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Benefit-Cost Analysis of the Southwest Organizations Unifying Resources for Our Community and Employers (SOURCE)

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A Report to The Delta Strategy
c/o Grand Rapids Community College

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Executive Summary

The SOURCE is an innovative neighborhood collaborative which assists neighborhood businesses in hiring and retaining unemployed and underemployed residents living in the southwest section of Grand Rapids. In addition, the SOURCE provides training programs and life skills programs for the participating companies' existing workforce. The SOURCE has successfully harnessed the commitment of seven employers, Michigan's Family Independence Agency (FIA), Grand Rapids Community College, Goodwill Industries, the Hope Network, Kent County Coordinated Child Care, MSU-Extension and others to break down barriers hindering individuals from finding and keeping full-time employment.

Overall, the SOURCE provides a positive net benefit for participating companies. As a group, the seven companies, which actively participated in the program, paid $42,000 in annual fees and $4,000 in administrative fees for training. Overall, as a group the seven companies received a $97,509 in benefits, or a 112.0 percent return on their investment during the first 12 months of the program. However, not all of the participating companies received a net positive return. Of the seven participating companies, only three received a net benefit due to participating in the SOURCE during the first year.

In preparing this analysis we focused on three major areas of potential cost savings that the SOURCE could provide to its participating employers.

1. **Lower costs on shared services including training, education and health assistance programs.** The SOURCE provides training/education courses for employees that participating companies would have paid for if they were not offered by the SOURCE. In addition, the convenient location of the SOURCE and its outreach efforts enable more of their employees to take advantage of these programs. Finally, by working through the SOURCE, the participating companies received discounts on flu shots and hearing tests for their employees.

2. **Reduced employee turnover.** Participating companies' employee turnover rates were reduced due to the interventions by the SOURCE staff and the FIA case managers on-site at the SOURCE. Estimation of the cost savings associated with reducing turnover was the most difficult aspect of the analysis. Moreover, in several instances we found that reducing employee turnover does not always result in an immediate net positive impact.
3. **Potentially, lower costs in screening and hiring new employees.** The SOURCE could lower costs in hiring entry-level employees for participating companies that currently depend on temporary employment agencies for these services. For the two participating companies who use temporary employment agencies to place low-skilled production workers, the potential cost savings of using the SOURCE employment placement services instead ranged from $12,600 to $18,640 during its first year of operation.

Currently, the SOURCE faces three major challenges:

1. **It is committed to serving an economically disadvantaged population who face multiple barriers to employment which will lower its success rate.** The residential area, which is the focus of the SOURCE's outreach efforts, is one of the more economic distressed areas in Grand Rapids. In 2000, 34.5 percent of the residents lived in poverty, and although the year 2000 was at the height of the last business cycle, the area's residents faced a 13.1 percent unemployment rate, twice the city's overall rate of joblessness.
2. **Slow business conditions have dampened the demand for SOURCE services by many of the participating companies.** The SOURCE employee screening and job placement services are not being used because several of the participating firms are simply not hiring. When business conditions finally improve, it is very likely that participating companies will make better use of the SOURCE services and, in return, gain a better return on their investments.
3. **Due in part to slow business conditions and the newness of the SOURCE programs and services, we believe that several of the participating companies are reluctant to use the SOURCE to its fullest potential.** In particular, two of the participating companies continue to use temporary employment agencies to find and place entry-level workers instead of using the SOURCE services.

This analysis focused primarily on a quantitative evaluation of the SOURCE; however, at the same time we found positive, qualitative benefits as well, which should not be discounted. Participating firms spoke highly of the SOURCE being a welcomed one-stop center for information and its ability to provide access to government and nonprofit human resource services for their employees. In addition, the networking opportunities, that the SOURCE facilitated and encouraged, allowed participating firms to learn from each other and discuss common problems. Finally, the SOURCE gave the firms an opportunity to "give back" to the community in a productive and mutually beneficial way.

In our opinion, the first year performance of the SOURCE warrants both its continuation and expansion. We strongly believe the SOURCE and its services are currently underutilized. While the estimated benefits, in quantitative terms, of the programs were not shared by all participants during its first full year of operation, this was due in large part to sluggish economic conditions. The effectiveness of the SOURCE is highly dependent on local business conditions. As the economy picks up, we fully expect the net benefits of the program to only grow.

Acknowledgements

We want to sincerely thank the human resource staff at all of the participating companies. It was only due to their substantial efforts and remarkable patience that we were able to obtain the data needed to generate this report. We also want to thank Andrew Brower, Executive Director of the SOURCE, and his staff for their assistance as well.

Introduction

This report provides a benefit-cost analysis of the SOURCE's effectiveness in lowering labor costs, reducing employee turnover, and improving labor productivity for participating employers. The SOURCE is an innovative neighborhood collaborative which assists neighborhood businesses in hiring unemployed and underemployed residents living in the southwest section of Grand Rapids. In addition, the SOURCE provides training programs and life skills programs for the participating companies' existing workforce. The goal of the SOURCE is to break down barriers hindering individuals from finding and keeping full-time employment. In striving to reach this goal, the SOURCE has successfully harnessed the commitment of seven employers, the Michigan's Family Independence Agency, Grand Rapids Community College, Goodwill Industries, the Hope Network, Kent County Coordinated Child Care, MSU-Extension and others. In short, the SOURCE provides support and problem solving solutions for existing employees as well as individuals seeking employment in the participating companies. Conjointly, it assists participating businesses by reducing turnover costs and improving productivity.

The SOURCE started on March 1, 2003 and during its first year in operation, nearly 1,200 individuals received some type of service from training to assessment and job placement to assistance in surmounting job threatening barriers.

Table 1 - Characteristics of Participating Companies

Firms	Number of Employees	Wage Rate for Entry-Level Production Worker	Product
Company A	180	$7.25	Butter
Company B	65	$8.00	Applicators of Spec. Coatings
Company C	140-150	$8.50	Custom Hardwood Home & Office Furniture
Company D	175	$9.50	Decorative & Furniture hardware
Company E	300	$7.60	Distributes crafts & sewing notions
Company F	750	$9.00	Flanges, automobile parts, stampings
Company G	525	$7.20	Electrodeposits coating services
Total	**Approx. 2,140**		

Source: 2003 Harris Michigan Industrial and Services Directories and the SOURCE.

