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KIMBERLY FOLEY  
MARY FARRELL  
RILEY WEBSTER  
(MEF ASSOCIATES)

JOHANNA WALTER  
(MDRC)

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The Enhanced Transitional Jobs Demonstration

# REDUCING RECIDIVISM AND INCREASING OPPORTUNITY

## Benefits and Costs of the RecycleForce Enhanced Transitional Jobs Program

**R**ecycleForce, a social enterprise that provides electronic recycling services in Indianapolis, was one of seven sites that received funding and was evaluated as part of the Enhanced Transitional Jobs Demonstration (ETJD), sponsored by the Employment and Training Administration in the U.S. Department of Labor. RecycleForce provided subsidized jobs at a recycling plant to formerly incarcerated men and women. In addition to placing participants in jobs where they learned work skills in the recycling business, the program provided them with case management, peer mentorships, job development (outreach to employers), and assistance with issues related to child support orders and arrears.

This brief provides analysis of the financial benefits and costs of RecycleForce's ETJD program. The overall benefits to society from RecycleForce — from reduced recidivism and increased employment — outweighed program costs by about \$2,200 per person. The benefit-cost ratio for the program from society's perspective was 1.20; that is, for every dollar invested in RecycleForce, \$1.20 was generated. Participants benefited from increased earnings, while potential victims of crime benefited from reduced victimization. From the government's perspective, the benefits of the program did not outweigh the cost of operating the program. However, there may have been additional benefits that were not quantified as part of this analysis.



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UNITED STATES DEPARTMENT OF LABOR

Every year, almost 600,000 individuals are released from state prisons in the United States;<sup>1</sup> over two-thirds of those released will be rearrested within three years.<sup>2</sup> Reducing this recidivism can generate substantial benefits to society by reducing criminal justice costs to the government, crime victimization costs, and the costs of incarceration to the reoffenders and their families.

Programs providing transitional jobs coupled with other reentry support to former prisoners aim to increase employment and reduce recidivism. In addition to providing program participants with a legitimate source of income soon after their release, transitional jobs, which are short-term and publicly subsidized, are meant to teach participants basic work skills, help them address barriers to employment, and help them find unsubsidized jobs. Previous studies of these types of programs have shown mixed results. Several rigorous evaluations of transitional jobs programs that targeted formerly incarcerated individuals found that the programs increased earnings while the participants were working in the subsidized jobs, but the earnings gains faded after participants left the programs.<sup>3</sup> And among the studies reviewed, only one program, the New York City-based Center for Employment Opportunities (CEO), reduced the rates at which former prisoners committed new crimes and were reincarcerated.<sup>4</sup>

RecycleForce, a social enterprise that provides electronic recycling services in Indianapolis, received

funding from the U.S. Department of Labor to operate one of seven programs participating in the Enhanced Transitional Jobs Demonstration (ETJD). (Box 1 provides more information about ETJD.) RecycleForce developed a transitional jobs program designed to help formerly incarcerated men and women successfully reenter society and decrease their chance of reoffending. It provided participants with subsidized jobs at a recycling plant as well as enhanced support that included case management, peer mentorships, job development (outreach to employers), occupational training,<sup>5</sup> work-related financial support, and assistance with issues such as child support order and arrears modifications.

All ETJD programs, including RecycleForce, were evaluated using a rigorous random assignment research design, in which individuals who were eligible for and expressed interest in participating in each program were assigned, through a lottery-like process, to a program group that had access to the specific program or a control group that did not.<sup>6</sup> This process created two groups that were comparable at the start of the study. The evaluation followed both groups for 30 months using government administrative records and individual surveys (one at 12 months and another at 30 months) to see whether differences emerged between the groups. If the differences (known as *impact estimates*) are found to be statistically significant, one can say with a high degree of confidence that they are attributable to the program rather than

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**1** Carson and Anderson (2016).

**2** Durose, Cooper, and Snyder (2014).

**3** Dutta-Gupta, Grant, Eckel, and Edelman (2016).

**4** Redcross, Millenky, Rudd, and Levshin (2012).

**5** RecycleForce provided training on-site once a week on Occupational Safety and Health Administration (OSHA) modules, such as forklift operator safety, machine guarding, material handling, and warehouse safety.

**6** Control group members were usually given a list of other services in the community that they could seek out on their own.

## BOX 1

### THE ENHANCED TRANSITIONAL JOBS DEMONSTRATION

The Enhanced Transitional Jobs Demonstration (ETJD) is a large-scale demonstration project sponsored by the Employment and Training Administration (ETA) in the U.S. Department of Labor. In 2010, ETA held a national competition to select seven organizations to operate transitional jobs programs targeting either (a) low-income parents who did not live with one or more of their children (noncustodial parents) and who owed child support, or (b) individuals returning to the community from prison. Applicants were required to describe how their programs would be “enhanced” relative to earlier transitional jobs programs that had been tested. Each of the selected organizations received about \$6 million to serve 500 people. ETA contracted with MDRC and its partners, Abt Associates and MEF Associates, to conduct a multifaceted evaluation of the ETJD programs. (A description of the programs is provided in Appendix A in the technical supplement to this brief.) An earlier report described the implementation of the ETJD programs and their effects on participants’ outcomes over a 12-month period,\* and a final report presents results from the evaluation based on 30 months of follow-up.†

\*Redcross, Barden, and Bloom (2016).

