

SAFETY AND HEALTH INVESTMENT PROJECTS FINAL REPORT

Ergonomic Improvements to Courier and Sorting Services
#2011WC00185
February 6, 2012 to November 25, 2013

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Timberland Regional Library

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Frank Flores/Rick Homchick



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Timberland Regional Library is solely responsible for the content of and views expressed in this report and related materials unless they have been formally endorsed by the Washington State Department of Labor and Industries.

PART I

Narrative Report

Organization Profile:

For awarded organizations, to include partners and collaborators, provide a brief description of each organization. Mission, vision, and purpose for each of the organizations who applied (this includes partners and collaborators) for the grant.

Timberland Regional Library (TRL) provides library services to the residents of five counties in Southwest Washington: Grays Harbor, Lewis, Mason, Pacific and Thurston Counties.

Citizens voted in November, 1968 to unite the five counties into one library district. TRL services started in 21 libraries; since 1968 TRL has provided information, reading and lifelong learning services at 27 libraries and 5 library service partner locations by offering nearly 1.3 million items to more than 480,000 people.

Brief Statement of organization's vision/mission

Library mission statement

Timberland Regional Library provides:
Information, Resources, Services, and Places
Where all people are free to:
Read, Learn, Connect, and grow

Library Vision Statement

For every reader, the best book
For every question, the best answer
For every need, the best resource
For every encounter, the best experience
For every library dollar, the best value
For every person, a place to belong

Brief description of track record of achievement

- We issued 27,000 new cards in 2010.
- As of December 31, 2010 there are 317,185 people with library cards.
- We serviced over 3.2 million patrons in our libraries; an additional 3.1 million visited our website.
- Attendance at programs, presentations and activities exceeded 82,000 people.

Access to downloadable materials doubled from 2009 and has already doubled since 2010.

Abstract:

Present a short overview of the nature and scope of the project and major findings (less than half a page).

Timberland Regional Library used SHIP funds to immediately improve injury risk factors and make a healthier work environment for our sorters and couriers. Past practice was reactionary, not making a change until an injury actually occurred and a determination of how and why it happened was made. The grant funds allowed us to be proactive in our research for the construction of a healthier work environment. Our research and feedback indicated the immediate needs following:

- Construction of shelving units with modification for the couriers to be able to secure their loads and completely eliminate having to bend, reach and pull: the actions that are very stressful on the lower back. The idea is that they will walk in and grab their loads with proper body alignment and freedom of movement.
- Evaluation of various opportunities for mobile, adjustable height tables, unique for each user that allows the sorters to reduce the number of bends by having table tops that lower and raise to their specific power zone from which they sort. This was a move away from a permanent, fixed island that the sorters shared and was not unique to any individual's power zone.
- Lift equipment to allow the assisted lifting of containers from ground level to a person's power zone and thus reduce or eliminate the number of awkward lifts from the floor by sorters. The equipment eliminated 50 movements per shift for picking up boxes weighing up to 35 lbs., resulting in less back fatigue and a better pace.
- Test additional tools for planning of future improvements.

Purpose of Project:

Describe what the project was intended to accomplish.

The SHIP Grant was identified as an opportunity for reducing risk factors noted in an Ergonomics Evaluation report authored by Claudia Kelley, Ergonomist. The factors identified in the report may increase the likelihood of an on-the-job injury. We submitted a project description and work plan that centered on the over-riding purpose of identifying specific risk factors and addressing those factors through a group process: modifying the workspace, utilizing available tools, and communicating concerns. In addition, we wished to review the feasibility of future and ongoing opportunities for improvement. Initially, the SHIP Grant was thought to be a source of funding for ergonomic improvements for a pre-determined project. The result was an opportunity to learn more about ergonomic tools, resources, and theories, and the need to include ergonomic topics in our daily discussions as a group in order to be self-sustaining.

Statement and Evidence of the Results:

Provide a clear statement of the results of the project include major findings and outcomes and provide evidence of how well the results met or fulfilled the intended objectives of the project.

As we approached the project, the original idea was to achieve specific physical outcomes

by reducing the number of awkward lifts and pulls for our target population. We feel like we achieved those physical results but we also gained a knowledge base and appreciation for the impacts ergonomic improvements make to our daily routines; even small improvements. This awareness increased organizational capacity for addressing ergonomic issues in-house. Ergonomic gains are an important topic to include in our daily work conversations.

