

SAFETY AND HEALTH INVESTMENT PROJECTS
FINAL REPORT

EL CHARPP English/Spanish/Russian Construction Safety Handbook and Smart phone
aps for i-phone, i-pad and google droid operating systems

GRANT #2013ZB00222

May, 2013 – June 2014

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1711 S. Jackson Street
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June 30, 2014

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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.

Founded in 1992, the **Smart Association** is a non-profit business association providing companies with resources to manage and control risk in Washington State for their companies and their workers. Smart promotes safety through services such as on site safety reviews, accident investigations, educational materials and training classes, and pro-active claims management.

Our vision is to remain a committed advocate and resource for employers, focused on increasing safety awareness and improving safety practices throughout the state. To this end, the Puget Sound Area Safety Summit is sponsored and administered by Smart, and is a network of government, business and labor that meets monthly to offer topics related to developing methods and solutions to address and improvement workplace safety.

Additionally, SMART sponsors and administers the Puget Sound Area Safety Summit (SUMMIT) which is a networked alliance of government, management, and labor, organized to develop methods and solutions for continuous improvement of workplace safety, meets monthly with varying safety and health topics. The mission of the SUMMIT is to share information and collaborate in our mutual commitment to safety, while seeking solutions to common problems.

The **Master Builders Association** (MBA) serves King County and Snohomish and Pierce Counties as the largest local homebuilders association. Founded in 1909 by a group of Seattle builders who saw the need to unite in order to address the many concerns and issues facing the housing industry. Their goal is to work with government to develop laws that protect the environment while still providing attractive affordable communities and homes. Safety on the constructions site is a primary concern for the MBA., providing numerous workshops and seminars for its 3000+ members

Abstract:

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

"EL CHARPP" Construction Hispanic And Russian Protection Plan

A Safety and Health construction communication Tool Book and smartphone "app" for contractors (or classrooms instructors) of English second language Spanish/ Russian workers consisting of construction safety and health phrases related to common on site hazards and related risks. The smartphone "app" is a cloud based infrastructure

supporting both i-phone, i-pad apple, and google droid products. The "app" functions with voice features to speak the phrases in Spanish, or Russian with a click of a button or search features. Both the booklet and smart phone aps are available to the general public for use in Washinton state. The booklet project ran very smoothly, the app development had continual issues with both the budgeting allocation and time needed to complete the processes necessary, though at the end the product functions beautifully.

Purpose of Project:

Describe what the project was intended to accomplish.

An enhanced version of the "EL CHAPP" construction safety tool book, including the addition of Russian. "EL CHARPP" (Construction Hispanic and Russian Protection Plan), and smartphone "app" that will verbally speak the language chosen to communicate to the worker, offering contractors the means to explain to Hispanic and or Russian workers in short construction phrases what and when safety and health needs must be addressed during various stages of construction.

Changes in technology, demographics and materials in the industry create a need to ensure safety training, materials and resources are aligned with these changes. User experience and application workflow are key aspects of any modern smartphone "app" addressing productivity, aesthetics and usability. .

The tool book "EL CHARPP" and the smartphone "app" are available to any Washington based construction company, educational institution, association, or government agency who might benefit.

Key goals are to breakdown language barriers that may be contributing to accidents and illness and claim costs.

Our goal: Revise, update booklet, effectively use technology and the world wide web, to develop a smart phone 'app" and ultimately provide construction employers with safety resources as an industry, produce a statewide benefit.

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.

This project completed milestones set forth in the work plan that resulted in:

- Materials developed with this grant have resulted in 2 products:

A 94 page tri-lingual English/Spanish/Russian Communication Safety handbook, consisting of phrases for timely on-site communication to the Hispanic or Russian worker; 1st: stopping an unsafe act, 2nd safety education on hazardous actions, and eliminating risks (**Sent under separate cover**)

A smartphone"app" indexing the same 12 chapters with 308 phrases related to stopping unsafe acts and providing key safety and health education available for i-phone, i-pad and Google droid operating systems.