†Barden et al. (2018).

to preexisting differences between the two groups. Full results, including costs for all seven programs, are available in the ETJD final report.<sup>7</sup>

This brief presents the financial benefits and costs of the ETJD program at RecycleForce and puts them in the context of similar programs. The brief focuses on RecycleForce because comparisons between the program and control groups indicated that this program increased individuals’ employment and earnings and reduced recidivism, which were the primary goals of the program. The impact

results, described briefly below, suggest that the benefits of the program might outweigh the costs. RecycleForce was the only one of the three programs targeting formerly incarcerated individuals to have an impact on recidivism over the 30-month follow-up period. In addition, the RecycleForce program is unique among the programs in the ETJD study in operating within a social enterprise (a business with a social purpose), generating revenue from its recycling business to help fulfill its broader mission to provide “life-changing workforce training to formerly incarcerated individuals.” Research, especially benefit-cost analyses, on these types of businesses is limited.

The benefit-cost analysis set out to answer three questions:

- 1 What were the costs and benefits of the RecycleForce ETJD program?
- 2 Did the benefits of RecycleForce’s ETJD program outweigh the costs, from the perspectives of the government, victims of crime, program group members, and society as a whole?
- 3 How do the benefits and costs of RecycleForce compare with those of other programs providing similar services to formerly incarcerated individuals?

### CHARACTERISTICS OF THE STUDY PARTICIPANTS

RecycleForce enrolled 1,000 sample members into the study over a two-year period.<sup>8</sup> The character-

<sup>7</sup> Barden et al. (2018).

<sup>8</sup> After enrollment, two individuals withdrew from the study, so the final analysis sample size was 998.

istics of the study participants reflect the criteria established by the Department of Labor and RecycleForce. To be eligible for the program, individuals had to meet the following criteria:

- Released from a federal or state prison within the past 120 days
- Scored medium to high on the Indiana Risk Assessment System, which measures a person's risk of reoffending
- At least 18 years old, convicted of a crime as an adult under federal or state law, and never convicted of a sex offense
- No recent history of working consistently

The interim report presented background characteristics of the research sample at the time they entered the study.<sup>9</sup> The typical participant was an unmarried black man in his 30s who had been convicted of a felony. He had worked in the past but had limited recent work experience because of his incarceration. He was staying in someone else's home or living in a transitional facility such as a halfway house. About one-quarter did not have a high school diploma or equivalent, and close to two-thirds of participants had minor-age children.

## PROGRAM IMPACTS

To provide context for the benefit-cost analysis results, Tables 1 and 2 present the RecycleForce

program impacts, which are discussed in detail in the ETJD final report.<sup>10</sup>

Table 1 presents the impacts on criminal justice outcomes: Over the 30-month period, RecycleForce reduced recidivism (measured as any criminal justice event) by about 6 percentage points, a decrease of 8 percent. That is, fewer program group members had an encounter with the criminal justice system because of their enrollment in RecycleForce. Examining specific measures of recidivism, the analysis shows that the program led to statistically significant reductions in incarcerations and prison admissions for parole or probation violations. Because days in prison are costly, this can result in considerable savings to the government.

Table 2 presents impacts on employment and earnings based on analysis of administrative data, which include only jobs covered by unemployment insurance.<sup>11</sup> Over the 30-month period, program group members earned \$4,775 more than control group members, a 54 percent gain. In the last year of follow-up, they earned just over \$1,000 more than the control group, which amounts to a 24 percent gain.

## FINDINGS FROM THE BENEFIT-COST ANALYSIS

This benefit-cost analysis examines how RecycleForce's ETJD program generated costs or savings compared with what would have occurred in the absence of the program. Impacts from the study are used to generate estimates of costs and savings

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<sup>9</sup> Redcross, Barden, and Bloom (2016).

<sup>10</sup> Barden et al. (2018).

<sup>11</sup> Jobs in the informal economy, jobs in which workers are treated as independent contractors, and some other types of employment are not included in this measure.

