Survey” for three income categories: \$15,000 to \$25,000, \$25,000 to \$35,000, and \$35,000 to \$50,000.
- All consumption expenditures were made within Northern Virginia.
- Economic impact is based on a “representative year” and no attempt is made to phase placements in based on actual job start data from FY 2008.

Again feeding these assumptions into the IMPLAN model, we obtain the following estimates of the economic impact that the combined FY 2008 placements from the WIA, BRAC, VASAVOR, PRC, CBPD, and Core Services programs had on Northern Virginia. As shown in Table 4, with respect to overall economic output, it is estimated that the combined direct and indirect economic impact from these programs was \$41.7 million. In addition, this total economic impact generated 235 jobs (again, it is important to realize that these jobs are in addition to the 1,176 placements), and \$4.3 million in state, local, and federal tax revenue.

**Table 4: Estimated Economic Impact of WIA, BRAC, VASAVOR, PRC, CBPD, and Core Services Programs**

	Direct	Indirect	TOTAL
Output	\$33,607,911	\$8,121,518	<b>\$41,729,429</b>
Employment	168	67	<b>235</b>
Fiscal			<b>\$4,324,926</b>
State and Local Tax Revenue			\$1,971,226
Federal Tax Revenue			\$2,353,700

### Benefit/Cost Ratio

In FY 2008, the cost associated with the WIA, BRAC, VASAVOR, PRC, CBPD, and Core Services programs provided by the Northern Virginia Workforce System was approximately \$2.5 million.<sup>13</sup> Comparing this cost to the benefits derived from these programs, in terms of total economic output, allows us to calculate a benefit/cost ratio. If the analysis is restricted to the WIA, BRAC, VASAVOR, PRC, and CBPD programs that benefit/cost ratio is approximately 3.5, indicating that the benefits derived from the programs are three-and-a-half times greater than the costs required to generate those benefits. If the analysis is expanded to encompass Core Services as well, the benefit/cost ratio rises to approximately 16.7, indicating that the benefits are nearly seventeen times greater than the costs required to generate them.

<sup>13</sup> Data Source: The SkillSource Group.

## Conclusion

The Northern Virginia Workforce System provides workforce services to the localities of Fairfax, Loudoun, and Prince William counties, and the cities of Fairfax, Falls Church, Manassas, and Manassas Park. By any measure, these seven localities represent the engine that drives Virginia's economy. In 2007, they accounted for 22 percent of the state's population and 24 percent of its employment. They contribute 35 percent of the total individual state income tax collected in Virginia. And between 2004 and 2014, they are projected to account for 39 percent of the new jobs created in the state.

Because of their robust economies, these seven localities confront a very tight labor market. In August 2008 (the most recent period for which data are available), these localities experienced a 3.4 percent unemployment rate – significantly below the 4.6 percent rate experienced by Virginia as a whole and the 6.1 percent rate experienced nationally. These labor shortages increase the importance of the workforce services provided by the Northern Virginia Workforce System by making it that much more critical that workers are made job-ready as quickly and efficiently as possible.

In FY 2008, the programs and services provided by the Northern Virginia Workforce System enabled 1,176 previously unemployed individuals to transition into well-paying jobs. Out of that total, 234 of the placements came through the WIA, BRAC, VASAVOR, PRC, and CBPD programs (programs that directly provide career training and job placement services), and 942 came through Core Services (self-service tools that assist a job seeker in making an effective job search). The average annual salaries associated with those placements ranged between \$16,640 and \$46,305. Moreover, in total the 1,176 placements generated approximately \$34.1 million in annual pre-tax income, and drove an additional \$33.6 million in local consumption expenditures.

In turn, those \$33.6 million in consumption expenditures had a significant additional impact as they rippled through the Northern Virginia economy. Focusing first on the 234 placements associated with the WIA, BRAC, VASAVOR, PRC, and CBPD programs, that impact is estimated to be \$8.7 million in total economic output, 49 additional jobs (these jobs are in addition to the 234 placements), and \$909 thousand in state, local, and federal tax revenue. If we increase the scope of workforce services to include Core Services, the economic impact associated with the resulting combined 1,176 placements is estimated to be \$41.7 million in total economic output, 235 jobs (these jobs are in addition to the 1,176 placements), and \$4.3 million in state, local, and federal tax revenue.

Finally, comparing these figures to the approximately \$2.5 million in expenses attributable to the WIA, BRAC, VASAVOR, PRC, CBPD, and Core Services programs in FY 2008 shows that the benefit/cost ratio is: 1) 3.5 if one excludes Core Services,

indicating that benefits are three-and-a-half times greater than costs, or 2) 16.7 if Core Services are included, indicating that benefits are nearly seventeen times greater than costs.



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