Our couriers spent the majority of each day functioning with awkward movements; reaching, bending and pulling in awkward positions numbered in the 100's each day. Our sorters were working outside of their specific power zones for long durations of time and all staff felt the blades of the standard box handles used in daily operations. With the new shelving, a great number of the awkward reach and pull movements have been eliminated for our Couriers. With the lift equipment, the Sorters are now sorting from their power zone and not having to perform multiple bends to reach a box on the. We also increased the work space for sorting, allowing them to sort directly into boxes and not repeat body movements. And, with the new box handles, we have eliminated the blades that were causing repetitive stress injuries with use. The rounded handles displace the impact force with use.

However, the unexpected and most powerful impact has been the knowledge gained and the open discussions that have evolved, and recognition for the need to include these types of conversations in ongoing conversations. The SHIP Grant was special for us because it involved better staff cohesion with really good conversations about the workplace and teamwork. It will also help us into the future in order to evaluate processes for simple changes that are healthier for our staff both mentally and physically.

Measures to Judge Success:

If relevant, state what measures or procedures were taken to judge whether/ how well the objectives were met and whether the project or some other qualified outside specialist conducted an evaluation.

The purpose of the SHIP Grant was to reduce physical risk factors that could lead to workplace injury. Frank Flores, Project Manager, defined the specific lifts and movements that each Courier was to evaluate and compiled quantitative information over a sample period. There was one measurement period performed over a standard workday for bends, lifts and awkward movements before the project implementation. The workdays do not often vary, so it was felt that a standard day would be an adequate sample to extrapolate data.

There was also a qualitative aspect to the evaluation. We wanted to know how the drivers felt before and after the project implementation. Interviews were conducted before and after.

We eliminated 126 daily bends coupled with pulling and pushing movements by making the shelving area more accessible to a hand truck. We eliminated 378 daily grips by the Couriers using bladed handles on boxes, in addition, throughout the service district other

staff were no longer exposed to the bladed handles.

Our focus was directly on eliminating those movements described above, but the qualitative aspects were interesting. It wasn't until the project became tangible that the target audience became active agents. And, after the project's implementation, they felt physically better after a week of working that led to them feeling mentally better. This physical affect has impacted conversation in a more positive direction and made the target members more active participants with additional improvements that we are examining currently.

Relevant Processes and Lessons Learned:

Specify all relevant processes, impact or other evaluation information which would be useful to others seeking to replicate, implement, or build on previous work

AND

Provide information on lessons learned through the implementation of your project. Include both positive and negative lessons. This may be helpful to other organizations interested in implementing a similar project.

The empirical results were somewhat anticipated. It was obvious that the design for the work space was creating issues as pointed out in the Ergonomics Report and the impact of a thoughtful re-design would benefit those results. However, the results helped to quantify the overall purpose for the project and provided the Target Audience the information to process the intended impact on them.

The Target Audience was concerned after participating in the the best practices tour of other districts that this was a project looking for efficiencies and job elimination. Change is always difficult. But, after reviewing the results and talking with each member as if they are part of the process and not an obstacle to the goal, it was more apparent that efficient body movement for each individual was the purpose.

Once that conclusion was reached, each member of the Target Audience felt free to broaden the conversation and examine other elements of their position. The results have led to the interjection of ergonomics into our primary focus and conversation.

Entering the project we hoped to achieve even more gains with our performance targets but some ideas created side effects that could not be avoided. For instance, the mini-pallets would have avoided the need for our couriers to reach and bend the stacked boxes in order to slip a hand truck under. However, the mini-pallets would have required another bend, lift and carry action. The ergonomic cost/benefit evaluation was discussed and it was decided not to use that tool as originally planned.

Product Dissemination:

Outline of how the products of the project have been shared or made transferrable.

The report of findings for the SHIP project have been shared with Kitsap Regional Library and the State of Washington Ergonomist, Rick Goggins. Timberland Regional Library will also have the report available on its website. Finally, we will use the report of findings to continue to reach out to other library districts to discover best practices for moving materials.

Feedback:

Provide feedback from relevant professionals, stakeholder groups, participants, and/ or independent evaluator on the project.

The effectiveness of the project was enhanced by incorporating recommendations in a 2010 Ergonomics Report produced by Claudia Kelley, WA LNI Ergonomist, after an audit at our administrative facility. Also, Rick Goggins, WA LNI Ergonomist, accompanied us on a best practices visit to other library districts which included: Sno-Isle, King County, Seattle Public, and Pierce County. The outbound and inbound sections were evaluated for shelving, totes, vehicles, and lift equipment. We also had the opportunity to talk with the managers for each district. Advantages, disadvantages, and financial feasibility for TRL were noted at each location. This visit also enabled us to discuss the project with Rick Goggins in more depth, which was key for the project's success.