**TABLE 1**  
**IMPACTS OF RECYCLEFORCE ON CRIMINAL JUSTICE**  
**OUTCOMES OVER 30 MONTHS**

<b>OUTCOME</b>	<b>PROGRAM GROUP</b>	<b>CONTROL GROUP</b>	<b>DIFFERENCE (IMPACT)</b>	<b>90% CONFIDENCE INTERVAL</b>
Arrested, convicted, or admitted to jail or prison (%)	67.4	73.6	-6.2**	[-10.7, -1.7]
Arrested (%)	46.4	51.0	-4.6	[-10.3, 1.1]
Convicted of a crime (%)	36.2	40.4	-4.2	[-9.8, 1.4]
Convicted of a felony	20.3	25.2	-4.9	[-9.8, 0.1]
Convicted of a misdemeanor	18.4	18.5	-0.1	[-4.7, 4.5]
Convicted of a violent crime (%)	7.5	6.7	0.8	[-2.3, 3.9]
Incarcerated (%)	66.1	72.5	-6.4**	[-11.1, -1.7]
Incarcerated in jail	64.3	68.8	-4.5	[-9.4, 0.3]
Incarcerated in prison	31.3	39.9	-8.6***	[-13.5, -3.8]
Admitted to prison (%)				
For a new crime	7.8	10.3	-2.5	[-5.5, 0.4]
For a parole or probation violation	24.7	30.3	-5.6**	[-10.1, -1.0]
Total days incarcerated	161	209	-48***	[-75, -21]
Jail	72	86	-14	[-28, 0]
Prison	90	121	-31***	[-49, -12]
Sample size	491	491		

SOURCE: MDRC calculations based on criminal justice data.

NOTES: Results in this table are regression-adjusted, controlling for pre-random assignment characteristics.

Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

Rounding may cause slight discrepancies in calculating sums and differences.

**TABLE 2**

**IMPACTS OF RECYCLEFORCE ON EMPLOYMENT AND EARNINGS**

<b>OUTCOMES BASED ON ADMINISTRATIVE DATA</b>	<b>PROGRAM GROUP</b>	<b>CONTROL GROUP</b>	<b>DIFFERENCE (IMPACT)</b>	<b>90% CONFIDENCE INTERVAL</b>
Total earnings during 30-month follow-up (\$)	13,680	8,905	4,775***	[3,455, 6,094]
Total earnings in last year of follow-up (\$)	5,202	4,186	1,016**	[261, 1,771]
Ever employed in last year of follow-up (%)	64.7	55.7	9.0***	[3.9, 14.1]
Quarters employed during last year of follow-up	1.6	1.3	0.3***	[0.1, 0.4]
Employed in all quarters of last year of follow-up (%)	13.8	10.5	3.3	[-0.1, 6.6]
Sample size	500	497		

SOURCE: MDRC calculations based on quarterly wage data from the National Directory of New Hires.

NOTES: Results in this table are regression-adjusted, controlling for pre-random assignment characteristics.

Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

Rounding may cause slight discrepancies in calculating sums and differences.

Employment rates and earnings include both ETJD subsidized jobs and all other jobs covered by unemployment insurance.

from four different perspectives: government, victims of crime, the program participant, and society, which takes into account the other three perspectives. Program costs, as well as costs and benefits due to changes in employment and recidivism,<sup>12</sup> are used to calculate the net present value of the program. Box 2 defines the terms used in the benefit-cost analysis.

This analysis presents all costs and benefits in 2016 dollars and uses a 2 percent discount rate on future costs and benefits. It provides the benefit-cost ratio

of the program for society as a whole, as well as from the government’s perspective.

**Net Cost**

The net cost analysis examines how much more was spent on the program group members than the control group members, as a result of their enrollment in the RecycleForce program.

The net cost for the program group is expressed as a cost to the government, as ETJD was funded with

<sup>12</sup> Because of different time frames, the data included in the benefit-cost analysis do not exactly match those presented in the previous section on program impacts.

## BOX 2

### TERMS USED IN BENEFIT-COST ANALYSIS

**DISCOUNTING:** Benefit-cost analysis expresses all benefits and costs in terms of the present. To account for the fact that a dollar in the future is less valuable than a dollar in the present, future costs and benefits are discounted at a predetermined rate multiplied by their distance in the future.

**NET PRESENT VALUE:** Net present value expresses the difference between net benefits and net costs, expressed in today's dollars. In this analysis, net benefits represent the savings produced by RecycleForce's effect on recidivism and the difference in employment between the program and control groups. The net cost is the difference between the amount spent on RecycleForce members and the amount spent for similar services for the control group.

**BENEFIT-COST RATIO:** To understand whether the benefits outweigh the costs, the net benefits are divided by the net costs. The ratio expresses the value returned for each dollar that is spent on the program. If a ratio is above one, it means the program returned benefits greater than the investment; if it is below one, it means that the benefits generated by the program did not outweigh the costs.

a federal grant. This represents the total amount spent on RecycleForce participants less the cost of providing services to control group members. The total cost for program group members represents RecycleForce program costs, as well as education and training that the participants received from programs and services outside of RecycleForce. Table 3 shows the categories and breakdowns of the net costs for RecycleForce.

The cost of providing RecycleForce ETJD program services fell into three categories: (1) the cost of operating RecycleForce, including staff salaries, fringe benefits, equipment and supplies, overhead, administrative costs, business expenses, and payroll costs; (2) support services provided to program group members; and (3) subsidized wages.