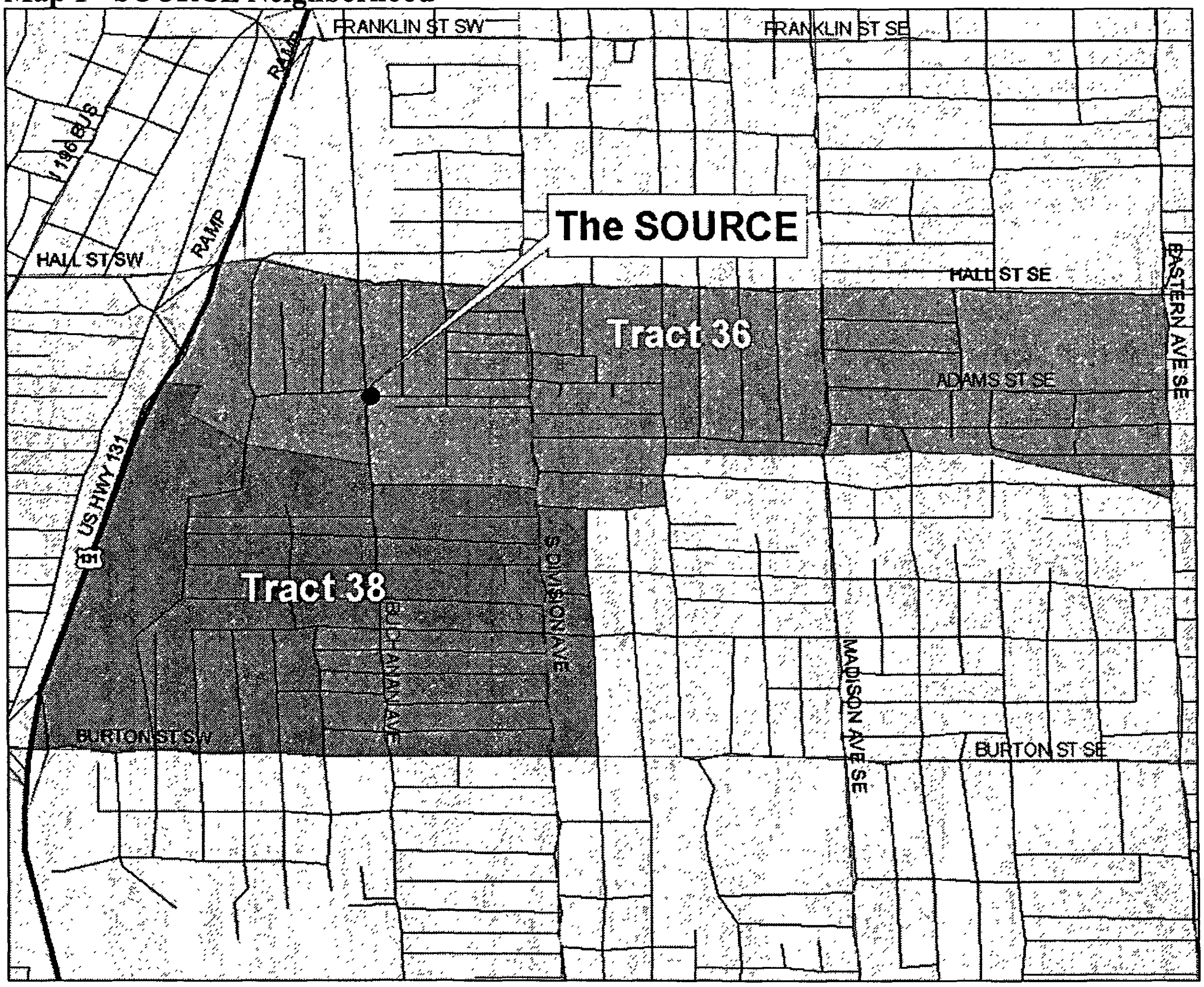
Economic Setting of the SOURCE

The SOURCE is working in one of the more economically distressed neighborhoods in the City of Grand Rapids. In this analysis we used U.S. Census Bureau's census tracts 36 and 38 to define the neighborhood area of the SOURCE as shown on Map 1.[1] As shown in Table 2, more than one-third of the residents living in close proximity of the SOURCE struggled below the poverty level in 2000. At the time of the census, the local labor market was very tight – the county's unemployment rate was 4.4 percent, and employers had a difficult time in hiring suitable workers. Still, residents in the SOURCE neighborhood faced a 13.1 percent unemployment rate.

[1] Census Tracts 36 and 38 do not cover all of the neighborhood area served by the SOURCE, unfortunately. In fact, one of the participating companies is located outside of the two tracts. However, the two tracts provide the best available census-tract determined boundaries of the service area.

Moreover, nearly 47 percent of the neighborhood's residents older than 16 years of age were not in the labor force, compared to just below 35 percent in the city and 30 percent in Kent County.

Map 1 - SOURCE Neighborhood



A major barrier blocking the neighborhood's residents from finding good-paying jobs is their low level of formal education. In 2000, more than 56 percent of the neighborhood residents, 25 years or older, did not complete high school compared to only 22 percent citywide. Moreover, only 6.5 percent of the neighborhood residents earned an Associates Degree or higher. For individuals who stopped short in their formal education, work experience matters significantly in their ability to advance. It is exactly this work experience that the SOURCE hopes to provide for its participants.

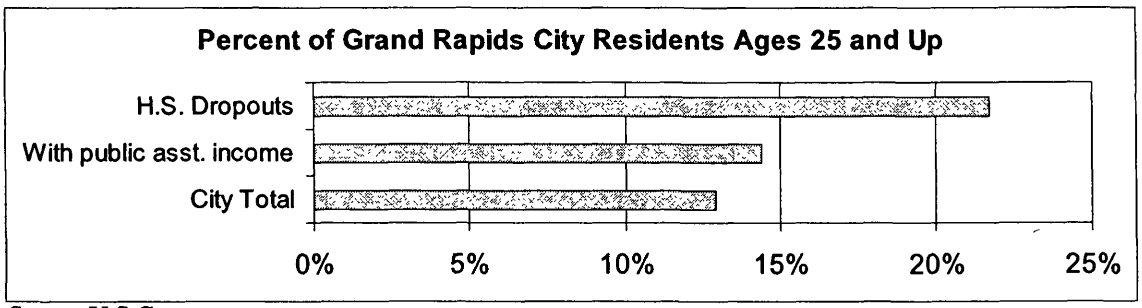
The SOURCE employer participants offer employment opportunities for primarily production occupations, which is appropriate in meeting the needs of target population. As shown on Chart 1, manufacturing jobs are still very important to individuals with low levels of education, or who are attempting to leave public assistance; 22 percent of high school dropouts over age 25 in Grand Rapids are involved in production occupations, as are 14.4 percent of individuals receiving public assistance. This is a much higher level of production occupations than the population at large; city-wide, only 13 percent of individuals age 25 and older have production occupations.

