



Oregon Department of Transportation's Workforce Development Program

Increasing Diversity in Oregon's Heavy Highway
Construction Workforce

July, 2015



Background

- Senate Bill 894 of the 2009 Oregon Legislative Session establishes the WDP Program at \$1.5 million per biennium
- ODOT and BOLI sign first Interagency Agreement on January 15, 2010, establishing BOLI as Program Administrator
- WDP Program issues first Request for Proposals (RFP) on December 6, 2010 for \$1 million in services
- Five Contracts for services are signed in February 2011
- Senate Bill 831 of the 2013 Oregon Legislative Session increases funding for the WDP Program to \$2.1 million per biennium

The Statute

Oregon Revised Statutes (ORS) 184.866 directs that of the federal funds received each biennium by ODOT pursuant to 23 U.S.C. 140(b), the department shall expend **one-half (1/2) of one (1) percent up to an amount of \$2.1 million each biennium to increase diversity** in the highway construction workforce **and prepare individuals** interested in entering the highway construction workforce.



The Statute

Funds shall be used for the following 10 Activities:

- Pre-apprenticeship programs
- Pre-employment counseling
- Orientations on the highway construction industry
- Basic skills improvement classes
- Career counseling

- Remedial training
- Entry requirements for training programs
- Supportive services and assistance with transportation
- Child care and other special needs
- Job site mentoring and retention services



Needs Assessment

- Confirms that apprentices need lodging and per diem for out-of-town work, fuel assistance (particularly before 1st paycheck), child care, and job readiness supplies
- Identifies three overarching challenges facing women and racial/ethnic minority apprentices:
 - Discrimination and harassment
 - Lack of work (including issues of reductions of force and re-employment policies and practices)
 - Lack of supervised training on the job and mentoring off the job
- Results are published in an academic article – [“When Working Hard Is Not Enough for Female and Racial/Ethnic Minority Apprentices in the Highway Trades” \(Sociological Forum, Vol. 30, No. 2, June 2015, pp 415-438\)](#)



Highway Construction Trades

- Five traditionally recognized highway trades with registered apprenticeship programs in Oregon:
 - Carpenters
 - Cement Masons
 - Ironworkers
 - Laborers
 - Operating Engineers
- Program added Painters to qualified trades in 2013
- Truck drivers are in a highway construction trade but only two employers are currently participating in a registered apprenticeship program in Oregon

Other Trades

- Apprentices in other construction trades may qualify for services if they are actively working on a transportation construction project
- Program has sponsored pre-engineering classes on a pilot basis
 - To increase the diversity and number of bridge, road, & transportation engineering workforce

Continuum of Service to Individuals

- Career Exploration
- Preparing Apprenticeship Seekers

- Sustaining Current Apprentices
 - Fuel Assistance
 - Lodging and Meal Allowances (Per Diems)
 - Child Care Subsidies
 - Job Readiness Assistance
 - Training
 - Retention Support



Career Exploration

- Construction Career Camps
 - Middle School (approximately 11-14 y/o)
 - High School (approximately 15-18 y/o)
 - Community College or Out-of-School (17-24 y/o)
- Coordination with Workforce Sources
 - Career Counselors
 - Employment Offices
 - Workforce Investment Act Boards

Preparing Apprenticeship Seekers

- Pre-Apprenticeship for Disadvantaged
 - Women
 - Racial/Ethnic Minorities
 - Youth
 - Previously Incarcerated
- Trades Intensive Classes (“Boot Camps”)
- ODOT Regions 2-5 (outside Portland-Metro)



Current Apprentices

Fuel Assistance

- Reimbursement for fuel to get to and from work and class
- Targeted to apprentices in 1st year of training
- Based on 50% of the GSA mileage rate
- Dollar limit per apprentice

Current Apprentices

Lodging and Meals

- Lodging and meals for apprentices whose work or classes are more than 60 miles one-way from home
- Based on GSA per diem rates
- Dollar limit per apprentice

Current Apprentices

Child Care Subsidies

- Uses rates from the Employment Related Day Care program
- Child care providers need to be either certified through the Office of Child Care or on the Department of Human Services list of approved providers
- Pilot project for after hours care
- Dollar limit per apprentice

JJ Clayborne - Operating Engineer



Jenny Endres - Laborer



Current Apprentices

Job Readiness Assistance

Work Tools

Work Clothes

Personal
Protective
Equipment
(not provided by
the employer)



Current Apprentices Training

- Budgeting Classes
- Personal Responsibility Classes
- [Nutrition and Food Safety Online Curriculum](#)
 - Developed by Oregon Healthy Workforce Center at the Oregon Health and Science University
 - Results (increased knowledge and intention to change behavior) measured through Evidence Based Research



Current Apprentices Training

WORK, FOOD, AND APPRENTICES: EVALUATING AN ONLINE NUTRITION TRAINING



Oregon Institute of Occupational Health Sciences

Jami Cheng^{1,3}, Megan Parish MPH¹, Larry S. Williams MA², Diane Rohlman PhD¹

¹Oregon Institute of Occupational Health Sciences, Oregon Health & Science University, Portland, OR

²Bureau of Labor and Industries, Portland, OR

³Johns Hopkins University, Baltimore, MD



INTRODUCTION

TOTAL WORKER HEALTH™

Total Worker Health™ (TWH) is a strategy that integrates health protection with health promotion to prevent worker injury and illness.⁴ Construction workers are at increased risk for injuries on the job. Although training for apprentices typically includes information addressing safety at the workplace, little information is provided on health promotion topics.²

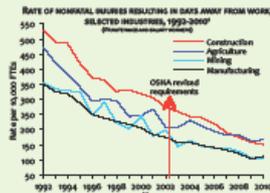


Figure reproduced from The Construction Chart Book

BOLI PARTNERSHIP

The Bureau of Labor and Industries (BOLI) partnered with OHSU to develop an online nutrition training specifically designed for apprentices. Apprentices experience barriers to healthy eating including worksite location, limited budget, and cultural factors which can impact retention in the program.