- **OPERATING COSTS.** The total operating costs include the costs of providing program services to ETJD participants, including staff case management, peer mentorships, job development, on-site Occupational Safety and Health Administration (OSHA) training, staff overhead, and payroll costs. This category also includes a portion of the cost of operating the RecycleForce business, such as maintaining the equipment and vehicles, advertising the services in the community, and other business expenses. RecycleForce hired some program group members after the end of the subsidy; the unsubsidized work is considered outside of the ETJD program and is not included in the ETJD program costs. As Table 3 shows, the cost of ETJD operations averaged \$6,322 per program group member.
- **SUPPORT SERVICES.** The support services provided by the program included expenses for high school equivalency test preparation, transportation assistance (bus passes and gas cards), clothing, tools, housing and utility assistance, and eyeglasses. The program spent an average of \$138 per person for these kinds of support.
- **SUBSIDIZED WAGES.** The program spent an average of \$4,597 per person for the wages to program participants.

The total cost of RecycleForce was \$11,057 per person. This is higher than the cost of the other six ETJD programs in the evaluation and other transitional jobs programs that have been studied. However, as noted above, this includes a portion of the cost of operating the RecycleForce business. In addition, RecycleForce was the only program in the evaluation that brought in revenue that could offset the operating costs. The remainder (the costs less the revenue) may be considered to be the cost required to provide ETJD participants with the

**TABLE 3****ESTIMATED NET COST OF RECYCLEFORCE PER PROGRAM GROUP MEMBER (IN 2016 DOLLARS)**

<b>COMPONENT</b>	<b>PROGRAM GROUP</b>	<b>CONTROL GROUP</b>	<b>NET COST</b>
RecycleForce program costs			
Program operations	6,322		
Support services	138		
Subsidized wages	4,597		
Total RecycleForce program costs	11,057	0	11,057
Non-ETJD costs			
Job search	0	289	-289
Education (ESL, ABE, GED)	624	581	43
Community college	591	642	-51
Vocational training	473	158	315
Total non-ETJD costs	1,688	1,670	18
Total costs	12,745	1,670	11,075

SOURCES: Calculations for ETJD costs are based on fiscal data from ETJD programs and participation data from the ETJD management information system. Calculations for non-ETJD costs are based on data from the National Center for Education Statistics' Integrated Postsecondary Education Data System; the Office of Career, Technical, and Adult Education's National Reporting System; the ETJD 12-month survey; and Mastri and McCutcheon (2015).

NOTE: ESL = English as a second language; ABE = adult basic education; GED = General Educational Development exam preparation.

program services and support needed. As shown in Table 4, the revenue is estimated to be \$3,257 per program group member, making the cost less revenue an estimated \$7,800 per program group member. This is comparable to the program costs of the other ETJD programs, which ranged from \$6,971 to \$8,461 per program group member.

It is also important to consider the cost of services that program group members received outside of RecycleForce and the cost of services that control

group members received. These include expenditures by outside agencies for providing job search and education and training services, such as basic education, community college, and vocational training (training for a specific job, trade, or occupation, usually obtained from a community college or for-profit private school). The analysis estimated the cost of these outside services to be \$1,688 for the program group and \$1,670 for the control group. The non-ETJD costs include the cost of job search services provided to control

**TABLE 4****ESTIMATED REVENUE PER PROGRAM GROUP MEMBER (IN 2016 DOLLARS)**

REVENUE SOURCE	REVENUE
Sale of recycled materials	1,960
E-scrap processing fees	1,142
Pickup fees	100
Contributions/miscellaneous	55
Total revenue	3,257

SOURCE: Fiscal data from RecycleForce.

group members, which are zero for program group members because they are included in the RecycleForce costs. But program group members were more likely to participate in vocational training than control group members, evening out the costs.<sup>13</sup> Overall, the net cost of RecycleForce was \$11,075 per program group member not accounting for revenue, which is presented as a benefit and discussed below.

### Net Benefit

The benefits from RecycleForce stemmed from reduced recidivism among program group members, which generated savings to the government and benefits to potential victims of crime; increased output from the work produced by program group members; and increased earnings for program group participants, as well as tax payments to the government as a result of increased

earnings. This analysis focuses on the quantifiable benefits based on the impacts of the program.

For the recidivism measures, the research team estimated the costs associated with arrests, court cases, prison and jail, and victimization. Recidivism costs for arrests and court cases were estimated over the 30-month period, while prison and jail costs extended beyond that time frame. Because the length of stay in prison and jail may not be observable in the 30-month time frame, especially for admissions that occurred late in the study period, the analysis used an average length of stay based on the types of crimes for which study sample members were convicted, as opposed to the actual length of time they had been in prison or jail by the end of 30 months.