Table 2 – Economic Characteristics of Individuals Living in the SOURCE's Neighborhood

Characteristics	Combined Census Tracts 36 & 38	City of Grand Rapids	Kent County
Below Poverty Line	34.5%	11.9%	8.9%
Unemployment	13.1%	6.3%	4.4%
Labor Force Participation	53.1%	65.8%	70.5%
Over 25 and no H.S. Diploma	56.3%	22.1%	15.3%
Over 25, Associates Degree or highe|	6.5%	30.8%	33.5%
Non-white population	87.5%	37.5%	19.7%

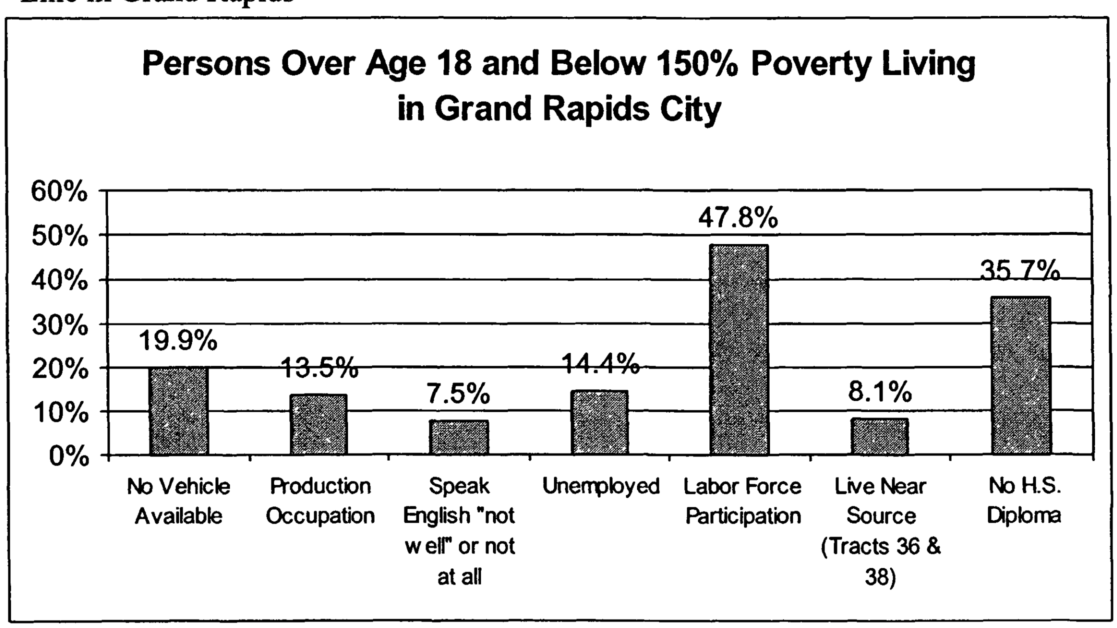
Source: 2000 U.S. Census.

Chart 1 - Importance of Production Occupations for High School Drop Outs and Persons on Public Assistance



Source U.S Census

Chart 2 – Economic Characteristics of People Living Below 150 Percent of the Poverty Line in Grand Rapids



Source U.S. Census

Finally, in its effort to become an avenue for low-income individuals to improve themselves, the SOURCE, with its neighborhood and education/training approach, appears to be focusing on the right issues. As shown on Chart 2, nearly 20 percent of individuals living below 150 percent of the federal poverty level live in households that do not have access to a car, indicating the importance of neighborhood-based employment opportunities. Furthermore, only 47.8 percent are active labor force participants and nearly 36 percent are without a high school diploma, highlighting the fact that problems related to education, employment, and transportation are often interrelated.

The employment barriers facing low-income individuals can make it difficult for them to both find work and retain employment. Table 3 compares the percent of dismissed workers through the Family Independence Agency (FIA) who leave their job involuntarily to those receiving public assistance. Nearly 58 percent of dismissed workers on public assistance leave involuntarily due to attendance, performance or personal problems such as lack of childcare, compared to 45 percent of non-FIA dismissals.

Table 3 - Dismissals

Percent of Employee Dismissals That are Voluntary or Involuntary at Participating Firms 2003-2004		
	Voluntary: Moving, Taking Another Job, Health	Involuntary: Attendance, Performance Childcare*
FIA Client	42.3%	57.7%
Non-FIA	54.7%	45.3%

*Excludes layoffs

Source: FIA and Companies records

Benefit-Cost Analysis of the SOURCE

Again, the purpose of this analysis is to estimate the economic net benefit for the SOURCE's participating companies during its first year of operation, March 2003 to March 2004. A technical appendix provides a complete description of the methodology used in the study.

At the start, we are worried that in many respects this benefit-cost analysis was conducted too soon after the SOURCE opened its doors. Current economic conditions and employers' uncertainty about the program contributed to the program's underutilization, cutting short its potential net benefits.

In measuring the net benefits of the program, we compared the cost of the program to participating firms and the resulting benefits. The employer's cost of the program is simply the $6,000 annual membership fee.[2]

Overall, the benefit of participating in the SOURCE can be broken down into three major areas:

- Lower costs on shared services including training/education programs.
- Savings associated with lower turnover rates due to the SOURCE interventions.
- Potential cost savings that the SOURCE could provide if it were to be used to screen and select entry-level workers.

[2] In addition to the annual membership fee, companies also contribute a training administrative fee which is accounted for in estimation of the net benefit of the SOURCE's education and training programs (See the technical appendix below).

Lower Costs on Shared Services.

In total, the participating companies received more than $54,000 in benefits due to the SOURCE provided education/training programs and shared services, as shown in Table 4.

Table 4 Benefits of the SOURCE"S Education/Training Programs and Shared Services

	Training*	Administrative Fee for Training	Hearing Tests & Flu Shots	Employee Assistance Plan	Total
Company A	$2,871	-$500	$510	$0	$2,881
Company B	$10,304	-$1,000	$100	$0	$9,404
Company C	$3,649	-$1,000	$565	$0	$3,214
Company D	$0	-$250	$1,465	$2,475	$3,690
Company E	$581	-$250	$0	$0	$331
Company F	$11,944	$0	$0	$0	$11,944
Company G	$21,125	-$1,000	$695	$1,810	$22,630
Total	$50,474	-$4,000	$3,335	$4,285	$54,094
*Based on company's tuition reimbursement policies.					

