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**The Regional Economic Impact  
of the  
Fairfax Virginia Serious and  
Violent Offender Re-entry Program  
and the  
Fairfax Pre-Release Employment Center**

**April 2010**



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## Executive Summary

This report estimates and compares the economic benefits and costs associated with two prisoner reentry programs – the Fairfax Virginia Serious and Violent Offender Reentry Initiative (VASAVOR) and the Fairfax Pre-Release Employment Center (PRC). The results from that analysis indicate that in both cases, program benefits far outweigh associated program costs. More specifically:

- Both the VASAVOR program and the PRC have been very successful in placing enrolled offenders in jobs that will enable them to achieve self-sufficiency.
- In addition, the VASAVOR program is associated with a 13.3 percent reduction in recidivism rates from what otherwise could be expected based on statewide data, while the PRC is associated with a 17.1 percent reduction in recidivism rates.
- We estimate that the reduced recidivism rates associated with the VASAVOR program have reduced future public safety expenditures on incarceration by approximately \$22,846 per program participant, while reduced recidivism rates associated with the PRC have reduced incarceration expenditures by approximately \$26,976 per program participant.
- We estimate that the reduced recidivism rates associated with the VASAVOR program have reduced future victim costs by approximately \$7,203 per program participant, while reduced recidivism rates associated with the PRC have reduced victim costs by approximately \$660 per program participant.
- Former inmates employed through the VASAVOR program are responsible for adding approximately \$7.9 million in additional income and expenditures to the *SkillSource* Group service area annually, while former offenders employed through the PRC are responsible for adding approximately \$1.2 million annually.
- Costs per participant are approximately \$4,553 in the VASAVOR program and \$1,323 in the PRC.
- The VASAVOR program is associated with a 7.1 benefit/cost ratio – every \$1 in cost allocated to the program is associated with more than \$7 in benefits, while the PRC is associated with a 21.6 benefit/cost ratio – every \$1 in cost allocated to the center is associated with almost \$22 in benefits.

## Introduction

This report estimates and compares the economic benefits and costs associated with two prisoner reentry programs – the Fairfax Virginia Serious and Violent Offender Reentry Initiative (VASAVOR) and the Fairfax Pre-Release Employment Center (PRC). The remainder of the report is divided into four sections. The *Program Description* section provides a brief description of each program. The *Background – Literature Review* section briefly summarizes the findings from earlier economic analyses of other prisoner reentry programs. The *Economic Analysis* section provides an estimate and comparison of the economic benefits and costs associated with both the VASAVOR and PRC programs. Finally, the *Conclusion* section provides a brief summary and concluding remarks.

This report was prepared by Mangum Economic Consulting, LLC under contract with the *SkillSource* Group, the non-profit arm of the Northern Virginia Workforce Investment Board.

## Program Description

### Virginia Serious and Violent Offender Reentry Initiative (VASAVOR)

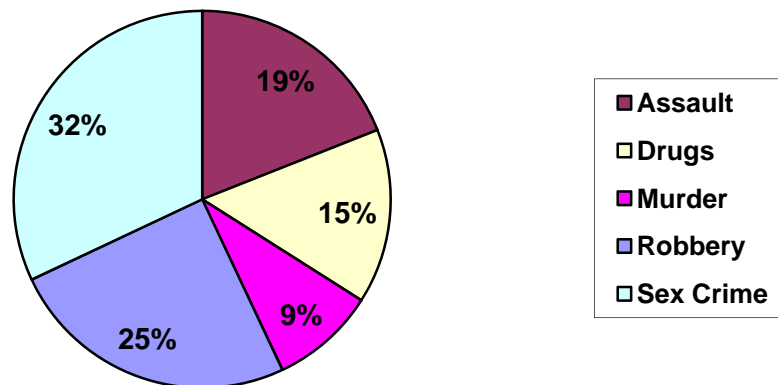
The Fairfax County Virginia Serious and Violent Offender Reentry Initiative (VASAVOR) was created in February 2003 with initial funding from the U.S. Department of Justice and other Federal Agencies. The program is a partnership between the Virginia Department of Corrections; Fairfax County Sheriff's Office; Fairfax-Falls Church Community Services Board; Opportunities, Alternatives, and Resources of Fairfax County, Inc.; and the *SkillSource* Group, on behalf of the Northern Virginia Workforce Investment Board. Local program oversight is provided by the Fairfax Community Criminal Justice Board. The purpose of the program is to provide a continuum of care for eligible high-risk offenders that enables them to step down from state prison incarceration to detention in a local jail and from there to transition back into the local community.

The program is administered in three phases:

1. Participant identification and planning: The VASAVOR program model provides that eligible offenders are identified by the Virginia Department of Corrections. An institutional reentry plan is then developed and the offender is transferred to the Fairfax County Adult Detention Center. There a Transition Team develops a community reentry plan and pre-release and transitional programming is provided.

2. Release to the community: The offender is released from incarceration and community supervision begins. The Transition Team coordinates access to community-based services in accordance with the community reentry plan. These services include education, employment assistance, intensive supervision and offender monitoring, physical/mental health services, residential placement, sex offender services, substance abuse services, and vocational training.
3. Self-sufficiency: The offender is expected to establish responsibility and productivity and to achieve self-sufficiency.

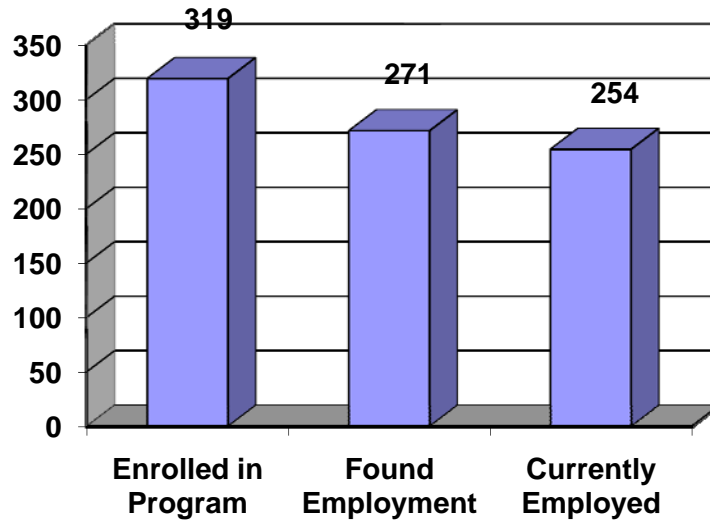
Figure 1 provides data on VASAVOR participants for the period from 2007 through 2009 by offense category. As this chart shows, the largest offense category was sex crimes (32 percent of participants), followed by robbery (25 percent), assault (19 percent), drug offenses (15 percent), and murder (9 percent).