There were multiple layers of groups who have provided feedback on this project. Ergonomic professionals from the State of Washington provided focused insight into the areas of highest concern. Claudia Kelley's Ergonomics Report was the catalyst to the project. Rick Goggins, LNI Ergonomist, provided reminders at key junctions throughout the project of the original purpose and of the key objectives. He also provided excellent product reviews and endorsements.

Anar Imin was extremely valuable for support, feedback, and patience. The intent of the project's original design seemed to fall off target and some aspects seemed wasteful but re-evaluating the purpose of the project and the results with Anar provided renewed energy towards the completion.

The target audience was most affected, and going into the project they wondered if efficiency of body movement meant losing their jobs. The unexpected impact has been the knowledge gained and the open discussions that have evolved and recognition for the need to include this type of subject matter in ongoing conversations. The SHIP Grant was special for us because it involved better staff cohesion with really good conversations about the workplace and teamwork. It will also help us into the future in order to evaluate processes for simple changes that are healthier for our staff.

Project's Promotion of Prevention:

Explain how the results or outcomes of this project promote the prevention of workplace injuries, illnesses, and fatalities?

The elimination of those direct physical movements was our primary focus. We feel like

the specific level of reduced forced movements was attained. Those changes also impacted 100% of our Target Audience and included more beneficiaries throughout our service area.

Entering the project we hoped to achieve even more gains with our performance targets but some ideas created side effects that could not be avoided. For instance, the mini-pallets would have avoided the need for our Couriers to reach and bend the stacked boxes in order to slip a hand truck under. However, the mini-pallets would have required another bend, lift and carry action. The ergonomic cost/benefit evaluation was discussed and it was decided not to use that tool.

A progress indicator that was unexpected was the level of staff satisfaction with participating in the project. The buy-in was not immediately attained but after the results and intentions were understood it became easier for the Target Audience to become an active participant. We intend to continue those direct conversations and build on the relationship gains made available through the SHiP project.

Uses:

How might the products of your project be used within the target industry at the end of your project?

Is there potential for the product of the project to be used in other industries or with different target audiences?

The final report is being used within our company to evaluate the project's impacts and to continue the progress of open conversations between the target audience.

We have shared the report with one other library district and intend to use the final report as a chance to make contact with other library districts. One of the great aspects of this project was learning from other library districts about how they handle the movement of materials and also from their approach to ergonomics.

There is great potential from sharing the final report with other industries or with other different target audiences. The amount of information regarding ergonomics was overwhelming to us and there seemed to be a product for every situation. However, it's important to meet and talk with those who have experience and to learn from those experiences.

Additional Information

Project Type <input checked="" type="checkbox"/> Best Practice <input type="checkbox"/> Technical Innovation <input type="checkbox"/> Training and Education Development <input type="checkbox"/> Event <input checked="" type="checkbox"/> Intervention <input type="checkbox"/> Research <input type="checkbox"/> Other (Explain):	Industry Classification (check industry(s) this project reached directly) <input type="checkbox"/> 11 Agriculture, Forestry, Fishing and Hunting <input type="checkbox"/> 21 Mining <input type="checkbox"/> 22 Utilities <input type="checkbox"/> 23 Construction <input type="checkbox"/> 31-33 Manufacturing <input type="checkbox"/> 42 Wholesale Trade <input type="checkbox"/> 44-45 Retail Trade <input type="checkbox"/> 48-49 Transportation and Warehousing <input type="checkbox"/> 51 Information <input type="checkbox"/> 52 Finance and Insurance <input type="checkbox"/> 53 Real Estate and Rental and Leasing <input type="checkbox"/> 54 Professional, Scientific, and Technical Services <input type="checkbox"/> 55 Management of Companies and Enterprises <input type="checkbox"/> 56 Administrative and Support and Waste Management and Remediation Services <input type="checkbox"/> 61 Educational Services <input type="checkbox"/> 62 Health Care and Social Assistance <input type="checkbox"/> 71 Arts, Entertainment, and Recreation <input type="checkbox"/> 72 Accommodation and Food Services <input checked="" type="checkbox"/> 81 Other Services (except Public Administration) <input type="checkbox"/> 92 Public Administration
Target Audience: Sorters and Couriers work classification at Timberland Regional Library.	
Languages: English	
Please provide the following information - - <i>(information may not apply to all projects)</i>	
# classes/events:	2
# hours trained	10
# companies participating in project	1
# students under 18	0
# workers	14
# companies represented	1
# reached (if awareness activities)	0
Total reached	0
Have there been requests for project products from external sources? Yes <i>If Yes, please indicate sources of requests:</i> Kitsap Regional Library	