The marginal cost for each element of criminal justice system involvement was used, rather than the average cost. The marginal cost reflects the cost of a one-unit change in the use of criminal justice system resources, while the average cost reflects all costs, including those that would not be affected by a one-unit change. For example, in an analysis of prison costs, marginal daily cost per inmate is the cost of housing one additional inmate per day (including costs such as food and clothing), while the average daily cost equals the total prison daily budget divided by the average daily population. Using average cost can therefore lead to an overestimation of savings. The research team applied the marginal cost for each criminal justice event to the average number of incidents per program group member and control group member and compared them to estimate the difference.<sup>14</sup>

<sup>13</sup> Information on the type of training they received is not available from the data, and some of this training might have been provided by RecycleForce. To the extent that the training was provided by RecycleForce, the analysis may overestimate the net cost.

<sup>14</sup> All criminal justice incidents were included in the analysis, even if the difference in incidence between the program and control groups was nonsignificant.

The methodology and results from each element of criminal justice system involvement are described below; the results are shown in Table 5. Further detail is available in Appendix Table B.2 in the technical supplement.<sup>15</sup>

- **ARRESTS.** This category includes the law enforcement costs for one arrest at the Indianapolis Metropolitan Police Department. Savings due to arrests were relatively small, at \$44 per program group member.
- **COURT CONVICTIONS.** Cost savings from court cases were estimated using the average number of felony convictions for violent and nonviolent crime for each group. Savings from reduced nonviolent felony convictions were only \$10, while the program group members incurred a slightly larger cost on the system from violent felony convictions, at \$90.
- **PRISON AND JAIL.** The costs of operating the facility, such as the costs for food, clothing, medical costs, and staffing, were applied to the average number of days each group would have spent in the facility. For prison, length of stay was determined by the type of admission and, for convictions, the type of crime, while for jail, it was based on an average length of stay across all types of admissions.<sup>16</sup> Reduced admissions to prison for program group members, for both new crimes and parole violations, accounted for the largest savings to the criminal justice system, at \$1,414 and \$1,973 respectively. Admis-

sions to jail also produced savings, at \$178 per program group member.

- **VICTIMIZATION.** The research team estimated the number of crimes avoided, based on the number of arrests for the program and control groups, and associated costs, such as medical expenses and lost or damaged property for victims, to determine the avoided victim cost. Participation in RecycleForce led to \$686 in savings per program group member attributable to reduced victimization from crime prevented.

As shown in Table 5, the benefit from decreased use of criminal justice resources and reduced victimization totaled \$4,215 per person. This was a benefit for society as a whole.

Benefits from employment are expressed through the earnings for individuals, tax credits and payments based on these earnings, and fringe benefits associated with employment, as well as through the value of the output of the work that program participants performed.<sup>17</sup> This analysis uses a 100 percent decay rate. A decay rate estimates how quickly the benefits from the program diminish; a 100 percent decay rate assumes that all impacts disappear after the observed period, which varies from 3.75 to 5 years, depending on when the study participants were randomly assigned (participants entered the study between November 2011 and October 2013). It is important to note that the observed period used in the benefit-cost analysis covers a longer period than the 30-month impacts

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<sup>15</sup> Appendixes A to C can be found in Kimberly Foley, Mary Farrell, Riley Webster, and Johanna Walter, *Reducing Recidivism and Increasing Opportunity: Benefits and Costs of the RecycleForce Enhanced Transitional Jobs Program — Technical Supplement* (New York: MDRC, 2018).

<sup>16</sup> Marginal cost and length of stay estimates for the criminal justice system come from a variety of sources, including published estimates in reports and consultation with state and local agencies.

<sup>17</sup> Earnings data come from the National Directory of New Hires, while federal, state, and local tax information was available through federal, state, and local documentation.

**TABLE 5**

**ESTIMATED BENEFITS OF RECYCLEFORCE FROM REDUCED RECIDIVISM (IN 2016 DOLLARS)**

<b>PART OF THE SYSTEM</b>	<b>PROGRAM GROUP COST<sup>a</sup></b>	<b>CONTROL GROUP COST<sup>a</sup></b>	<b>DIFFERENCE: PER PERSON COST SAVINGS</b>
Police (arrests)	555	598	44
Court			
Violent crime convictions	457	367	-90
Nonviolent crime convictions	36	46	10
Jail	3,034	3,212	178
Prison			
New crime	4,348	5,762	1,414
Parole violation	7,456	9,429	1,973
Total	15,885	19,414	3,529
Victim benefits			686
Total criminal justice benefits			4,215

SOURCES: Marginal costs were estimated using cost information from county and state criminal justice agencies and published reports, as detailed in Appendix Table B.1.

NOTES: Rounding may cause slight discrepancies in calculating sums and differences.

<sup>a</sup>Program and control group costs represent how much the average program and control group member incurred on each part of the criminal justice system. These costs are equal to the average number of criminal justice incidents each group member experienced multiplied by the marginal cost of that incident (e.g., average number of arrests per program or control group member times the marginal cost of an arrest).

reported above. Further detail on sources, methods, and time frame is available in Appendix B in the technical supplement.

Table 6 shows the overall breakdown of benefits and costs from increased employment, from both the government’s and participants’ perspectives.

- **EARNINGS AND BENEFITS.** Program group members earned \$5,696 more than control group members over the five-year period. Required fringe benefits (unemployment insurance and workers’ compensation) were a benefit to participants, at \$108.