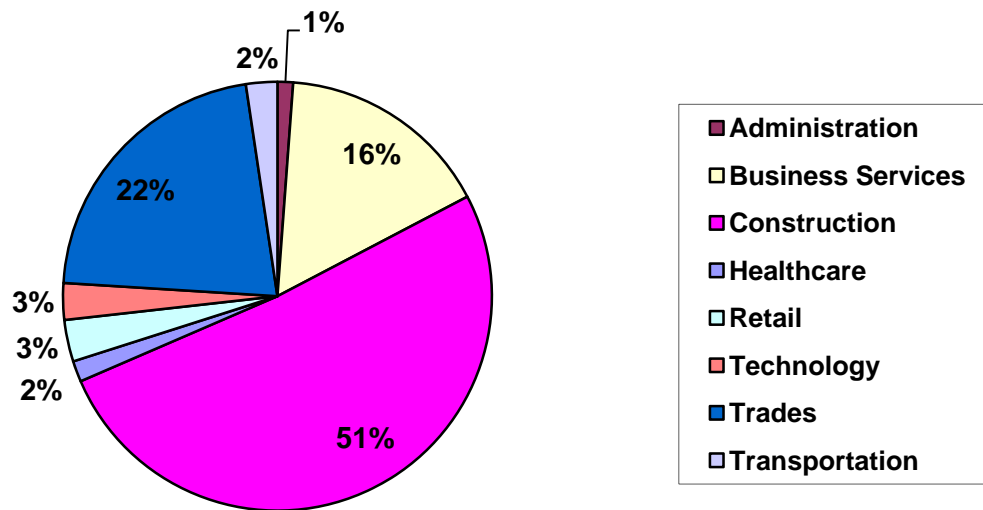
**Figure 1: VASAVOR Participants by Offense Category – 2007 to 2009<sup>1</sup>**

The VASAVOR program has demonstrated two significant and quantifiable outcomes. The first is that it has been very successful in enabling high-risk offenders to qualify for jobs that will allow them to achieve continued self-sufficiency. From the program’s inception through July 2009, it enrolled 319 offenders, placed 271 (or 85 percent) of those individuals in jobs, and enabled 254 (or 80 percent) to achieve continued employment (*see* Figure 2).

<sup>1</sup> Data Source: VASAVOR program.



**Figure 2: VASAVOR Enrollment, Job Placement, and Employment Totals through July 2009<sup>2</sup>**



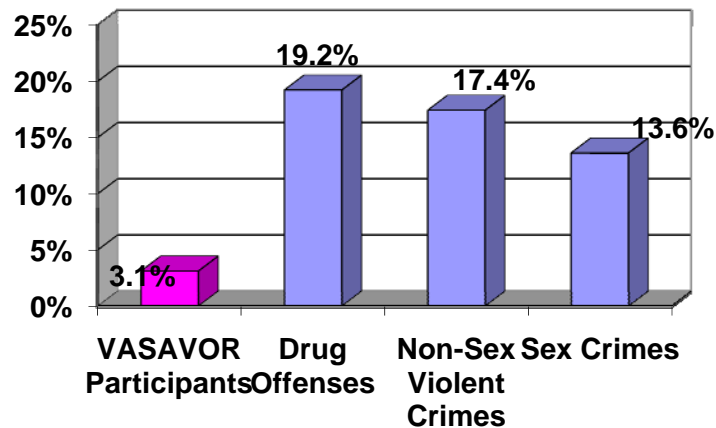
**Figure 3: VASAVOR Participant Employment by Job Type through July 2009<sup>3</sup>**

<sup>2</sup> Data Source: VASAVOR program.

<sup>3</sup> Data Source: VASAVOR program.

As of July 2009, the average equivalent annual salary for those employed through the VASAVOR program was \$25,792, and 89 percent of those individuals had been in their jobs for twelve months or longer. Figure 3 provides a breakdown of the types of jobs in which VASAVOR participants are employed. As shown in this chart, the largest employment category by far is construction (51 percent), followed by skilled trades (22 percent), and then business services (16 percent).

The second quantifiable outcome attributable to the VASAVOR program is that it has a positive impact on recidivism. Figure 4 compares recidivism rates in the VASAVOR program to the statewide recidivism rates for comparable offense categories. In each case, the recidivism rate is defined as the proportion of individuals within that category who are re-incarcerated within a three year period. These figures are for new offenses only and do not include technical violators. As this graph indicates, the recidivism rate for VASAVOR participants is significantly below the statewide recidivism rates for individuals in similar offense categories. Moreover, as will be demonstrated in the *Economic Analysis* section, this reduction in recidivism has very significant positive economic implications.



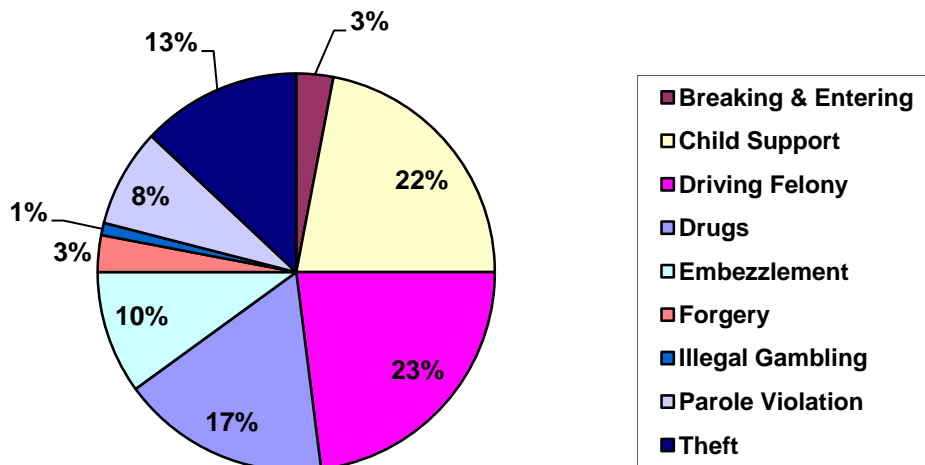
**Figure 4: Comparison of VASAVOR Recidivism Rates to Statewide Recidivism Rates for Relevant Offense Categories<sup>4</sup>**

<sup>4</sup> The recidivism rate for the VASAVOR program was obtained from program administrators. Recidivism rates for other offense categories are taken from “Recidivism in Virginia: Tracking the 1999 Release Cohort,” *Virginia Department of Corrections*, May 2005.

## Pre-Release Employment Center (PRC)

The Pre-Release Employment Center (PRC) was created in May 2008 as a joint project between the Fairfax County Sheriff’s Office and the *SkillSource* Group, the non-profit arm of the Northern Virginia Workforce Investment Board. The PRC is a one-stop employment center that provides pre-release employment and training services to selected Fairfax County Adult Detention Center inmates. The mission of the center is to facilitate an inmate’s successful transition back into the community by providing evaluation, training, and job placement services that will better position them for viable employment and, thereby, a reduced risk of recidivism.

Figure 5 details the distribution of PRC participants by offense category from the inception of the program through October 31, 2009. As depicted in this graph, the largest offense categories were driving felony (23 percent of participants), non-payment of child support (22 percent), drugs (17 percent), theft (13 percent), and embezzlement (10 percent).