The largest benefits accruing to the participating companies were the cost savings they received by having their employees attend classes at the SOURCE. To estimate these savings, we examined the tuition reimbursement policies of each of the companies to determine which training programs taken by their employees at the SOURCE would have been covered, at least partially, by the company if it had been taken somewhere else. In other words, the training benefits shown in Table 4 are equal to the tuition reimbursement that the companies saved by having their employees taking classes at the SOURCE. Although the companies saved on tuition reimbursement costs, they were required to pay administrative fees for the training which is also accounted for in the table.[3]

Through the SOURCE, participating firms were also able to obtain lower fees for providing hearing tests and flu shots for their employees. As shown in Table 4, these savings totaled to $3,335 in the first year. In addition, two of the participating companies received cost savings for their Employee Assistance Plans (EAP) which tallied to an additional $4,285 in cost savings.

Cost Savings Due to Lower Turnover Rates.

The cost savings to a firm generated by reducing its rate of turnover can be broken down into following four components

- **The cost savings associated with not hiring a replacement worker.** These costs include both out-of-pocket costs for advertising for the position and conducting drug testing and a physical, if required, and internal costs. The internal costs are the portion of the company's human resource staffing and expenditures that are directly associated with dealing with turnover.

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[3] It is very possible that we overestimated the training/education benefits of the SOURCE to the company. While we only included the savings associated with employees attending classes that qualified for tuition reimbursement, it is likely that more employees took advantage of these course offerings because they were conveniently located at the SOURCE. The pickup rate of the same courses if offered only at the main campus of the Grand Rapid Community College would have likely been less.

- **The cost savings of not losing production during the hiring transition.** During the time it takes to replace a worker, the company loses the value of production that would have been generated by the missing employee.[4]
- **The cost savings of foregoing the loss of productivity suffered as the new hire learns the tasks required of the position.** For positions with a long learning curve, these savings can be very significant.
- **The costs savings associated with not having to take an experienced worker off his/her assignment to train the new hire.** Often the trainer is one of the company's most experienced and productive workers.[5]

In estimating the cost savings associated with each of these components, we made the standard economic assumption that the full hourly compensation package (wages and benefits) of a permanent worker, fully trained to do the tasks associated with his/her job, is equal to the marginal revenue generated during that hour of work. This marginal revenue includes normal profits. If the worker's hourly compensation was greater than the marginal revenue generated, then he/she would be dismissed by the company. If the worker's generated marginal revenue is greater than his/her compensation the company, the company would either hire another worker or pay the worker more to insure that he/she stays with the company. This assumption only holds if the company is in a highly competitive market, which is true for most all of the companies participating in the SOURCE.

There is a benefit associated with turnover which is often not considered in measuring the cost of turnover, however. For many entry-level positions, the training time it takes for the new hire to be as efficient as a permanent employee is less than his/her probationary period during which his/her wages and benefit package can be significantly below that of the permanent worker. For example, assume that 1) it takes a new hire one month to completely learn the tasks of his/her job and 2) his/her probationary period, when he/she receives few if any benefits and is paid less than a permanent hire, is three months. This means that the company benefits from having a fully-trained employee working for two months for low wages and benefits.

Table 5 presents the benefits, and in some instances the costs, associated with reducing one turnover for each of the participating SOURCE firms. Company F received the greatest benefit from reducing turnovers, more than $4,000 for each turnover avoided. This is because of the significant loss of production days and productivity it suffers when a turnover occurs. Company B saves just over $2,000 for every turnover avoided, while Companies C and G both save nearly $1,000 each. However, Companies A, D, and E actually receive a benefit from each turnover. For these companies, the wage savings, resulting from having a fully-trained new hire working for a lower compensation package than a permanent worker, are more than enough to offset the resulting costs.

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[4] While it is true that existing workers can "pitch in" and handle the extra work load as the company finds a replacement worker, this cannot be a permanent solution for if it were, the company would not hire the new person.
[5] This is above the training conducted by the human resource department, such as safety training and informing the new hire about the firm's employment policies. These costs are included in the internal company costs of the turnover.

Table 5 Benefit of Avoiding One turnover per Company:

Cost of one turnover per company:	Total Cost	Human Resource Costs	Training Costs	Loss of Days	Loss in productivity	Wage Savings
Company A	-$182.87	$39.34	$229.50	$372.00	$252.96	-$1,076.67
Company B	$2,082.32	$195.70	$650.18	$80.24	$601.80	$554.40
Company C	$985.27	$1,025.00	$192.50	$980.00	$308.70	-$1,520.93
Company D	-$1,056.26	$130.05	$18.85	$799.82	$428.48	-$2,433.45
Company E	-$21.47	$48.87	$54.06	$214.44	$203.72	-$542.56
Company F	$4,266.78	$106.61	$782.40	$3,225.06	$1,908.16	-$1,755.46
Company G	$931.51	$371.21	$0.00	$420.00	$1,459.92	-$1,319.62
Average	$1,000.76	$273.83	$275.36	$870.22	$737.68	-$1,156.33

On average, a turnover costs a firm approximately $1,000. It is interesting to note that if the offsetting wage savings associated with the turnover is ignored, the per turnover cost savings is more than $2,100 which is very close to the standard estimate. This suggests that most standard estimates of turnover do not include this factor.

One of the most difficult estimates to derive in this analysis was the number of turnovers avoided at each company due to the SOURCE efforts. The original design of the study called for a "before and after the SOURCE" comparison of the participating companies' turnover rates. However, several of the companies' payroll records were insufficient to make this determination. In addition, unique events occurred that made a year-over-year comparison impossible.[6]

The alternative approach we took was to estimate what level of intervention by the SOURCE and the Family Independence Agency (FIA) could be associated with an avoided turnover. From March 2003 to April 2004, the FIA case workers housed at the SOURCE intervened 181 times in providing employees at the seven companies with needed work-related assistance. The total value of these interventions, which included heating assistance, assistance in purchasing a used car, and child care assistance, totaled $62,280 during this time period. The value of the interventions ranged from a very small 0.2 percent to a substantial 121.5 percent of the monthly wage earned by an entry-level production worker at each of the participating companies.

It is highly unlikely that all of these interventions were the sole or primary reason for the assisted individual to keep his/her job. In our calculation of the impact (positive and negative) of reducing turnover, we assumed that an intervention worth 25 percent or more of a person's monthly wage was large enough to be considered a job-saving event.[7] Using this criterion, we estimate that there were 85 job-saving interventions during the 12-month period ending in April 2004, as shown on Table 6. These estimated job-saving interventions are then multiplied by the cost savings (negative and positive) of each firm to derive the overall cost savings associated with the SOURCE efforts in reducing turnover.

[6] One company had to release a large number of workers the year before the SOURCE because of a detected documentation problem.