**TABLE 6**

**ESTIMATED BENEFITS OF RECYCLEFORCE FROM INCREASED EMPLOYMENT  
(IN 2016 DOLLARS)**

	GOVERNMENT			PARTICIPANT		
	PROGRAM GROUP	CONTROL GROUP	DIFFERENCE	PROGRAM GROUP	CONTROL GROUP	DIFFERENCE
Earnings <sup>a</sup>	0	0	0	27,023	21,328	5,696
Fringe benefits	0	0	0	513	405	108
Tax payments and credits <sup>b</sup>						
Tax payments	7,042	5,662	1,381	-4,981	-4,036	-945
Earned Income Tax Credit	-1,705	-1,251	-453	1,705	1,251	453
Child credits	-298	-226	-72	298	226	72
Total tax payments and credits	5,040	4,184	856	-2,978	-2,558	-420
Value of output <sup>c</sup>	3,257	0	3,257	0	0	0
Total			4,113			5,384

SOURCE: Employment data based on quarterly wage data from the National Directory of New Hires.

NOTES: Rounding may cause slight discrepancies in calculating sums and differences.

<sup>a</sup>Employment earnings include up to five years of data for both ETJD subsidized jobs and all other jobs covered by unemployment insurance.

<sup>b</sup>State and federal taxes and credits were estimated using rules for the 2016 filing year.

<sup>c</sup>Value of output is measured by revenue from RecycleForce operations.

- TAX PAYMENTS.** Due to the increase in earnings, there was an increase in tax payments (from both participants and employers) to the government, which is a benefit to the government, at \$1,381 per person.<sup>18</sup> Tax payments were a loss to participants, who paid more than their control group counterparts by \$945.
- TAX CREDITS.** Tax credits were a transfer from the government to participants; the Earned

<sup>18</sup> Note that taxes paid by employees and taxes paid by employers are considered a benefit to the government, but not to society as a whole, because they represent a transfer from the employee or the employer to the government, respectively. Because the table does not show the benefits and costs to employers (such as the cost of wages and benefits, revenue, and other value of output from jobs), employer-paid taxes are presented only as a benefit to the government. The employer taxes paid by RecycleForce are included in the program costs.

Income Tax Credit generated a \$453 loss to the government and a gain to participants, while child tax credits were much smaller, as a \$72 loss to the government and benefit to participants.

- **VALUE OF JOB OUTPUT.** The value of the output from jobs was the largest benefit to the government on the employment side, at \$3,257. This is estimated using the value of the revenue that RecycleForce generated through its recycling business, in which program group members worked subsidized jobs. This is considered a benefit to the government, as the revenue offsets the cost of the program. The revenue allowed RecycleForce to provide more services than it would otherwise have been able to provide with the government funding it received for the ETJD program.

In addition to the benefits from recidivism and employment, the research team estimated the value of Supplemental Nutrition Assistance Program (SNAP) payments provided to program group members and control group members and child support payments made by both groups (see Table 7). Program group members received approximately \$166 less in SNAP than the control group.<sup>19</sup> This is expressed as a loss to participants, but as a benefit to the government, through reduced costs. The government also benefited from a decrease in the cost of administering the program, at \$22.<sup>20</sup>

Program group members paid \$490 more in child support payments than the control group (see Table 7). Most of the increase in child support payments went to custodial parents (88 percent),

compared with 12 percent that went to the government; the net benefit to society is zero.

## Net Present Value of RecycleForce

Table 7 combines the net costs and net benefits for each perspective to obtain the net present value and presents the benefit-cost ratios. Three perspectives included in this analysis experienced net benefits as a result of the program. Overall, the benefits to society from the ETJD RecycleForce program outweighed the costs by \$2,222 per person. The benefit-cost ratio for the program from society's perspective is 1.20; that is, for every dollar invested in RecycleForce, \$1.20 was generated. This result suggests that program generated more in benefits than it cost to operate when the perspectives of government, victims of crime, and participants are taken into account.

Overall, participants received \$4,728 per person in benefits as a result of the program. This strong benefit was due to increased earnings, which were offset only slightly by an increase in taxes paid as a result of their employment. These benefits were also decreased by additional child support payments made and a decrease in SNAP benefits received.

Avoided costs for potential victims amount to a benefit of \$686 per person; victims did not experience any costs of the program. These avoided costs, from crime prevented due to RecycleForce, include medical expenses and damage to property.

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<sup>19</sup> The difference in SNAP benefits was estimated from the 12- and 30-month surveys, which calculated an average difference in the percentage of each group receiving benefits. The research team applied these impacts to the average monthly benefit per person in Indiana, using U.S. Department of Agriculture data as presented by the Kaiser Family Foundation and available at [kff.org](http://kff.org). See Kaiser Family Foundation (2016).

<sup>20</sup> Administrative costs were estimated from Food and Nutrition Service (2017).