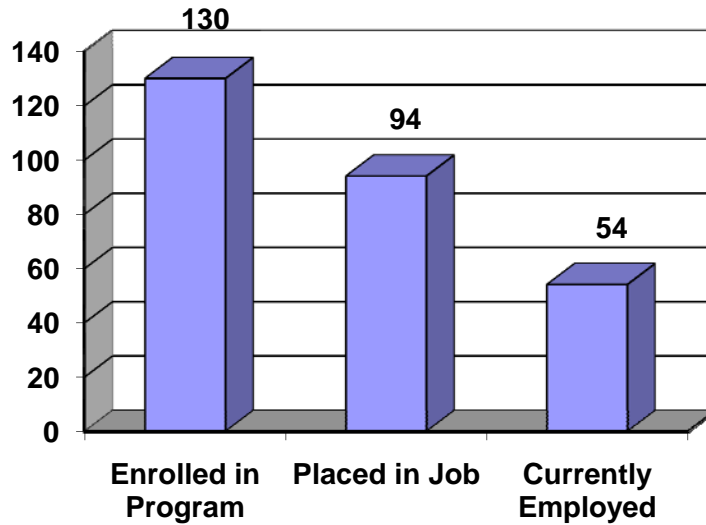


**Figure 5: PRC Participants by Offense Category (as of October 31, 2009)<sup>5</sup>**

Just as with the VASAVOR program, the PRC has demonstrated two significant and quantifiable outcomes. First, the PRC has proved successful at aiding inmates in preparing for and finding viable employment. As shown in Figure 6, from the program’s inception through July 2009, it enrolled 130 inmates, placed 94 (or 72 percent) of those

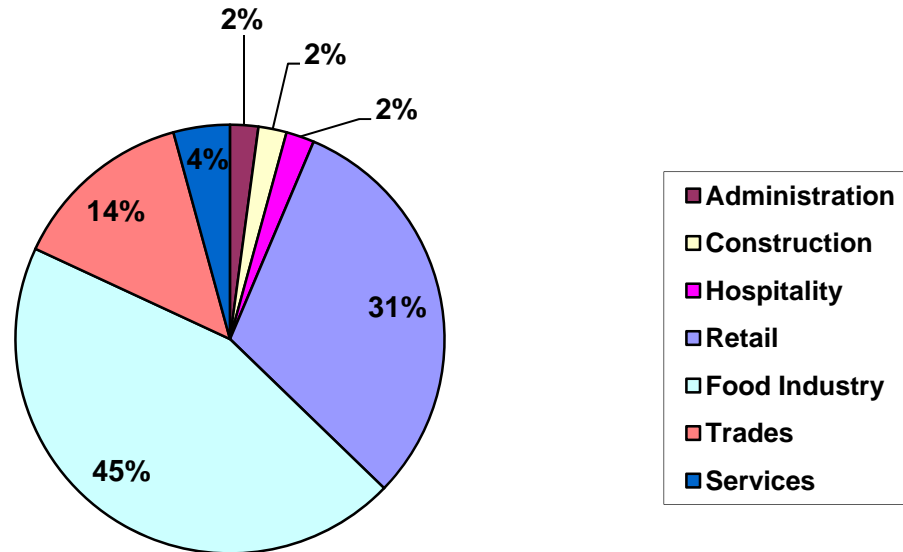
<sup>5</sup> Data Source: Pre-Release Employment Center.

individuals in jobs, and enabled 54 (or 42 percent) to achieve continued employment. The average equivalent annual salary for those employed through the PRC was \$19,011. The largest proportion of those employed were in the food service industry (45 percent), followed by retail (31 percent) and skilled trades (14 percent) (*see* Figure 7).



**Figure 6:** PRC Enrollment, Job Placement, and Employment totals through July 2009<sup>6</sup>

<sup>6</sup> Data Source: Pre-Release Employment Center.

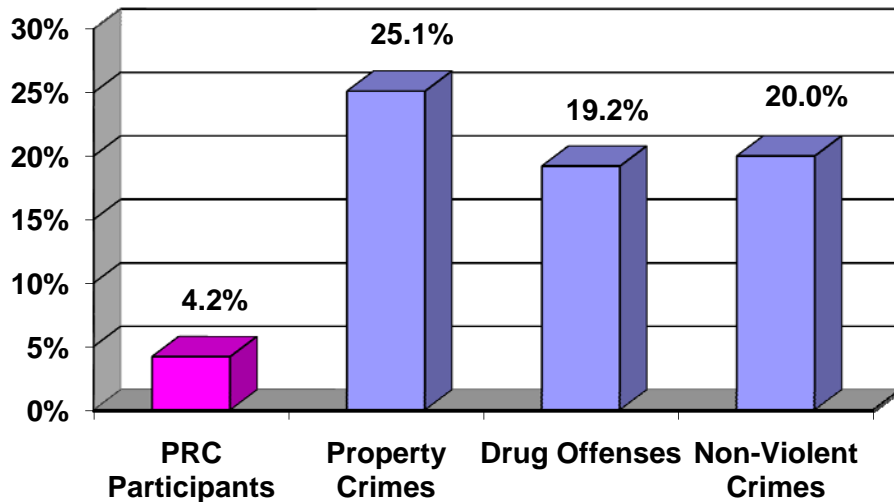


**Figure 7: PRC Participant Employment by Job Type through July 2009<sup>7</sup>**

Second, the PRC has also had a positive impact on recidivism rates. Figure 8 compares the recidivism rate for PRC participants to the statewide recidivism rates for relevant offense categories. In each case, the recidivism rate is defined as the proportion of individuals within that category who are re-incarcerated within a three year period.<sup>8</sup> These figures are for new offenses only and do not include technical violators. As the data presented in Figure 8 demonstrate, the recidivism rate for PRC enrollees is significantly below the statewide recidivism rates for individuals in similar offense categories. As will be shown in the *Economic Analysis* section, there are important economic implications associated with this reduction in recidivism.

<sup>7</sup> Data Source: Pre-Release Employment Center.

<sup>8</sup> Because of a methodological difference in how the Pre-Release Employment Center and the statewide Virginia Department of Corrections (DOC) reported recidivism rates are calculated, it was necessary to adjust the reported Pre-Release Employment Center rate. Statewide recidivism rates reported by DOC include any inmate in a state facility who is released, recidivates within three years, and is re-incarcerated in a state facility. In contrast, the Pre-Release Employment Center rate only captures inmates in the Fairfax County Adult Detention Center who are released, recidivate within three years, and are re-incarcerated in the Fairfax County Adult Detention Center. Based on DOC reported data, we know that, on average, only about 71.6 percent of recidivists re-offend within the same jurisdiction. To capture the 28.4 percent who would re-offend elsewhere, it was necessary to adjust the reported Pre-Release Employment Center recidivism rate from 3.0 percent to 4.2 percent (*i.e.*,  $(3.0/71.6) = 4.2$ ).



**Figure 8: Comparison of PRC Recidivism Rates to Statewide Recidivism Rates for Relevant Offense Categories<sup>9</sup>**

## Background – Literature Review

Most of the empirical studies that have looked at the impact of pre-release programs on recidivism have focused on the effect of general and post-secondary education. Very few have assessed the impact of vocational programs on recidivism and even fewer have assessed the impact of employment and job training. In a comprehensive review published in 1995, however, Jurg Gerber and Eric Fritsch’s evaluation of thirteen independently published analyses that they deemed methodologically valid led them to conclude that,

*Most research conducted in recent years shows a correlation between vocational training and a variety of outcomes generally considered positive for either society or correctional institutions: lower recidivism rates, lower parole revocation rates, better postrelease employment patterns, and better institutional disciplinary records.<sup>10</sup>*

Moreover, in a 2006 update to the Gerber and Fritsch review, Eric Jensen and Gary Reed, based on an evaluation of more recent studies, were supportive of Gerber and Fritsch’s earlier conclusion, stating that the preponderance of evidence showed that, “vocational

<sup>9</sup> The Pre-Release Employment Center recidivism rate was derived from data obtained from program administrators. Recidivism rates for other offense categories are taken from “Recidivism in Virginia: Tracking the 1999 Release Cohort,” Virginia Department of Corrections, May 2005.