The smartphone app has key optimization as well as query optimization; the contractor locates the info, or uses the search function, the "app" speaks it in the relevant language. - Searchable database based on general construction or specialty construction activities. **(Available from Apple Store for iPhone and iPad, and GoogleStore for droid phone versions)**

All the above mentioned tasks have been completed and documented with correspondence and invoices.

The project is complete, all deliverables have been met, the project met its output goals. Both outcomes and outputs have been concluded;

- Reduce language barriers regarding safety and health information with the Hispanic and Russian construction workforce which will improve safety for all workers
- Workers exposures to job site hazards are reduced
- Employers who only speak English have tools to communicate on the job to stop unsafe acts
- Hispanic and Russian workers will be able to hear their own language while learning about an unsafe act or corrective action
- Increase access to safety materials

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 safety handbook El CHARRP, has been distributed monthly to any interested parties, employers, educators, safety professionals, at the SUMMIT meetings, members of Smarts two construction retro groups have had them distributed to them and will continue to be available at quarterly meetings. Several hundred are being distributed to Master Builders members at weekly seminars. LNI has received copies. Notice will go out to all Summit members how to access.

Besides seeing progress on the "apps" through beta testing, and the occasional informal feedback about usage from our safety professionals, we have not had person/s conduct a separate evaluation.

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 process of using a translation tool to address on site hazards for English speaking safety, and construction foremen and superintendents, should impact the number of accidents that occur on construction sites. Whether using the EL CHARPP tool book or a smart phone “app” employers can speak to workers about safety concerns as well as teach safety rules.

This type of project could be done for the restaurant industry as an example, or the hospitality industry, both of which employ Russian and Hispanic workers and deal with English second language and non speaking populations that need safety information.

Lessons Learned

This project encountered stumbling blocks in both budget and timeframes anticipated for reaching Milestones, the Project literally ran out of money, though at the completion of the project all goals have been met.

Budgeting proved problematic in as much as some

- √ B. Subcontractor amounts were underfunded as original bids were under estimated.
- √ Approval time from Apple for the smart phone “app” took weeks longer than we had estimated.
- √ Hours budgeted for A. Personnel staff were underfunded, not accounting for the time necessary for the enhanced version of the EL CHARPP tool book. With the addition of a safety professional review, and public feedback from the first published booklet, many phrases were revised, some eliminated and several additional added.
- √ This review as well as LNI approval took more time and hours than budgeted and anticipated yet ensured a perfect final product.
- √ Accounting hours and project manager hours were estimated for a project of 7 months yet the entire project took 13 months!
- √ Testing of the smart phone “apps” on different phones also took additional time.

√ The grant had projected 7 months of activity for budgeting office space and related expenses when in reality the grant activities occurred over the course of 13 months! Hence F. Other category was underfunded as well.

Having no prior experience with the process of developing an “app”, testing, and the providers review before going live, meant lots of assumptions in the budgeting process that in hindsight getting more feedback from the subcontractors in the budget process would have helped in better developing an successful budget and more realistic timeframe for the project in its entirety.

A Budget Modification was requested and approved to move surplus dollars from categories to cover these unexpected additional costs, and still the grant went over by \$700.00+ dollars which SMART included in their in-kind contribution along with unreimbursed hours worked, as one final payment would still be due the smartphone “app” developer at the conclusion of the grant that we were obligated to cover. **see budget report**

Time Frame as well as budget needed to be adjusted twice due to the length of time for Apple to approve the “app”, and for reprogramming that the Google droid version would take. A Modification for increasing time for the project was submitted and approved addressing issues that were beyond our control time wise.