**TABLE 7**

**NET BENEFITS AND COSTS OF RECYCLEFORCE (IN 2016 DOLLARS)**

	<b>GOVERNMENT</b>	<b>VICTIM</b>	<b>PARTICIPANT</b>	<b>SOCIETY</b>
<b>Benefits</b>				
Criminal justice	3,529	686	0	4,215
Employment				
Earnings and fringe benefits <sup>a</sup>	0	0	5,804	5,804
Tax payments and credits <sup>b,c</sup>	856	0	-420	0
Value of output <sup>d</sup>	3,257	0	0	3,257
Total employment benefits	4,113	0	5,384	9,061
SNAP <sup>e</sup>				
SNAP payments	166	0	-166	0
Administrative costs	22	0	0	22
Child support payments <sup>f</sup>	59	0	-490	0
Total benefits	7,888	686	4,728	13,297
<b>Costs</b>				
RecycleForce program costs	-11,075	0	0	-11,075
Net present value (per person)	-3,187	686	4,728	2,222
Benefit-cost ratio	0.71			1.20

SOURCES: Marginal costs were estimated using cost information from county and state criminal justice agencies and published reports, as detailed in Appendix Table B.1. Employment data were based on quarterly wage data from the National Directory of New Hires. SNAP payments were estimated using impacts from the 12- and 30-month surveys and the average monthly benefit per person in Indiana from Kaiser Family Foundation (2016). Administrative costs were estimated from Food and Nutrition Service (2017).

NOTES: Rounding may cause slight discrepancies in calculating sums and differences.

<sup>a</sup>Employment earnings include up to five years of data for both ETJD subsidized jobs and all other jobs covered by unemployment insurance.

<sup>b</sup>State and federal taxes and credits were estimated using rules for the 2016 filing year.

<sup>c</sup>Tax payment benefits to society overall are zero (not equal to the sum of tax payment benefits to the government and the costs of payments to participants) because of the payments by employers, whose costs are not shown here.

<sup>d</sup>Value of output is measured by revenue from RecycleForce operations.

<sup>e</sup>SNAP = Supplemental Nutrition Assistance Program.

<sup>f</sup>Child support benefits to society overall are zero (not equal to the sum of the child support benefits to the government and the costs of payments to participants) because of the payments to custodial parents, whose benefits are not shown.

When considering only the government perspective, the program's net cost per person was \$3,187 and the benefit-cost ratio is 0.71. The government and taxpayers benefited most from the savings to the criminal justice system, followed by the value of the output of the jobs that program group members performed. The government also benefited from increased tax payments from participants, increased child support payments from participants to reimburse for public assistance paid to custodial parents, and savings due to reduced SNAP benefits. However, because the cost of the program was relatively high, the benefits did not outweigh the costs. As a result, the program was not cost effective from the government's perspective alone, but it did generate benefits to others in society through this investment.

The next two sections discuss certain assumptions that may affect the results of this analysis and limitations that may have caused the benefits of the program to society, as positive as they were, to be underestimated.

## SENSITIVITY ANALYSIS

Sensitivity analyses show how the results of a benefit-cost analysis change when certain underlying assumptions are altered and provide insight into how much influence certain assumptions have on the outcome of the analysis. For this report, sensitivity analyses focused on two main assumptions: the employment benefit decay rate and the discount rate. The main analysis was not sensitive to these assumptions. The benefit-cost ratio increased only slightly, from 1.20 to 1.21, using a 0 percent decay rate, rather than a 100 percent decay rate. When the analysis was conducted with a

discount rate of 5 percent rather than 2 percent, the benefit-cost ratio decreased to 1.18.

A third component that was important to test was the inclusion of optional fringe benefits, such as retirement contributions, health insurance, and life insurance. The main analysis assumed that only required benefits (unemployment insurance and workers' compensation) were provided to program participants. However, it is possible that some participants received optional fringe benefits as well. When optional fringe benefits were included in the analysis, the benefit-cost ratio to society increased to 1.28.

Details and results of the sensitivity analyses are presented in Appendix C in the technical supplement.

## LIMITATIONS

While this analysis sought to quantify as many benefits and costs as possible, it has some limitations, particularly regarding unquantified benefit categories. An important unquantified benefit is the value of the output of the program participants' subsidized jobs at RecycleForce. RecycleForce contributes to recycling efforts in Indianapolis, which represents a benefit to society through improvements in health, reduced environmental cleanup expenditures, and consumer savings through less expensive goods made from recycled materials.<sup>21</sup> Some of this benefit is captured in RecycleForce's revenue from pickup fees and sales of processed materials, which is shown as the value of output. There could be value to recycling beyond the revenue that the company accrues through its work if RecycleForce induces recycling of e-waste that would not have occurred in absence of the

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<sup>21</sup> Drayton (2007).

program.<sup>22</sup> However, the degree to which this occurs and data on the benefit that would have resulted could not be estimated for this analysis.