<sup>10</sup> Jurg Gerber and Eric J. Fritsch, “Adult Academic and Vocational Correctional Education Programs: A Review of Recent Research,” *Journal of Offender Rehabilitation*, vol.22, no.1/2, 1995, p.131.

education programs are What Works [a designation attributed to “programs that we are reasonably certain reduce recidivism”],” (definition added from original).<sup>11</sup>

Finally, in 2005, the Washington state legislature directed the Washington State Institute for Public Policy (WSIPP) to evaluate the relative cost-effectiveness of various adult offender programs designed to reduce recidivism. To accomplish that task, WSIPP employed a two-part analysis. In the first part, they reviewed and assessed the findings from 571 individual evaluations of various adult corrections programs (*e.g.*, vocational education, intensive supervision, general education, cognitive behavioral therapy, employment and job training, etc.). Based on that review, they were able to identify the typical change in recidivism attributable to each type of program. What that analysis showed was that, vocational education typically reduced recidivism rates by 9.0 percent (the fourth highest reduction out of the 18 types of programs evaluated),<sup>12</sup> general education by 7.0 percent, and employment and job training by 4.3 percent (in each case, the percentage reduction is a percentage of a percentage, *i.e.*, a 9.0 percent reduction in a 50 percent recidivism rate is a 4.5 percent reduction in recidivism).<sup>13</sup>

In the second part of the analysis, WSIPP used program budget data along with estimates of the benefits to taxpayers in terms of reduced incarceration costs, and the benefits to crime victims in terms of reduced victim costs, to determine the net benefits attributable to each program. What they found was that, vocational training exhibited the highest net benefit of the 18 different programs evaluated (\$13,738 per program participant), while the net benefit from general education ranked third highest (\$10,669 per program participant), and the net benefit from employment and job training ranked ninth highest (\$4,359 per program participant). The analysis of VASAVOR and PRC benefits and costs presented in the next section borrows heavily from the methodology developed by WSIPP.

## Economic Analysis

In this section, we estimate the economic benefits and costs associated with the VASAVOR and PRC initiatives and then use those estimates to derive a benefit/cost ratio for each program.

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<sup>11</sup> Eric L. Jensen and Gary E. Reed, “Adult Correctional Education Programs: An Update on Current Status Based on Recent Studies,” *Journal of Offender Rehabilitation*, vol.44, no.1, 2006, p.90.

<sup>12</sup> The highest reduction in recidivism rates was attributed to the Washington Dangerously Mentally Ill Offender program, followed by intensive supervision, and then drug treatment in the community.

<sup>13</sup> Steve Aos, Marna Miller, and Elizabeth Drake, “Evidence-Based Public Policy Options to Reduce Future Prison Construction, Criminal Justice Costs, and Crime Rates,” Washington State Institute for Public Policy, October 2006.

## Virginia Serious and Violent Offender Reentry Initiative (VASAVOR)

### **Benefits**

From an economic perspective, the VASAVOR initiative has three primary benefits. First, the reduced recidivism associated with the program decreases public expenditures on correction and detention because fewer offenders are re-incarcerated. Second, reduced recidivism also reduces victim costs because fewer crimes are committed. Third, when former inmates become successfully employed, they contribute to the economy through the income they earn, the purchases they make, and the taxes they pay. Each of these three benefits is addressed in turn.

#### *Reduced Incarceration Costs*

If an offender recidivates, is convicted of a new crime, and re-incarcerated there is a significant public expense associated with that re-incarceration. Table 1 provides data on the average new sentence received by recidivists in Virginia by general offense category and uses these data, along with information on VASAVOR participants by offense category, to estimate the likely new sentence that would be imposed on VASAVOR recidivists. As shown in Table 1, that estimate is 8.1 years.

**Table 1: Estimated New Sentence Received by VASAVOR Recidivists**

<b>Offense Category</b>	<b>VASAVOR Participants by Offense Category<sup>14</sup></b>	<b>Average New Sentence Received by Recidivists<sup>15</sup></b>
Sex Crimes	32%	6.7 years
Non-Sex Violent Crimes	53%	10.3 years
Drugs	15%	3.4 years
<b>Weighted Average</b>		<b>8.1 years</b>

It bears notice that this estimate (8.1 years) is much higher than the average new sentence imposed on all recidivists in Virginia (4.8 years<sup>16</sup>) and reflects the fact that participants in

<sup>14</sup> Data Source: VASAVOR program.

<sup>15</sup> Data Source: "Recidivism in Virginia," May 2005.

<sup>16</sup> Data Source: "Recidivism in Virginia," May 2005.

the VASAVOR program are high-risk violent and serious offenders. As a result, the cost of failure in successfully transitioning these individuals back into their communities is greater than it would be for an “average” offender.

In the next step of the analysis, we use this expected sentence, along with data on incarceration costs, to compute the public safety expenditures that would likely be associated with a recidivist from the VASAVOR program. According to estimates developed annually by the Virginia Department of Corrections, the annual cost of housing an inmate in a major correctional institution, was \$25,109 in fiscal year 2009.<sup>17</sup> Multiplying this figure by the expected new sentence length of 8.1 years, and performing a discounted present value calculation, indicates that the discounted present cost associated with incarcerating a VASAVOR recidivist is approximately \$171,158.<sup>18</sup> Looked at differently, what this means is that every participant in the VASAVOR program who does not recidivate saves the public the equivalent of \$171,158 in today’s dollars.

**Discounted Present Value of Total Incarceration Cost = \$171,158 per VASAVOR recidivist**

In the final step of this portion of the analysis, we use the difference between statewide recidivism rates and VASAVOR program recidivism rates that was depicted in Figure 4, along with the per recidivist cost of incarceration computed above, to estimate the total savings attributable to the VASAVOR program in terms of reduced public expenditures for inmate incarceration. Recall from Figure 4 that the recidivism rate to date associated with the VASAVOR program is estimated to be 3.1 percent. Much as with the estimated new sentence for VASAVOR recidivists computed in Table 1, Table 2 uses the data on statewide recidivism rates presented in Figure 4, along with information on VASAVOR participants by offense category, to estimate a “benchmark” statewide recidivism rate for VASAVOR participants. What that calculation shows is that the statewide benchmark recidivism rate for individuals from similar offense categories is 16.4 percent. This means that, compared to what we would otherwise expect based on statewide data, the VASAVOR program is associated with a 13.3 percent reduction in recidivism rates.<sup>19</sup>

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<sup>17</sup> *Data Source:* “Management Information Summary Annual Report, Year Ending June 30, 2009,” Virginia Department of Corrections.