[7] Unfortunately, this is an arbitrary assumption. As one reviewer commented, something as simple as bus fare could be a job saving intervention. At the same time, an individual could be facing more than one barrier to employment, so that even if FIA intervened and resolved one expensive barrier, other barriers could still force the person to leave his/her position.

Table 6 Estimated Number of Job-Saving Interventions

	Jobs Saved
Company A	11
Company B	1
Company C	1
Company D	5
Company E	26
Company F	3
Company G	38
Total	**85**

Non-quantifiable Benefits of the SOURCE for Participating Companies

Our interviews with human resource directors and staff revealed many benefits that the participating companies felt they received by participating in the SOURCE that cannot be measured in dollar and cents. However, they are still important. First, the SOURCE provides a welcomed "one-stop shop" for employers to find local and state-funded services for their employees. The SOURCE staff is very knowledgeable of available local resources and has connections within community agencies which enable it to access the available resources for the participating firms.

According to participating companies, the SOURCES's training programs not only improved work skills, but also added to a sense of "camaraderie" among employees and enhanced morale. SOURCE assistance is appreciated in good times as well as bad, as one company cited that the SOURCE was helpful in resume preparation as well as connecting dislocated workers with the local Michigan Works! office.

The assistance from the FIA caseworkers housed at the SOURCE was cited, more than once, as an invaluable resource. Employers saw FIA assistance in paying utility bills and rent, purchasing and repairing cars, and providing family counseling services as key actions that helped to increase employee retention. Employers found their FIA and SOURCE contacts readily accessible, and follow-up was prompt and consistent.

Participating firms also spoke highly of the Human Resources Roundtable which allows the companies to network and discuss problems. Several networking results from this activity include the sharing of human resources policies, developing trust as the work progression model is implemented, e-mailing problem solving with other companies, sharing ideas about implementing HIPPA, securing training dollars and sharing training facilities. A comment heard several times was that the SOURCE participation has broadened employers' perceptions of inner city issues and low-income living. Finally, several employers cited their involvement in the SOURCE as a way to "give back" to the community.

As for suggested improvements to the SOURCE, employers recommended that the "one-stop shop" function should be further developed and expanded. This includes further leveraging of resources for employee benefits, food and commodities distribution, computer training, nutritional and financial training, principles of manufacturing and leadership training, wellness programs, ESL training, and health assessments to increase access to a primary care physician. Several also suggested that the SOURCE should design and implement an emergency child care system or center.

Total Benefit-Cost Impact Estimate of the SOURCE

Overall, the SOURCE generated a net benefit for its participating firms of $55,509 during its first 12-months of operation. The SOURCE's overall benefit/cost ratio was 2.12. In other words, as a group, the participants received a 112 percent return for their investment. Individually, Company G enjoyed the strongest returns on their investment in the program followed, by Companies B and F. However, as shown in Table 7, not all of the participating firms shared in the gains. In particular, the cost of the program was greater than its return for Companies A, C, D, and E. Finally, B and F are in the position to gain even stronger benefits from the SOURCE if they would replace their existing temporary employment providers with the SOURCE and utilize its screening and job placement services.

Table 7 Total Benefit-Cost Analysis Findings

	Benefits			Costs	Net	
	Shared Services	Reduced Turnover	Potential Benefits		excludes potential	Benefit/Cost Ratio*
Company A	$2,881	-$2,012		-$6,000	-$5,130	0.13
Company B	$9,404	$2,082	$12,603	-$6,000	$5,486	1.64
Company C	$3,214	$985		-$6,000	-$1,801	0.60
Company D	$3,690	-$5,281		-$6,000	-$7,591	-0.25
Company E	$331	-$558		-$6,000	-$6,227	-0.04
Company F	$11,944	$12,800	$18,638	-$6,000	$18,745	4.12
Company G	$22,630	$35,397		-$6,000	$52,027	8.29
Total	$54,094	$43,414		-$42,000	$55,509	2.12

* Includes Administrative Fee for Training

Conclusions and Recommendations

Given that the SOURCE has been in operation for less than 18 months, the findings of this benefit-cost analysis are surprisingly strong. Although the participants are underutilizing the resources and services available through the SOURCE, we still found that it has yielded a net benefit, overall. Unfortuately, not all of the participating companies experienced a positive return for their investment during the program's first 12 months in operation. Still, we believe that as the economy improves and as the participating companies become more certain about the quality of its programs, the value of the SOURCE will only improve.

This analysis focused primarily on a quantitative evaluation of the SOURCE; however, the positive qualitative findings cannot be discounted. Participating firms spoke highly of the SOURCE being a welcome one-stop center for government and nonprofit human resource services. In addition, the networking opportunities it allowed and encouraged were well appreciated. Finally, the SOURCE gave the firms an opportunity to "give back" to the community in a productive and mutually beneficial way.

As consideration is given to expanding the number of firms participating in the SOURCE, the key question to answer is: What are the characteristics of a company which make it more likely to gain a net benefit from participating in the SOURCE? First, all companies would benefit from the SOURCE's ability to recruit and screen new entry-level workers. In addition, when the SOURCE, through its retention efforts, is able to keep a productive worker on the job, this benefits everyone.

Also, companies which suffer significant costs due to high rates of employee turnover should capture substantial cost savings by participating in the SOURCE. In particular, the types of companies that would likely gain from participating in the SOURCE are those that:

1. Require a long training period for the entry-level workers and/or where it takes a long time for the new workers to become able to do their tasks.
2. Use their more experienced and productive workers as trainers.
3. Take more than two weeks in replacing a dismissed worker with a new hire.
4. Provide their new workers with a benefit package within one month of their hiring date.

In closing, the effectiveness of the SOURCE is highly influenced by the business cycle. During the current slow economy, the SOURCE's resources are being underutilized due in part to a lack of demand for workers. It would be very unfortunate if support for the program suffered due to current conditions, because as the economy improves and the labor market tightens, the need for the SOURCE's services will only grow.

Finally, the SOURCE staff should be strongly commended for the constant drive to monitor their achievements. In order for the staff to do a better job in the future, participating firms must be encouraged to keep better statistics on the dynamic changes of their workforce—statistics that will be key to evaluating the long-term success of this ambitious project.

Technical Appendix

This Appendix provides a detailed explanation of the methodology used in estimating the employers' benefits of participating in SOURCE. As mentioned in the text, the benefit of participating in the SOURCE can be broken down into three major areas:

1. Lower costs on shared services including training/education programs available through the SOURCE.
2. Savings associated with lower turnover rates due to interventions made possible only through the SOURCE.
3. Potential cost savings the SOURCE could provide if it were to be used to screen and select entry-level workers.