List, by number above, industries that project products could potentially be applied to.
 11, 21, 22, 23, 33, 42, 44, 45, 48, 49, 61, 62, 71, & 72

Potential impact (in number of persons or companies) after life of project?
 100s

PART II

Financial Information Budget Summary

Project Title:

Project #:

Report Date:

Contact Person:

Contact #:

Start Date:

Completion Date:

1.	Total original budget for the project	\$ <u>23,994.43</u>
2.	Total original SHIP Grant Award	\$ <u>21,775.83</u>
3.	Total of SHIP Funds Used	\$ <u>19,141.10</u>
4.	Budget Modifications (= or - if applicable)	\$ <u>0.00</u>
5.	Total In-kind contributions	\$ <u>2,218.60</u>
6.	Total Expenditures (lines 2+4+5)	\$ <u>23,994.43</u>

Instructions:

- Complete the Supplemental Schedule (Budget) form first (on the next page).
- The final report must include all expenditures from date of completion of interim report through termination date of grant.
- Indicate period covered by report by specifying the inclusive dates.
- Report and itemize all expenditures during specified reporting period per the attached supplemental schedule.
- Forms must be signed by authorized person (see last page).
- Forward one copy of the report to **Project Manager Name, SHIP Project Manager at PO Box 44612, Olympia, WA 98504-4612**

PART II
(Continued)

*Financial Information
Supplemental Schedules (Budget)*

Project Title:	Ergonomics Improvements to Courier and Sorting Services		
Project #:	2011WC00185	Report Date:	03/07/2014
	Frank Flores		(360)704-4517 or
Contact Person:	Rick Homchick	Contact #:	(360)704-4549
Total Awarded:	\$21,775.83		

ITEMIZED BUDGET: How were SHIP award funds used to achieve the purpose of your project?

	Budgeted for Project	Amount Paid Out	Difference
A. PERSONNEL	\$2,643.78	\$2,643.78	0
Explanation for Difference and other relevant information:			

	Budgeted for Project	Amount Paid Out	Difference
B. SUBCONTRACTOR	N/a		
Explanation for Difference and other relevant information:			

	Budgeted for Project	Amount Paid Out	Difference
C. TRAVEL	\$66.30	\$66.30	0
Explanation for Difference and other relevant information:			

	Budgeted for Project	Amount Paid Out	Difference
D. SUPPLIES	\$15,955.67	\$13,320.94	\$2,634.73
Explanation for Difference and other relevant information: The van with lift gate proposal was tested for a time shorter then anticipated. The size of the van used in testing was larger then the Target Audience was used to and caused additional stress to the routes.			

	Budgeted for Project	Amount Paid Out	Difference
E. PUBLICATIONS	\$100.00	\$100.00	0
Explanation for Difference and other relevant information:			

	Budgeted for Project	Amount Paid Out	Difference
TOTAL DIRECT COSTS	\$18,765.75	\$16,131.02	\$2,634.73

	Budgeted for Project	Amount Paid Out	Difference
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TOTAL INDIRECT COSTS	N/a		
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	Budgeted for Project	Amount Paid Out	Difference
TOTAL SHIP BUDGET	\$21,775.83	\$19,141.10	\$2,634.73

	Budgeted for Project	Amount Paid Out	Difference
F. IN-KIND	\$2,218.60	\$2,218.60	0
Explanation for Difference and other relevant information:			

I hereby certify that the expenditures listed on this report were made with my approval:

Date

Signature of Project Manager

PART III

Attachments:

Provide resources such as written material, training packages, or video/ audio tapes, curriculum information, etc. produced under the grant.

Also include copies of publications, papers given at conferences, etc.

This information should also be provided on a **CD** or **DVD** for inclusion in the file.

REMINDER!!!: All products produced, whether by the grantee or a subcontractor to the grantee, as a result of a SHIP grant are in the public domain and can not be copyrighted, patented, claimed as trade secrets, or otherwise restricted in any way.