<sup>18</sup> Discounted present value is used to compress a stream of future benefits (or costs) into a single value. In essence, it represents the value, in today’s dollars, of that future stream of benefits (or costs). The formula used to compute discounted present value is  $DPV = FV/(1 + nr)$ , where  $DPV$  is the discounted present value,  $FV$  is the future value,  $n$  is the number of years, and  $r$  is the discount rate. The discount rate used in the present calculation is 4.5%, which is the current interest rate on a 30 year U.S. Treasury bond.

<sup>19</sup> An important caveat is needed here which has to do with what social scientists refer to as selection bias. In comparing the VASAVOR recidivism rate to the statewide recidivism rate for similar offense categories, we make the implicit assumption that there is no difference between the two groups except for participation in the VASAVOR program. However, given that VASAVOR participants are pre-screened by the Virginia Department of Corrections to identify those inmates who are most likely to benefit from the program, this assumption is not entirely valid. In the absence of a more precise measure of the expected benchmark recidivism rate for VASAVOR participants,

**Table 2: Estimated “Benchmark” Recidivism Rate for VASAVOR Participants**

Offense Category	VASAVOR Participants by Offense Category <sup>20</sup>	Statewide Recidivism Rate <sup>21</sup>
Sex Crimes	32%	13.6%
Non-Sex Violent Crimes	53%	17.4%
Drugs	15%	19.2%
<b>Weighted Average</b>		<b>16.4%</b>

As demonstrated in the formula below, multiplying this estimated VASAVOR-specific reduction in recidivism rates by total program enrollment indicates that the VASAVOR program was likely responsible for reducing the number of re-incarcerated recidivists by approximately 43 individuals.

$$13.3\% \text{ (VASAVOR-specific reduction in recidivism)} \times 319 \text{ (program enrollment)} \\ = 42.6 \text{ (reduction in recidivists)}$$

Multiplying that reduction in recidivists by the discounted present value of the cost of re-incarceration indicates that since its inception in 2003 through June 2009, the VASAVOR program has saved the state and local government approximately \$7.3 million in public safety expenditures for incarceration.

$$42.6 \text{ (reduction in recidivists)} \times \$171,158 \text{ (total incarceration costs per recidivist)} \\ = \$7,288,026 \text{ (total savings in public safety expenditures)}$$

Finally, dividing this figure by total program enrollment, indicates that the public safety savings per VASAVOR participant are approximately \$22,846.

$$\$7,288,026 \text{ (total savings in public safety expenditures)} / 319 \text{ (program participants)} \\ = \$22,846 \text{ (savings per participant)}$$

however, the comparison between the VASAVOR rate and the statewide rate provides us with the most accurate estimate of the program’s effectiveness currently available under existing data limitations.

<sup>20</sup> Data Source: VASAVOR program.

<sup>21</sup> Data Source: “Recidivism in Virginia,” May 2005.

### *Reduced Victim Costs*

In addition to reduced public safety expenditures for incarceration, another quantifiable economic consequence attributable to the VASAVOR program is the reduction in victim costs associated with the crimes that recidivists would otherwise have committed. Crime imposes costs on victims and society in general that go beyond the simple cost of incarceration. For example, according to research by the National Institute of Justice, violent crime is responsible for 3 percent of overall U.S. medical spending and 14 percent of injury-related medical spending.<sup>22</sup> Violent crime is also directly responsible for lost wages equal to 1 percent of all U.S. earnings.<sup>23</sup>

To quantify this benefit of the VASAVOR program we employ data from three sources – statewide data on recidivism rates from the Virginia Department of Corrections that were used in the previous section,<sup>24</sup> data on the incidence of crime in Virginia from the Virginia Department of State Police,<sup>25</sup> and estimates of offense-specific victim costs developed by the National Institute of Justice.<sup>26</sup> Table 3 uses the estimated reduction in recidivists associated with the VASAVOR program, along with data on the proportion of VASAVOR participants in various offense categories from Figure 1, and data on the proportion of recidivists in each category that recidivate in their original offense category (*i.e.*, the proportion of robbers who recidivate by committing a robbery), to determine the number and distribution of the estimated 42.6 reduced recidivists that would likely recommit their original offense.<sup>27</sup> As this table shows, based on these calculations, it is estimated that approximately 23.1 of the 42.6 reduced recidivists would have again committed crimes within their original offense category.

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<sup>22</sup> *Data Source:* Ted R. Miller, Mark A. Cohen, and Brian Wieserma, “Victim Costs and Consequences: A New Look,” National Institute of Justice, January 1996.

<sup>23</sup> *Data Source:* Ted R. Miller, Mark A. Cohen, and Brian Wieserma, January 1996.

<sup>24</sup> *Data Source:* “Recidivism in Virginia,” May 2005.

<sup>25</sup> *Data Source:* “Crime in Virginia 2008,” Virginia Department of State Police, 2009.

<sup>26</sup> *Data Source:* Ted R. Miller, Mark A. Cohen, and Brian Wieserma, January 1996.

<sup>27</sup> The “same offence” recidivism number computed in each row is determined by multiplying the estimated number of reduced recidivists attributable to the VASAVOR program (42.6), times the proportion of enrollees in that offence category (*e.g.*, 31 percent for rape and other forcible sex crimes), times the proportion of recidivists in that offence category that recidivate with the same offence (*e.g.*, 60 percent for rape and other forcible sex crimes), to determine the estimated number of “same offence” recidivists (*e.g.*, 7.9 for rape and other forcible sex crimes).

**Table 3: Estimated “Same Offense” Recidivists – VASAVOR**

Offense Category	Estimated Reduction in Recidivists Attributable to VASAVOR	VASAVOR Program Enrollment by Original Offense Category <sup>28</sup>	Reported Proportion of Same Offense Recidivism <sup>29</sup>	Estimated Same Offense Recidivists by Offense Category
Homicide/Manslaughter	42.6	9.0%	10.8%	0.4
Rape/Forcible Sex Crimes		31.0%	60.0%	7.9
Robbery		25.0%	54.2%	5.8
Assault		19.0%	54.2%	4.4
Drugs		15.0%	71.9%	4.6
<b>Total*</b>		<b>100.0%</b>		<b>23.1</b>

\*May not sum due to rounding.

Table 4 performs a similar calculation to determine the distribution by offense category of “different offense” recidivists. In this case, we use the estimated number of total different offense recidivists, along with data on the relative distribution of reported crimes across the selected offense categories, to allocate the estimated number of total different offense recidivists to specific offense categories.

<sup>28</sup> Data Source: VASAVOR program.

<sup>29</sup> Data Source: “Recidivism in Virginia,” May 2005.

**Table 4: Estimated “Different Offense” Recidivists – VASAVOR**

Offense Category	Estimated Total Different Offense Recidivists	Offense as a Proportion of Crimes Reported in Virginia in 2008 relative to the selected Offense Categories <sup>30</sup>	Estimated Different Offense Recidivists by Offense Category
Homicide/Manslaughter	42.6 – 23.1 = 19.5	0.2%	0.0
Rape/Forcible Sex Crimes		3.1%	0.6
Robbery		4.4%	0.9
Assault		64.8%	12.6
Drug		27.4%	5.3
<b>Total*</b>		<b>100.0%</b>	<b>19.5</b>

\*May not sum due to rounding.