In regards to our cost savings estimates associated with the SOURCE's shared services and training/education programs, we obtained data on the administrative fees for training, net savings from hearing tests and flu shots, and net savings on the Employment Assistance Plan from the SOURCE.

We estimate the cost savings associated with SOURCE training/education offerings by taking the following steps:

1. Through the SOURCE, we obtained budgetary information from the Grand Rapids Community College which showed the fee per student for the courses offered at the SOURCE. We assumed that the same fee structure would hold if the course was offered elsewhere in the county by the college. It is important to note that the costs of the courses offered are not based on a credit hour basis, as are the college's academic courses.
2. We surveyed the participating SOURCE employers regarding their policies toward tuition reimbursement and identified which courses offered at the SOURCE were eligible for reimbursement. Some of the companies' reimbursement payouts depend upon the grade the student received. In these cases, we assumed that the average student would have earned a "B."
3. From the SOURCE, we were able to track the classes taken by employees from each of the participating companies.
4. The cost savings calculated was the value of the tuition reimbursement that the companies would have paid if the course had not been available for free through the SOURCE and the same number of employees had participated in the class.

Unfortunately, this methodology may overestimate the value of the SOURCE's training/ education programs. It is likely that many of the employees who took advantage of the SOURCE's training/education programs would not have done so if they were only offered elsewhere, or if the SOURCE had not advertised the opportunities. If this is the case, then fewer employees would have requested tuition assistance.

The most challenging aspect of this evaluation study was the estimation of the cost savings from reducing employee turnover rates that could be attributed to the SOURCE intervention. The following is a step-by-step description of the methodology used to calculate this cost savings.

Table A1 Benefits of the SOURCE's Education/Training Programs and Shared Services

	Training*	Administrative Fee for Training	Hearing Tests & Flu Shots	Employee Assistance Plan	Total
Company A	$2,871	-$500	$510	$0	$2,881
Company B	$10,304	-$1,000	$100	$0	$9,404
Company C	$3,649	-$1,000	$565	$0	$3,214
Company D	$0	-$250	$1,465	$2,475	$3,690
Company E	$581	-$250	$0	$0	$331
Company F	$11,944	$0	$0	$0	$11,944
Company G	$21,125	-$1,000	$695	$1,810	$22,630
Total	$50,474	-$4,000	$3,335	$4,285	$54,094

*Based on company's tuition reimbursement policies.

As stated in the report, the cost savings associated with the reduction of a firm's labor turnover rate has four components:

- **The cost savings associated with not hiring a replacement worker.** These costs include both out-of-pocket costs—advertising for the position, conducting drug testing, and performing a physical, if required—and internal costs. Internal costs are the portion of the company's human resource staffing and expenditures that are directly associated with dealing with labor turnover.
- **The cost savings of not losing production during the hiring transition.** During the time it takes to replace a worker, the company loses the value of production that would have been generated by the missing employee.
- **The cost savings of foregoing the loss of productivity suffered as the new hire learns the tasks required of the position.** For positions with a long learning curve, these savings can be very significant.
- **The costs savings associated with not having to take an experienced worker off his/her assignment to train the new hire.** Often the trainer is one of the company's most experienced and productive workers

Our estimates of the cost savings associated with the avoidance of hiring a replacement worker were based on interviews with the participating companies. During our interviews, we requested estimates of all costs incurred when dismissing a current employee—voluntarily or non-voluntarily—and hiring a new worker. Regarding advertising costs, in some instances, we divided an annual cost by the number of employees hired during the year to obtain a per hire cost estimate. To estimate the internal costs associated with turnover, we asked each company to estimate the amount of their human resource budget that is spent on addressing employee turnover. Company G estimated that it spends $75,000 per year on dealing with turnovers. In contrast, the other companies spent approximately $5,200 per year. Company E was unable to provide an estimate for the internal cost of turnovers, so we assumed it would be the average for the other firms (excluding Company G).

The finally step in estimating the internal savings associated with the reduction of turnover was to divide the annual human resource internal costs associated with turnovers by the number of dismissals excluding layoffs.[8]

[8] Dismissals include both voluntary e.g., quit and moves, and involuntary e.g., performance and attendance problems. We excluded all dismissals due to layoffs.

Table A-2 Estimated Fixed Cost Associated With a Turnover (the Dismissal and Hiring of a Worker

Fixed Costs	Human Resource's expenditures	Number of Dismissals 2003-04	internal HR cost of dismissals.	Out-of-pocket expenses per hire	Fixed Cost per Turnover
Company A	$4,800.00	122	$39.34	$0.00	$39.34
Company B	$5,600.00	33	$169.70	$26.00	$195.70
Company C	$5,000.00	8	$625.00	$400.00	$1,025.00
Company D	$6,000.00	109	$55.05	$75.00	$130.05
Company E	$39,750.00	106	$375.00	$0.00	$375.00
Company F	$4,500.00	90	$50.00	$56.61	$106.61
Company G	$75,000.00	220	$340.91	$30.30	$371.21

Company E is estimated on the total sample excluding Spectrum Industries

The fixed cost per turnover varied greatly among the participating firms. The fixed cost per turnover for Company A was under $40.00, while it was over $1,000 for Company C.

The next step was to estimate the value of production lost at each company during the time it took to replace a dismissed worker. As shown in table A-3, the time required to replace a dismissed worker ranged from one day for Company B to as many as 24 days for Company F. The one day turnaround at Company B is due to its use of a temporary employment service agency.

A-3 Loss in Production Due Finding a New Hire

Loss of Days in Production	**Time Needed to Replace Worker (Days)**	**Permanent workers' full compensation**	**Total Cost**
Company A	5	$9.30	$372.00
Company B	1	$10.03	$80.24
Company C	10	$12.25	$980.00
Company D	7	$14.28	$799.82
Company E	3	$8.93	$214.44
Company F	24	$16.80	$3,225.06
Company G	5	$10.50	$420.00

In estimating the value of lost production, we used the standard economic assumption that the hourly compensation package (wages and benefits) of the average fully-trained worker equals the worker's hourly contribution to the company's revenue (including profits). This condition holds if the company is competing in a highly competitive market, which we believe is true for all of the SOURCE participants. The cost in lost production per turnover is the highest for Company F at $3,225 and the lowest for Company B at $80.24.

This step in our methodology likely overestimates the loss in production because in the short-run it is likely that existing workers can "fill-in" for the missing worker. If this occurs, then the loss in production would be reduced. Of course, this is only temporary.