Several issues cropped up to delay progress of the Smart phone EL CHARPP app:

1st Dunn and Bradstreet (Dun & Bradstreet, Inc. is an American public company headquartered in Short Hills, a community in Millburn, New Jersey, USA that licenses information on businesses and corporations for use in credit decisions, business-to-business marketing and supply chain management. Often referred to as D&B, the company maintains information on more than 220 million companies worldwide.) Apple uses Dunn and Bradstreet as a means to check reliability of those who want to submit apps to their Apple store. As it turned out, they had 2 business accounts for SMART with different addresses and Apple would not acknowledge us as a business until that was sorted out and we received word back from Dunn and Bradstreet which was the true business account. Submitting to Apple can take 2-3 weeks for any acknowledgement, then this needed to be sorted out with Dunn and Bradstreet, which delayed about 3 weeks before Apple would then accept our first app for access to test the display for working out the kinks - which in turn took 3 additional weeks. With a pass code, a limited number of users can test the app and any issues can be recorded until we inform Apple to upload to the Apple store for public access. (NOW Available for public use!)

Our ‘app’ subcontractor got the flu and lost 2 weeks of productivity. For these reasons we have needed additional time which meant more hours worked than originally planned.

Google Droid introduced a new operating platform, so the programming was a real challenge to add as well as to be available to older operating systems.

Many of these unanticipated stumbling blocks threw off both timing and budget as additional hours continued to be needed therefore additional time was required.

Lessons learned here by the grant project manager whose job was to keep everything and everyone on task as well as adhere to the budget, is to be more consciousness in the budgeting process, get feedback from parties planning on being involved as subcontractors as to more realistic time frames needed for certain processes, and that budgeting impact. Include a buffer of estimates knowing from the time a bid is submitted with an application, that several months may pass before an award and money is available to begin and costs may increase, delays may occur. Communicate with your partners and subcontractors that play a major role in your project to be on the same page as much as you can!

Product Dissemination:

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

- 1) We have conducted several announcements at the monthly SUMMIT, safety tool booklets are always on display, and available
- 2) Also awareness and discussion at the Construction Advisory Committee.
- 3) Apple products have been demonstrated in a presentation to employers at the SUMMIT.
- 4) Newsletter articles have been posted in both Smart and MBA news. **(see attachment 1)**
- 5) Networking is always a part of marketing. Outreach has gone out to the Construction Center for Excellence, the Washington Self-Insurers, the AGC, other Retro groups.
- 6) We have also encouraged our manufacturing clients that they can utilize some sections related to ladders, scaffolding, respiratory protection as examples
- 7) Additional outreach and access will continue at the monthly SUMMIT meetings sponsored by the Smart Association.
- 8) Labor and Industries may choose to do their own press release about the project.
- 9) The Smart Association also hosts Claims 101 classes across the state for new construction company members for Smart and the MBA, and interested contractors free of charge. The safety tool booklet and “apps” are discussed and made available at these meetings.

Feedback:

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

A recent research project undertaken by Sathy Rajendran, Phd, CSP,CRIS, LEED Ap, Asst. Professor of the Safety and Health Construction Program at Central Washington University by the students found more than 20 smart phone “apps” out there related to construction. However, not one actually spoke the information, so our product is unique offering both Russian translations of information as well as Spanish.

Contractors have been pleased with the updated booklet as many small contractors don’t have the luxury of having smartphones on jobsites and those that do, are partial to the new “app” particularly because it speaks!

Project's Promotion of Prevention:

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

Employers are empowered to discuss safety concerns with the booklet or "app" in the workers' native language, eliminating possible mis communications. This not only may prevent injuries and illnesses, it also promotes learning safety rules and standards related to some specific work activities. May reduce the risk of re-injury. Assist in reducing falls, increase effective use of Personal Protection Equipment. Demonstrates you value your employee and his/her contributions to your company by your focus on safety first.

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 original el CHAPP was widely used and accepted in the construction industry for both small businesses and large. SMART was asked far and wide for copies of the booklet. Workers benefit by hearing their own native language to help them learn about unsafe acts and corrective action. Adding Russian to both the booklet and "app" widens the potential to assist in safety on the construction job site. The tool book "el CHARPP" and the smartphone "app" are available to any Washington based construction company, educational institution, or government agency who might benefit.