Table 5 takes these estimates of “same offense” and “different offense” recidivists, and combines them with data on victim costs by type of offense, to estimate the total victim costs avoided because of the VASAVOR program’s positive impact on recidivism rates (because the National Institute of Justice study did not include an analysis of the victim costs associated with drug crimes, that portion of the calculation is marked as “not available”). As this table shows, the total victim costs avoided are estimated to be \$2.3 million. Dividing this figure by total program enrollment, indicates that the victim costs avoided per VASAVOR participant are \$7,203.

$$\begin{aligned}
 &\$2,297,639 \text{ (total savings in victim costs)} / 319 \text{ (program participants)} \\
 &= \$7,203 \text{ (savings per participant)}
 \end{aligned}$$

<sup>30</sup> *Data Source:* “Crime in Virginia 2008,” Virginia Department of State Police, 2009. Proportion of reported crimes is used in this column instead of proportion of program participants to account for the difference in the distribution of offenses across inmate populations versus the inmate admissions stream. This difference is largely attributable to the longer sentence lengths associated with serious and violent offenses which causes an “accumulation” of those offenders in the inmate population relative to their relative proportion in the admission stream.

**Table 5: Estimated Reduction in Victim Costs Attributable to the VASAVOR Program**

Offense Category	Estimated Same Offense Recidivists by Offense Category	Estimated Different Offense Recidivists by Offense Category	Estimated Total Recidivists by Offense Category	Cost Per Victim <sup>31</sup>	Estimated Total Victim Costs Avoided
Homicide/Manslaughter	0.4	0.1	0.5	\$2,940,000	\$1,342,487
Rape/Forcible Sex Crimes	7.9	0.6	8.5	\$87,000	\$742,040
Robbery	5.7	0.9	6.6	\$8,000	\$53,077
Assault	4.4	12.6	17.0	\$9,400	\$160,034
Drug	4.6	5.3	9.9	N/A	N/A
<b>Total*</b>	<b>23.1</b>	<b>19.5</b>	<b>42.6</b>		<b>\$2,297,639</b>

\*May not sum due to rounding.

### *Successful Employment*

The final economic benefit of the VASAVOR program that we address in this section has to do with the economic contribution that former inmates make when they become successfully employed. When previously unemployed former inmates are able, through the VASAVOR program, to qualify for and obtain good-paying jobs, they spend the majority of their newly acquired incomes on rent, food, clothing, and other goods and services. Those consumption expenditures have both a direct and an indirect impact on the regional economy.

The direct impact is simply the consumption expenditures themselves. While the indirect impact pertains to the ripple effects that those consumption expenditures have as they make their way through the economy. For example, as when purchases of household goods and services become income for someone else, which is in turn spent, thereby becoming income for someone else, 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 income generated is called the Keynesian multiplier.

<sup>31</sup> Data Source: Ted R. Miller, Mark A. Cohen, and Brian Wiersema, January 1996.

To estimate the direct and indirect economic impact associated with job placements from the VASAVOR program, we employ a commonly used regional economic impact model called IMPLAN.<sup>32</sup> The IMPLAN model uses regional and national economic data to construct regional Keynesian multipliers and uses those 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.

Recall from the previous *Program Description* section that, as of June 2009, 254 of the 319 offenders who had been enrolled in the VASAVOR program were currently employed and the average equivalent salary for those individuals was \$25,792. Table 6 takes those data and combines them with recent data on consumer expenditures from the U.S. Department of Labor, to estimate the total annual consumption expenditures attributable to employed former inmates from the VASAVOR program.<sup>33</sup> As shown in Table 6, that figure is approximately \$6.5 million annually.

**Table 6: Annual Consumption Expenditures from Former Inmates employed through the VASAVOR Program**

Program	Employed	Average Annual Salary	Total Before Tax Income	Total Consumption Expenditures
VASAVOR	254	\$25,792	\$6,551,168	\$6,508,555

By feeding this estimate of total consumption expenditures into the IMPLAN model, we obtain the estimates of annual economic impact shown in Table 7. These estimates are for the region encompassed by the *SkillSource* Group’s service area, which includes Fairfax, Loudoun, and Prince William counties, and the cities of Fairfax, Falls Church, Manassas, and Manassas Park. With respect to overall economic output, we estimate that the combined annual direct and indirect economic impact associated with job placements from the VASAVOR program is \$7.9 million. In addition, this economic impact itself generated a total of 34 additional jobs, and \$787 thousand in state, local, and federal tax revenue.

<sup>32</sup> IMPLAN is produced by Minnesota IMPLAN Group, Inc.

<sup>33</sup> Estimates of consumption expenditures are derived using data from the U.S. Department of Labor’s “2006 Consumer Expenditure Survey.” Because annual consumption expenditures from individuals in this income bracket typically exceed annual income, for purposes of this analysis consumption expenditures have been restricted to estimated after tax, or disposable, income.

**Table 7: Annual Economic Impact of Consumption Expenditures from Former Inmates employed through the VASAVOR Program**

	Direct	Indirect	TOTAL
<b>Output</b>	\$6,508,555	\$1,429,015	<b>\$7,937,570</b>
<b>Employment</b>	25	9	<b>34</b>
<b>Fiscal</b>			<b>\$787,084</b>
State and Local Tax Revenue			\$349,413
Federal Tax Revenue			\$437,671

Conservatively restricting our estimate of the economic benefit associated with job placements from the VASAVOR program to the annual tax revenue that is ultimately generated, and dividing that figure by total program enrollment, indicates that the total economic benefit per VASAVOR participant is \$2,467.<sup>34</sup>

$$\begin{aligned} & \$787,084 \text{ (total state and local tax revenue)} / 319 \text{ (program participants)} \\ & = \$2,467 \text{ (economic benefit per participant)} \end{aligned}$$

## Costs

Based on data provided by VASAVOR program administrators, per participant program costs were \$4,553 in 2009 (the most recent year for which data are available).<sup>35</sup>

## Benefit/Cost Ratio

Table 8 compares the three per participant benefits derived in the this section, to the actual per participant cost detailed above. As this table shows, based on this comparison, the benefit/cost ratio associated with the VASAVOR program is 7.1. Each \$1 in cost allocated to the program is associated with more than \$7 in benefits.

<sup>34</sup> There are two reasons to consider this estimate of annual economic impact to be highly conservative. The first is that we restrict it to the tax revenue generated as opposed to total economic output. The second is that we restrict it to an annual estimate as opposed to using a discounted present value figure that would include all the future years that a former inmate is likely to be employed.

<sup>35</sup> Data Source: VASAVOR program.

**Table 8: Estimated VASAVOR Program Benefit/Cost Ratio**

Benefit per VASAVOR Participant			Total Benefit per VASAVOR Participant	Program Costs per VASAVOR Participant	Benefit/Cost Ratio
Reduced Incarceration Costs	Victim Costs Avoided	State and Local Tax Revenue from Employed Former Inmates			
\$22,846	\$7,203	\$2,467	\$32,516	\$4,553	7.1

### Pre-Release Employment Center (PRC)

#### **Benefits**

As with the VASAVOR program, from an economic perspective the PRC has three primary benefits – decreased expenditures on correction and detention, and reduced victim costs, because of fewer recidivists, and the economic contribution that former offenders make when they become successfully employed. Each of these economic benefits is addressed in turn.