The next step in the estimation of the cost of turnovers is to estimate the loss of productivity as the new hire learns the task requirements of the job. We asked each of the participating firms to estimate the amount of time it takes for a new entry-level worker to become efficient at his/her job. As shown on Table A-4, after 5 days on the job, a new hire at Company E is as productive as a permanent worker, while at Company F, the new worker contributes nothing to the company's revenue during the first work week. After the second week (10 days), new hires at Company A, C, and D are fully trained and are as productive as regular workers carrying out the same tasks. At Company B, the new hire is producing only 70 percent of a regular worker, and at Company F, the new hire is only producing one-third of what a fully-trained worker generates.

The value of the productivity loss associated with a single turnover is derived by summing up the daily difference between the total compensation package of a fully-trained worker and the value of the production generated by a new hire. For example, assume that a fully-trained worker earns a total compensation package of \$15.00 per hour. Also assume that a new hire during his/her first day can only produce 10 percent of what a fully-trained worker can generate. Then the estimated value of the loss of productivity during the new hire's first day is calculated as

$$\underbrace{(\$15.00/\text{hour x 8 hours})}_{\text{Revenue produced by a fully-trained worker}} - \underbrace{\$15.00/\text{hour x (0.10\% of 8 hours)}}_{\text{Revenue generated by a new hire}} = \underbrace{\$108.00}_{\text{Value of lost productivity during the new hire's first day}}$$

This is then summed with the loss in productivity for all the following days until the new hire is as proficient as a fully-trained worker.

This estimation methodology is not without its problems. First, as nearly all of the human resource directors told us, it is very difficult to estimate the average learning curve for all entry-level positions since it varies greatly between individuals. Second, this methodology assumes that the new hire is replacing a fully-trained worker. If instead, the new hire is replacing a worker who quits before he/she is fully training, then the cost in lost productivity to the firm will be greater. For instance, if it takes three weeks to become fully-trained and a person is hired to replace a worker who only worked for two weeks, then the company must bear the cost of having the position filled for five weeks by two partially-trained workers.

The final component making up the cost of labor turnover is the cost in terms of foregone output of the "on the floor" trainer. In some companies, the new hire is trained on the floor by one of the company's better skilled production workers. The cost of this training is the value of production that is lost because the trainer has been removed from his/her post. Again, it is assumed that the hourly value of output generated by the trainer when he/she is at their post equals his/her total hourly compensation (wages and benefits). From each of the firms, we obtained 1) the average time it takes to train a new hire and 2) the average total hourly compensation of trainers. So, for example, assume that a trainer who earns a total hourly compensation of \$25.00 per hour, spends six hours teaching a new hire, then the company's training costs for this single day is

$$\$25.00/\text{hour x 6 hours} = \$150.00$$

Table A-4 Cost of Loss in Productivity

Percent of Output of a Fully-Trained Worker Achieved by a New Hire After Each Day of Work

Days of work	Company A	Company B	Company C	Company D	Company E	Company F	Company G
1	0	10	5	10	5	0	5
2	20	20	10	30	10	0	10
3	40	30	25	40	25	0	20
4	60	40	75	50	75	0	30
5	80	50	85	60	100	0	45
6	84	53	90	70	100	6	50
7	88	57	95	80	100	12	51
8	92	63	100	90	100	18	52
9	96	67	100	95	100	24	53
10	100	70	100	100	100	33	54
11	100	72	100	100	100	36	55
12	100	74	100	100	100	39	56
13	100	76	100	100	100	42	57
14	100	78	100	100	100	45	58
15	100	80	100	100	100	50	59
16	100	82	100	100	100	55	60
17	100	84	100	100	100	60	61
18	100	86	100	100	100	65	62
19	100	88	100	100	100	70	63
20	100	90	100	100	100	75	64
21	100	92	100	100	100	80	65
22	100	94	100	100	100	85	66
23	100	96	100	100	100	90	67
24	100	98	100	100	100	95	68
25	100	100	100	100	100	100	69
26	100	100	100	100	100	100	70
27	100	100	100	100	100	100	71
28	100	100	100	100	100	100	72
29	100	100	100	100	100	100	73
30	100	100	100	100	100	100	75
31	100	100	100	100	100	100	76
32	100	100	100	100	100	100	76
33	100	100	100	100	100	100	77
34	100	100	100	100	100	100	77
35	100	100	100	100	100	100	78
36	100	100	100	100	100	100	79
37	100	100	100	100	100	100	80
38	100	100	100	100	100	100	80
39	100	100	100	100	100	100	81
40	100	100	100	100	100	100	82
41	100	100	100	100	100	100	83
42	100	100	100	100	100	100	83
43	100	100	100	100	100	100	84
44	100	100	100	100	100	100	85
45	100	100	100	100	100	100	85
46	100	100	100	100	100	100	86
47	100	100	100	100	100	100	87
48	100	100	100	100	100	100	88
49	100	100	100	100	100	100	89
50	100	100	100	100	100	100	90
51	100	100	100	100	100	100	91
52	100	100	100	100	100	100	92
53	100	100	100	100	100	100	93
54	100	100	100	100	100	100	94
55	100	100	100	100	100	100	95
56	100	100	100	100	100	100	96
57	100	100	100	100	100	100	97
58	100	100	100	100	100	100	98
59	100	100	100	100	100	100	99
60	100	100	100	100	100	100	100

Table A-5 shows the daily cost borne by each of the participating firms associated with training a new hire. For example, the total training cost borne by Company A is $229.50 spread over the new hire's first five days on the job. At Company B, training is fairly intense during the first two weeks; the trainer then leaves the new hire pretty much alone for the following two weeks and then tests the new hire during the fifth week.