We encourage manufacturing companies to use for ladder safety, scaffold safety, respiratory safety and any other related safety rule.

This concept could be applied for the hospitality industry, as well and the hotel/motel industry where a number of Russian and Hispanic people are also employed.

Additional Information

Project Type <input type="checkbox"/> Best Practice X <input type="checkbox"/> Technical Innovation X <input type="checkbox"/> Training and Education Development <input type="checkbox"/> Event X <input 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 X <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 type="checkbox"/> 81 Other Services (except Public Administration) <input type="checkbox"/> 92 Public Administration																
Target Audience: construction employers in Washington State and their Russian and Hispanic workers.																	
Languages: English, Spanish, Russian																	
Please provide the following information - - <i>(information may not apply to all projects)</i>	List, by number above, industries that project products could potentially be applied to. 23, 72, 81																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;"># classes/events:</td> <td></td> </tr> <tr> <td># hours trained</td> <td></td> </tr> <tr> <td># companies participating in project</td> <td>500+</td> </tr> <tr> <td># students under 18</td> <td></td> </tr> <tr> <td># workers</td> <td>unknown</td> </tr> <tr> <td># companies represented</td> <td>1500</td> </tr> <tr> <td># reached (if awareness activities)</td> <td>125+</td> </tr> <tr> <td>Total reached</td> <td>unknown</td> </tr> </table>	# classes/events:		# hours trained		# companies participating in project	500+	# students under 18		# workers	unknown	# companies represented	1500	# reached (if awareness activities)	125+	Total reached	unknown	Potential impact (in number of persons or companies) after life of project? 2000+
# classes/events:																	
# hours trained																	
# companies participating in project	500+																
# students under 18																	
# workers	unknown																
# companies represented	1500																
# reached (if awareness activities)	125+																
Total reached	unknown																
Have there been requests for project products from external sources? Yes <i>If Yes, please indicate sources of requests</i> Construction companies in Washinton state plan to utilize both products in neighboring states (Oregon, Idaho) where they also do business and have English second language construction workers.																	

PART II

Financial Information Budget Summary

Project Title: EL CHARPP

Project #: 2013ZB00222

Report Date: July 7, 2014

Contact Person: Margie Weinberg

Contact #: 206-643-9627

Start Date: May 28, 2013

Completion Date: June 15, 2014

1.	Total original budget for the project	\$ 77,968.00
2.	Total original SHIP Grant Award	\$73,918.00
3.	Total of SHIP Funds Used	\$73,918.00
4.	Budget Modifications (= or - if applicable)	\$ <u>00</u>
5.	Total In-kind contributions	\$ 7849.12
6.	Total Expenditures (lines 2+4+5)	\$ 81,767.12

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 **Caprice Catalano, SHIP Grant Manager at PO Box 44612, Olympia, WA 98504-4612**

PART II
(Continued)

*Financial Information
Supplemental Schedules (Budget)*

Project Title: EI CHARPP

Project #: 2013ZB00222

Report Date: July 7, 2014

Contact Person: Margie Weinberg

Contact #: 206-643-9627

Total Awarded: \$77,968.00

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

	Budgeted for Project	Amount Paid Out	Difference
A. PERSONNEL	\$13,045+\$1444.98	\$14,610.00	(\$165.02)
Explanation for Difference and other relevant information: under estimated hours needed and length of time of project Moved money from C. Travel (\$364.64) and D. Supplies (\$1080.34) as approved Budget Modification A. Personnel to have money for final payroll as many additional hours have been spent than budgeted. Additional overage paid as part of (\$772.12) in kind from SMART.			