#### *Reduced Incarceration Costs*

Table 9 provides data on PRC participants by offense category as well as the average new sentence received by recidivists in Virginia in those offense categories. It then uses these data to estimate the likely new sentence that would be imposed on a PRC recidivist. As shown in Table 9, that estimate is 2.9 years.

**Table 9: Estimated New Sentence Received by PRC Recidivists**

Offense Category	PRC Participants by Offense Category <sup>36</sup>	Average New Sentence Received by Recidivists <sup>37</sup>
Property Crimes	29%	3.8 years
Non-Violent Crimes	54%	2.3 years
Drugs	17%	3.4 years
<b>Weighted Average</b>		<b>2.9 years</b>

As in the earlier VASAVOR analysis, we then use this expected sentence, along with data on incarceration costs, to compute the public safety expenditures that would likely be associated with a PRC recidivist.<sup>38</sup> According to estimates developed annually by the Virginia Compensation Board, the daily cost of housing an inmate in the Fairfax County Adult Detention Center, inclusive of capital costs, was \$158.86 in fiscal year 2008 (the most recent year for which we have data).<sup>39</sup> As shown in the formula below, multiplying this figure by 365.24 (the average number of days in a year once we include leap years) indicates that the annual cost of housing an inmate in the Fairfax County Adult Detention Center is approximately \$58,022.

$$\text{\$158.86 (daily cost) x 365.24 (days in a year) = \text{\$58,022 (total annual cost)}$$

Multiplying this figure by the expected new sentence length of 2.9 years, and performing a discounted present value calculation, shows that the discounted present cost associated with incarcerating a PRC recidivist is approximately \$157,263.<sup>40</sup>

**Discounted Present Value of Total Incarceration Cost = \$157,263 per PRC recidivist**

In the next step of the analysis, we compute the likely reduction in recidivists associated with the PRC initiative. Table 10 uses the data on statewide recidivism rates presented in Figure 8, along with information on PRC participants by offense category, to estimate a

<sup>36</sup> Data Source: Pre-Release Employment Center.

<sup>37</sup> Data Source: "Recidivism in Virginia," May 2005.

<sup>38</sup> Data Source: "FY 2008 Jail Cost Report," Virginia Compensation Board, Report to the General Assembly, November 1, 2009.

<sup>39</sup> Data Source: "FY 2008 Jail Cost Report," Virginia Compensation Board, Report to the General Assembly, November 1, 2009.

<sup>40</sup> The formula used to compute discounted present value is  $DPV = FV / (1 + nr)$ , where  $DPV$  is the discounted present value,  $FV$  is the future value,  $n$  is the number of years, and  $r$  is the discount rate. The discount rate used in the present calculation is 4.5%, which is the current interest rate on a 30 year U.S. Treasury bond.

“benchmark” statewide recidivism rate for PRC participants. What that calculation shows is that the statewide benchmark recidivism rate for individuals from similar offense categories is 21.3 percent. Recall from Figure 8 that the estimated recidivism rate for PRC participants was 4.2 percent. Comparing this number with the estimated benchmark indicates that, in contrast to what we would otherwise expect based on statewide data, the PRC initiative is associated with a 17.1 percent reduction in recidivism rates.<sup>41</sup>

**Table 10: Estimated “Benchmark” Statewide Recidivism Rate for PRC Participants**

Offense Category	PRC Participants by Offense Category <sup>42</sup>	Statewide Recidivism Rate <sup>43</sup>
Property Crimes	29%	25.1%
Non-Violent Crimes	54%	20.0%
Drugs	17%	19.2%
<b>Weighted Average</b>		<b>21.3%</b>

Multiplying this estimated PRC specific reduction in recidivism rates by total program enrollment indicates that the PRC program has likely been responsible for reducing the number of re-incarcerated recidivists by approximately 22 individuals.

$$17.1\% \text{ (PRC specific reduction in recidivism)} \times 130 \text{ (program enrollment)} = 22.3 \text{ (reduction in recidivists)}$$

Multiplying this estimated reduction in recidivists by the discounted present value cost of re-incarceration indicates that since its inception in 2008 through June 2009 the PRC has saved the state and local government approximately \$3.5 million in public safety expenditures for incarceration.

<sup>41</sup> Just as earlier with the VASAVOR program, the self-selection bias caveat applies in this case as well. In the absence of a more precise measure of the expected benchmark recidivism rate for PRC participants, however, the comparison between the PRC rate and the statewide rate provides us with the most accurate estimate of the program’s effectiveness currently available under existing data limitations.

<sup>42</sup> Data Source: Pre-Release Employment Center.

<sup>43</sup> Data Source: “Recidivism in Virginia,” May 2005.

$$\begin{aligned} & 22.3 \text{ (reduction in recidivists)} \times \$157,263 \text{ (total incarceration costs per recidivist)} \\ & = \$3,506,938 \text{ (total savings in public safety expenditures)} \end{aligned}$$

Finally, dividing this figure by total program enrollment, indicates that the public safety savings per PRC participant are approximately \$26,976.

$$\begin{aligned} & \$3,506,938 \text{ (total savings in public safety expenditures)} / 130 \text{ (program participants)} \\ & = \$26,976 \text{ (savings per participant)} \end{aligned}$$

### *Reduced Victim Costs*

Table 11 uses the estimated 22.3 reduction in recidivists associated with the PRC, along with data on the proportion of PRC participants in various offense categories (*see* Figure 5), and data on the proportion of recidivists in each category that recidivate in their original offense, to determine the number and distribution of recidivists who would likely re-offended in their original offense category.<sup>44</sup> Based on this series of calculations, it is estimated that approximately 15.0 of the 22.3 would have again committed crimes within their original offense category.

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<sup>44</sup> The “same offence” recidivism number computed in each row is determined by multiplying the estimated number of reduced recidivists attributable to the Pre-Release Employment Center (22.3), times the proportion of enrollees in that offence category (*e.g.*, 3 percent for breaking and entering), times the proportion of recidivists in that offence category that recidivate with the same offence (*e.g.*, 82.4 percent for breaking and entering), to determine the estimated number of “same offence” recidivists (*e.g.*, 0.6 for breaking and entering).

**Table 11: Estimated “Same Offense” Recidivists – PRC**

Offense Category	Estimated Reduction in Recidivists Attributable to PRC	PRC Enrollment by Original Offense Category <sup>45</sup>	Reported Proportion of Same Offense Recidivism <sup>46</sup>	Estimated Same Offense Recidivists by Offense Category
Breaking & Entering	22.3	3%	82.4%	0.6
Child Support		22%	57.4%	2.8
Driving felony		23%	57.4%	2.9
Drugs		17%	71.9%	2.7
Embezzlement		10%	82.4%	1.8
Forgery		3%	82.4%	0.6
Illegal Gambling		1%	57.4%	0.1
Parole Violation		8%	57.4%	1.0
Theft		13%	82.4%	2.4
<b>Total</b>			<b>100.0%</b>	

Table 12 displays the comparable calculation for “different offense” recidivists. Here we use the estimated number of different offense recidivists, along with data on the proportion of PRC participants in various offense categories, to allocate the estimated number of total different offense recidivists to specific offense categories.

<sup>45</sup> Data Source: Pre-Release Employment Center.