Table A-5 Cost of Training

Daily Cost of a Training - In Terms of Foregone Value of the Trainer's Production Output							
Days	**Company A**	**Company B**	**Company C**	**Company D**	**Company E**	**Company F**	**Company G**
1	$66.30	$68.44	$38.50	$18.85	$54.06	$782.40	$0.00
2	$81.60	$68.44	$38.50	$0.00	$0.00	$0.00	$0.00
3	$40.80	$68.44	$38.50	$0.00	$0.00	$0.00	$0.00
4	$20.40	$68.44	$38.50	$0.00	$0.00	$0.00	$0.00
5	$20.40	$68.44	$38.50	$0.00	$0.00	$0.00	$0.00
6	$0.00	$27.38	$0.00	$0.00	$0.00	$0.00	$0.00
7	$0.00	$27.38	$0.00	$0.00	$0.00	$0.00	$0.00
8	$0.00	$27.38	$0.00	$0.00	$0.00	$0.00	$0.00
9	$0.00	$27.38	$0.00	$0.00	$0.00	$0.00	$0.00
10	$0.00	$27.38	$0.00	$0.00	$0.00	$0.00	$0.00
11	$0.00	$6.84	$0.00	$0.00	$0.00	$0.00	$0.00
12	$0.00	$6.84	$0.00	$0.00	$0.00	$0.00	$0.00
13	$0.00	$6.84	$0.00	$0.00	$0.00	$0.00	$0.00
14	$0.00	$6.84	$0.00	$0.00	$0.00	$0.00	$0.00
15	$0.00	$6.84	$0.00	$0.00	$0.00	$0.00	$0.00
16	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
17	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
18	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
19	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
20	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
21	$0.00	$27.38	$0.00	$0.00	$0.00	$0.00	$0.00
22	$0.00	$27.38	$0.00	$0.00	$0.00	$0.00	$0.00
23	$0.00	$27.38	$0.00	$0.00	$0.00	$0.00	$0.00
24	$0.00	$27.38	$0.00	$0.00	$0.00	$0.00	$0.00
25	$0.00	$27.38	$0.00	$0.00	$0.00	$0.00	$0.00

The summary of these component costs of labor turnover for each of the participating companies is presented in Table A-6. Overall, the average gross cost savings associated with avoiding one turnover at the participating companies is slightly over $2,100.

Table A-6 Net Benefit of Avoiding One Turnover per Company

Cost of one turnover per company:					
	Total Costs	Human Resource Costs	Loss of Days	Loss in productivity	Training Costs
Company A	$893.80	$39.34	$372.00	$252.96	$229.50
Company B	$1,527.92	$195.70	$80.24	$601.80	$650.18
Company C	$2,506.20	$1,025.00	$980.00	$308.70	$192.50
Company D	$1,377.19	$130.05	$799.82	$428.48	$18.85
Company E	$521.09	$48.87	$214.44	$203.72	$54.06
Company F	$6,022.24	$106.61	$3,225.06	$1,908.16	$782.40
Company G	$2,251.13	$371.21	$420.00	$1,459.92	$0.00
Average	$2,157.08	$273.83	$870.22	$737.68	$275.36

Companies do receive a wage benefit from labor turnover; however, that is often not included when estimating the savings generated by reducing labor turnover. The wage benefit occurs when the new hire must complete a probationary period where they are paid lower wages and reduced benefits. If the probationary period is longer than the time its takes for the new hire to be fully trained, then the company receives a wage benefit in that it is paying a fully-trained worker a lower wage (and a reduced benefit package) than it would pay a regular worker. As an example, assume that a new hire is paid a total hourly compensation of $10.00 per hour and must complete a 60-day probationary period before he/she receives the "standard" pay level of $15.00 per hour for the position. Assume for the sake of simplification, the new hire completes a two-week training period during which time he/she does not produce any output but after which he/she is fully trained. The wage benefit to the company of the new hire is:

($15.00 - $10.00)	x	8 hours	x	45 days	=	$1,800
Wage difference between a regular worker and a new hire		Work day		Number of days left in the probationary period after training		Wage benefit

The size of this wage benefit depends on 1) the length of the company's probationary period, 2) the difference in the company's pay and benefit package for new probationary workers and regular workers doing the same tasks, and 3) the amount of training required for the worker to be able to perform his/her duties. Our estimation of this wage benefit and the total net cost savings associated with reducing one turnover is shown in Table A-7

Table A-7 Net Benefit of Avoiding One Turnover per Company

Cost of one turnover per company:	Total Costs Saving	Foregone Wage Savings	Net Benefit
Company A	$893.80	-$1,076.67	-$182.87
Company B	$1,527.92	$554.40	$2,082.32
Company C	$2,506.20	-$1,520.93	$985.27
Company D	$1,377.19	-$2,433.45	-$1,056.26
Company E	$521.09	-$542.56	-$21.47
Company F	$6,022.24	-$1,755.46	$4,266.78
Company G	$2,251.13	-$1,319.62	$931.51
Average	$2,157.08	-$1,156.33	$1,000.76

When the foregone wage savings are factored into the analysis, the overall positive impact of reducing turnovers is cut by more than half. Company B is a unique case because their new hires work for a temporary employment agency. When they complete their probationary period, they are given the opportunity to become a permanent employee of Company B. Company B receives a cost benefit when a worker moves from being a temporary worker to a permanent worker, due to the fee it must pay for the temporary employment agency.

The final step in determining the economic impact of the SOURCE's efforts to reduce the number of turnovers at participating firms is to estimate the number of turnovers the SOURCE and its partners—especially the Family Independence Agency—prevented from March of 2003 to March of 2004. In order to do so, we had to estimate the number of true job-saving interventions that occurred during the 12-month period that were due solely to the SOURCE and its partnering agencies. During this period, the FIA caseworkers housed at the SOURCE intervened 181 times in providing employees at the seven companies with needed work-related assistance. The total value of these interventions totaled $62,280. It is highly unlikely that all of these interventions prevented a worker from losing his/her job. In our calculation of the impact (positive and negative) of reducing turnovers, we assumed that an intervention worth 25 percent or more of a person's monthly wage was large enough to be considered a job-saving event. This is a very arbitrary assumption as was discussed in the text. Something as small as bus fare could be a job-saving intervention, while at the same time, an individual, who is facing multiple barriers to employment, could still lose their job even though the FIA made a substantial intervention. Still, using this criterion we estimate that there were 85 job-saving interventions during the 12-month period ending in April of 2004, and the overall savings to the participating firms reached over $43,000 for the year.[9]

A-8 Total Savings from Reduced Turnovers:

	Impacted Workers	Savings Per Worker	Total Savings
Company A	11	-$182.87	-$2,011.52
Company B	1	$2,082.32	$2,082.32
Company C	1	$985.27	$985.27
Company D	5	-$1,056.26	-$5,281.30
Company E	26	-$21.47	-$558.24
Company F	3	$4,266.78	$12,800.34
Company G	38	$931.51	$35,397.50
		Total	$43,414.37

Finally, we estimate the potential cost savings the SOURCE could provide for Companies B and F if they would allow the SOURCE to screen and select 50 percent of the entry-level workers who the companies currently hire through private temporary employment agencies. As mentioned in the text, these estimates were not incorporated in the final benefit-cost analysis.

[9] The original design of this project called for a "before and after" estimation of the SOURCE's effectiveness in reducing turnover. The number of turnovers recorded in the 2002 to 2003 period was going to be compared to the number of turnovers recorded in 2003 to 2004 period – when the SOURCE was active. Unfortunately incomplete recording keeping at several of the participating firms and a couple of unique one-time events made it impossible for us to use this preferred method.