	Budgeted for Project	Amount Paid Out	Difference
B. SUBCONTRACTOR	\$45,814.00	\$46,314.00	(\$500.00)
Explanation for Difference and other relevant information: One subcontractor cost \$500.00 additional to original bid, which was approved by the Project Manager, anticipating we would remain under the 10% margin, and end up with a surplus elsewhere to make up the difference. As it turned out, this was not the case. This was paid as in kind from SMART as part of the total \$727.12 paid as in kind over and above original in kind estimate			

	Budgeted for Project	Amount Paid Out	Difference
C. TRAVEL	\$ 967.00	\$602.36	\$ 364.64
Explanation for Difference and other relevant information: Less travel ,more internet interface, Budget Modification requested and approved to move \$364.64 to A. Personnel as part of addition of \$1444.98 to that category.			

	Budgeted for Project	Amount Paid Out	Difference
D. SUPPLIES	\$ 1470.00	\$389.66	\$1080.34
Explanation for Difference and other relevant information: Several variables; beyond the supplies during the book redesign and enhancements and			

addition of Russian, the smart phone “app’ part of the project didn’t require supplies as any supplies necessary were covered in that subcontractor budget, so additional supplies were not purchased. Budget Modification approved moving excess amount of \$1080.34 to cover over runs in A. Personnel

	Budgeted for Project	Amount Paid Out	Difference
E. PUBLICATIONS	\$ 12,250.00	\$ 12,295.10	(\$45.10)
Explanation for Difference and other relevant information: Slight difference from bid to actual cost, paid thru in kind as part of \$772.12 paid from SMART.			

F. OTHER	Budgeted for Project	Amount Paid Out	Difference
	\$372.00	\$434.00	(\$ 62.00)
	Did not budget for full 12 months months, so needed additional funds, quit billing grant after 7 months or this could have been an additional \$372.00 over budget		Paid thru in kind as part of \$772.12 paid from SMART.
TOTAL DIRECT COSTS	\$73,918.00	\$74,645.12	\$727.12
			Additionally needed funds to complete the project and cover over runs in A. Personnel and B. Subcontractors and E. Publications and F. Other as paid as in kind by SMART.

	Budgeted for Project	Amount Paid Out	Difference
TOTAL INDIRECT COSTS	0	0	0

	Budgeted for Project	Amount Paid Out	Difference
TOTAL SHIP BUDGET	\$73,918.00	\$ 74,645.12	(\$727.12)

	Budgeted for Project	Amount (DONATED)Paid Out	Difference
F. IN-KIND	\$ 4050.00	\$7849.12	+3799.12
Explanation for Difference and other relevant information: Smart took responsibility to cover the \$727.10 to cover overruns from A. Personnel, in final invoice under B. Subcontractor payment, overage in E. Publication and F.Other, likewise paid from in kind			

contribution from SMART. SMART(A. Personnel); Project Manager and accountant donated respectfully 30 hrs and 25 hours after funds ran out in order to complete the project and final accounting and reporting.

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

07/15/2016

Date

Margie Weinberg

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.

Attachment 1

News Article

EI CHARPP

Announcing the first iPhone, iPad application to communicate safe work practices for construction to the Spanish and Russian speaking workforce. (Android version to follow soon)

SMART, in partnership with the Master Builders Association of King, Pierce, and Snohomish County are launching this application (Apple App Store) as an additional resource to complement the pocket booklet recently printed. The booklet, originally produced in 2009 has been updated to include Russian, and copies are free, and is available by contacting the SMART association. These projects were made possible with funding under the Safety and Health Investment Project, from the Washington State Department of Labor and Industries.

The trilingual smart phone application has both written and audio clip versions of over 300 phrases used to communicate safety in construction. The application is divided into 12 categories including useful communication, concrete work, electrical, excavation & trenching, fall hazards, first aid, hazard communication, ladder safety, personal protective equipment (PPE), housekeeping, scaffold safety, vehicles/equipment, and working in extreme weather conditions.

It is our hope that this new mobile application will be an important tool for safety and supervisory staff to communicate the importance of all aspects of safety and accident prevention in the construction industry to a multilingual workforce.

If you have any comments or suggestions for additional phrases, please contact Brian Ducey at 206-812-3819 or at bducey@smartwa.org.

THE END OF REPORT

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.