<sup>46</sup> Data Source: “Recidivism in Virginia,” May 2005.

**Table 12: Estimated “Different Offense” Recidivists – PRC**

Offense Category	Estimated Total Different Offense Recidivists	PRC Enrollment by Original Offense Category <sup>47</sup>	Estimated Different Offense Recidivists by Offense Category
Breaking & Entering	22.3 – 15.0 = 7.3	3%	0.2
Child Support		22%	1.6
Driving felony		23%	1.7
Drugs		17%	1.2
Embezzlement		10%	0.7
Forgery		3%	0.2
Illegal Gambling		1%	0.1
Parole Violation		8%	0.6
Theft		13%	1.0
<b>Total</b>			<b>100.0%</b>

Table 13 combines the “same offense” and “different offense” recidivists from Tables 11 and 12, and presents them with data on victim costs by type of offense, to derive an estimate of the total victim costs avoided because of the PRC’s positive impact on recidivism rates (offenses not assessed in the National Institute of Justice study are marked as “not available”). As shown, the total victim costs avoided are estimated to be \$85,745.

<sup>47</sup> *Data Source:* Pre-Release Employment Center. In contrast to the calculation for the VASAVOR program, proportion of program participants is used in this column instead of proportion of reported crimes. The reason for this difference is that the shorter sentence lengths generally associated with PRC offenders renders the distinction between the distribution of offenses across inmate populations and the inmate admissions stream less significant.

**Table 13: Estimated Reduction in Victim Costs Attributable to the PRC**

Offense Category	Estimated Same Offense Recidivists by Offense Category	Estimated Different Offense Recidivists by Offense Category	Estimated Total Recidivists by Offense Category	Cost Per Victim <sup>48</sup>	Estimated Total Victim Costs Avoided
Breaking & Entering	0.6	0.2	0.8	\$1,470	\$1,133
Child Support	2.8	1.6	4.4	N/A	N/A
Driving felony	2.9	1.7	4.6	\$18,000	\$83,376
Drugs	2.7	1.2	4.0	N/A	N/A
Embezzlement	1.8	0.7	2.6	N/A	N/A
Forgery	0.6	0.2	0.8	N/A	N/A
Illegal Gambling	0.1	0.1	0.2	N/A	N/A
Parole Violation	1.0	0.6	1.6	N/A	N/A
Breaking & Entering	2.4	1.0	3.3	\$370	\$1,236
<b>Total</b>	<b>15.0</b>	<b>7.3</b>	<b>22.3</b>		<b>\$85,745</b>

Dividing this figure by total program enrollment, indicates that the victim costs avoided per Pre-Release Employment Center participant are \$660.

$$\begin{aligned}
 &\$85,745 \text{ (total savings in victim costs) } / 130 \text{ (program participants)} \\
 &= \$660 \text{ (savings per participant)}
 \end{aligned}$$

<sup>48</sup> Data Source: Ted R. Miller, Mark A. Cohen, and Brian Wiersema, January 1996.

### Successful Employment

In this portion of the analysis, we once again use the IMPLAN model to quantify the economic contribution that former offenders make when they become successfully employed. As of June 2009, 54 of the 130 offenders enrolled in the PRC were currently employed, and the average equivalent annual salary for those individuals was \$19,011. Table 14 takes those data and combines them with recent data on consumer expenditures from the U.S. Department of Labor, to estimate the total annual consumption expenditures from former offenders employed through the PRC.<sup>49</sup> As shown, that figure is approximately \$1.0 million annually.

**Table 14: Annual Consumption Expenditures from Former Offenders employed through the PRC**

Program	Employed	Average Annual Salary	Total Before Tax Income	Total Consumption Expenditures
PRC	54	\$19,011	\$1,026,594	\$1,023,596

Inputting this estimate of total consumption expenditures into the IMPLAN model provides the estimates of annual economic impact shown in Table 15. As with the earlier analysis of the VASAVOR program, the study area upon which these estimates are based is comprised of the six localities that make up the *SkillSource* Group’s service area. With respect to overall economic output, we estimate that the combined annual direct and indirect economic impact associated with job placements from the PRC is approximately \$1.2 million. In addition, that economic impact itself generated a total of 5 additional jobs, and \$116 thousand in state, local, and federal tax revenue.

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<sup>49</sup> Estimates of consumption expenditures are derived using data from the U.S. Department of Labor’s “2006 Consumer Expenditure Survey.” Because annual consumption expenditures from individuals in this income bracket typically exceed annual income, for purposes of this analysis consumption expenditures have been restricted to estimated after tax, or disposable, income.

**Table 15: Annual Economic Impact of Consumption Expenditures from Former Offenders employed through the PRC**

	Direct	Indirect	TOTAL
<b>Output</b>	\$1,023,596	\$214,623	<b>\$1,238,219</b>
<b>Employment</b>	4	1	<b>5</b>
<b>Fiscal</b>			<b>\$116,437</b>
State and Local Tax Revenue			\$51,035
Federal Tax Revenue			\$65,403

Again conservatively restricting our estimate of the economic benefits associated with job placements to simply the annual tax revenue generated, and dividing this the total economic impact by total program enrollment, shows that the total economic benefit per PRC participant is \$896.<sup>50</sup>

$$\begin{aligned} & \$116,437 \text{ (total state and local tax revenue) / 130 (program participants)} \\ & = \$896 \text{ (economic benefit per participant)} \end{aligned}$$

## Costs

Based on data provided by PRC program administrators, per participant program costs are estimated to be \$1,323.

## Benefit/Cost Ratio

Table 16 compares the three per participant benefits derived in this section, to the actual per participant cost detailed above. As this table shows, based on this comparison, the benefit/cost ratio associated with the PRC is 21.6. Each \$1 in cost allocated to the center is associated with almost \$22 in benefits.

<sup>50</sup> There are two reasons to consider this estimate of annual economic impact to be highly conservative. The first is that we restrict it to the tax revenue generated as opposed to total economic output. The second is that we restrict it to an annual estimate as opposed to using a discounted present value figure that would include all the future years that a former inmate is likely to be employed.

**Table 16: Estimated PRC Benefit/Cost Ratio**

Benefit per PRC Participant			Total Benefit per PRC Participant	Program Costs per PRC Participant	Benefit/Cost Ratio
Reduced Incarceration Costs	Victim Costs Avoided	State and Local Tax Revenue from Employed Former Offenders			
\$26,976	\$660	\$896	\$28,532	\$1,323	21.6

## Conclusion

This report has assessed the economic benefits and costs associated with two prisoner reentry programs – the Fairfax Virginia Serious and Violent Offender Reentry Initiative (VASAVOR) and the Fairfax Pre-Release Employment Center (PRC). That assessment has shown that in both cases the benefits derived from the program, in terms of a reduction in future incarceration and victim costs attributable to reduced recidivism rates, far outweigh its associated costs, in terms of program budget.

With respect to the VASAVOR program, our analysis has shown that the program is associated with a 7.1 benefit/cost ratio – every \$1 in cost allocated to the program is associated with more than \$7 in benefits. With respect to the PRC, our analysis has shown that the center is associated with a 21.6 benefit/cost ratio – every \$1 in cost allocated to the center is associated with almost \$22 in benefits



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