Also unquantified is the potential benefit to participants and their families from reduced recidivism, especially through participants' reduced time in prison or jail. This benefit can take a variety of forms, including increased self-esteem at making a successful transition from prison to employment or improved relationships with friends and family. Although the research team was unable to quantify them, it is probable that some of these benefits were realized.

Finally, this analysis does not take into consideration potential differences in supervision and work release fees that the program and control group members may have paid to the government. It is possible that, due to higher rates of employment and lower rates of recidivism, program group members paid more in fees than control group members. If this is the case, these fees may further increase the benefit to the government.

In addition to unquantified benefits, the analysis faced some data limitations. For example, the administrative data do not include arrests that did not lead to court cases. While these arrests use law enforcement resources, it is not known whether there was a difference in the rates of program group and control group members who were arrested but whose arrest did not proceed to court. Thus, it is unclear how this would affect the final benefit-cost ratio.

## COMPARISONS WITH OTHER PROGRAMS

Overall, this analysis suggests that RecycleForce's ETJD grant program generated benefits that exceeded the costs of providing the program by reducing recidivism and its cost burden on the criminal justice system and potential victims, and by increasing earnings for program group members. RecycleForce aimed to serve an especially high-risk group of individuals who were recently incarcerated, and it is promising that the benefit to society overall was positive. However, because the program was expensive to operate, the cost of the program outweighed the benefits when considering the government's perspective alone. At the same time, it is important to consider the potential unquantified benefits, described in the limitations section, that were not included in the overall benefit-cost ratio.

When considering these findings, it is helpful to put them in context with studies of other programs that provide similar services to a comparable group of participants. At \$11,057 per program group member, RecycleForce had relatively high program costs, and it is important to acknowledge the reason for these costs, especially compared with those of other programs. Two other studies, the Center for Employment Opportunities (CEO) evaluation and the Transitional Jobs Reentry Demonstration (TJRD), found lower program costs per person than those experienced by RecycleForce (\$4,000 in CEO and \$3,700 in TJRD, in 2016 dollars).<sup>23</sup> An evaluation of the Milwaukee Safe Streets Prisoner Release Initiative (PRI), which provided subsi-

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**22** Indiana requires video display device manufacturers to collect and recycle at least 60 percent of the weight of devices they sell and restricts discarding e-waste in landfills, which could influence whether consumers seek out other recycling options. See Wheeler (2013).

**23** Redcross, Millenky, Rudd, and Levshin (2012); Redcross et al. (2010).

dized employment opportunities and postrelease services as well as six months of prerelease services, estimated that the cost of that program was approximately \$5,800 per program group member (adjusted to 2016 dollars).<sup>24</sup> A key consideration is that RecycleForce was a social enterprise, and a large portion of the program costs covered program operations, which were probably higher due to the requirements of operating a business. CEO, the programs in TJRD, and PRI did not have costs associated with operating a social enterprise.

In addition, the RecycleForce ETJD program spent more on transitional job wages than CEO and the programs in TJRD, at \$4,597, compared with about \$1,100 for CEO and an average of about \$1,900 for TJRD. RecycleForce participants also spent longer in their transitional jobs, on average, than participants in CEO or TJRD did (14 weeks, compared with 9 and 11 weeks, respectively). As a result of providing a more intensive level of services, RecycleForce experienced higher costs.

While the TJRD study did not estimate the benefits from the program, the CEO study included an analysis similar to the RecycleForce analysis presented in this brief. The CEO analysis assumed the reduced admissions to prisons would result in savings due to reductions in prison operations as a result of decreased capacity needs (for example, savings from reduced administrative and other fixed costs). The RecycleForce analysis did not assume any reductions in prison capacity, because a program on the scale of RecycleForce would probably not lead to such large reductions.<sup>25</sup> It is likely that the benefits to the government and society would have been higher had this analysis assumed that prison capacity could be decreased

as a result of the program. While the benefit-cost ratio for CEO was higher than that for RecycleForce, for both society and the government, considering these findings alongside the differences in the program structure and services is critical to understanding the relationships between the two programs' costs and benefits.

## CONCLUSION

The overall benefits from RecycleForce — from reduced recidivism and increased employment — outweighed program costs by about \$2,200 per person. This is a conservative estimate, as there are potential benefits that could not be estimated. The estimate does not include the value to society from increased recycling that exceeds the revenue paid for the services and materials generated. Nor does it include the benefits that participants and their families gain, beyond increased employment, from avoiding stays in jail or prison.

This is one of just a few benefit-cost analyses of transitional jobs programs serving individuals who were recently released from prison. While RecycleForce was more expensive than some earlier programs, it was able to generate benefits for society at large that exceeded those higher costs, most clearly from the perspectives of participants in the program and victims of crime. The field may benefit from further explorations of these programs to assess what types of models and programs are most cost effective and in what settings.

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<sup>24</sup> Cook et al. (2015). Additional detail on program cost is not available.

<sup>25</sup> CEO extrapolated benefits to approximately 2,500 individuals, which is the number of individuals it serves in a year. The RecycleForce ETJD program served 500 individuals in the program over three years.

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