RESEARCH OBJECTIVE

The objective is to evaluate the impact of the BOLI Nutrition Training on knowledge and to gather information on acceptability of this training in apprentices.

METHODS

RECRUITMENT

Training was administered to BOLI apprentices enrolled in skill-development classes. (N = 14)

PROCEDURE

30-min Survey (Table 1)

50-min Training

- Knowledge Pre-test
- Training
- Knowledge Post-test

Participants compensated \$25

DATA ANALYSIS

- Survey data was collected through SurveyGizmo
- Training data was gathered from c-TRAIN desktop version
- Data analyzed through Microsoft Excel and Stata

Table 1: Survey Items separated by topic

OVERVIEW OF SURVEY MEASUREMENTS	
General Health*	SF-12 general health questions
Diet*	Frequency of eating high fat and high sugar foods.
Nutrition*	National Cancer Institute nutrition screener
BMI*	Height and weight
Sleep	Sleep behavior for past month
Fatigue	Energy level for past month
Stress	Stress protection attitude and behavior
Substance use*	Substance use (alcohol, tobacco, drugs)
Exercise*	Physical activity level
Pain	Injury and illness questionnaire
Work and Family	Work-family balance
Job Stress*	Job content questionnaire
Challenges	Barriers faced by apprentices
Safety Behavior*	Self-reported safety behavior at work
Behavior	Self-reported behavior and attitude (nutrition)

*Common measurements used by the Oregon Healthy Workplace Center

BOLI NUTRITION TRAINING

The computer-based training is tailored for apprentices in the trades and uses pictures and videos to engage the audience.

Topics include:

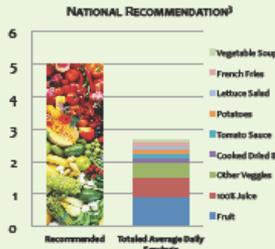
- Why Nutrition Matters
- Eating a Well-Balanced Diet
- Shopping on a Budget
- Healthy Packing and Snacking
- Hydration
- Food Safety



RESULTS

DEMOGRAPHICS AND WORK HISTORY	BOLI APPRENTICES (N=14)
Gender	
Male	100%
Age	
Mean Age	28 (SD = 7.2)
20-25	50%
26-30	29%
31-40	7%
40 or over	14%
Hispanic or Latino	
Yes	29%

AVERAGE DAILY FRUIT AND VEGETABLE INTAKE VS NATIONAL RECOMMENDATION⁵



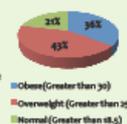
SELF-REPORTED GENERAL HEALTH



DIET OVERVIEW

- 50% consumed drinks with added sugar at least once a day
- 56% ate fast food at least once a week. Of those, 25% report eating fast food once a day or more.
- 57% reported drinking at least 5 cups of water a day

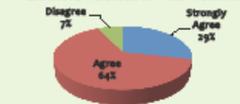
BMI DISTRIBUTION



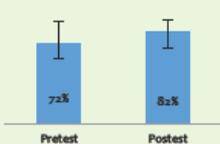
EDUCATION AND EMPLOYMENT	BOLI APPRENTICES (N=14)
Highest Grade	
Junior year of high school or below	7%
High School Graduate or GED	64%
1 or more years of college	29%
Apprenticeship	
Plumber	7%
Laborer	93%
Length of apprenticeship	
Less than 1 year	50%
1-2 years	43%
3 or more years	7%

RESULTS

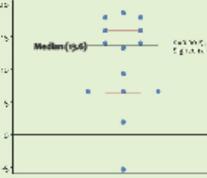
I WILL CHANGE ONE OR MORE BEHAVIORS BECAUSE OF THIS TRAINING



AVERAGE KNOWLEDGE PRE-TEST AND POST-TEST SCORES



PRE- TO POST-TEST PERCENTAGE POINT CHANGE



Median knowledge change 13.6 (95% CI: 6.4-15.9)

There was a significant difference between pre- and post-test scores. (p=0.0015, signed-rank test)

CONCLUSIONS AND DISCUSSION

- The training was effective in changing knowledge.
- All participants agree that the training will help them improve their health and would recommend the training to other apprentices. All but one agree that they will change one or more healthy eating behaviors because of the training.
- In follow-up interviews, the apprentices reported:
 - Things they learned, including not to leave food out in their car, how to shop for groceries, and how to read nutrition labels
 - They found the training enjoyable
 - The training was easy to understand
- The next step is a randomized control study to evaluate the effectiveness of this online training.
- Integrating health promotion training can impact success in retention.

ACKNOWLEDGEMENTS

Very special thanks to Angela Ramos, Penny Painter, Al DeVita, Kent Anger, Phil Davis, Mike Lasarev, Magali Blanco, Aviva Browning, Krista Leonard, and Hilary Nichols.

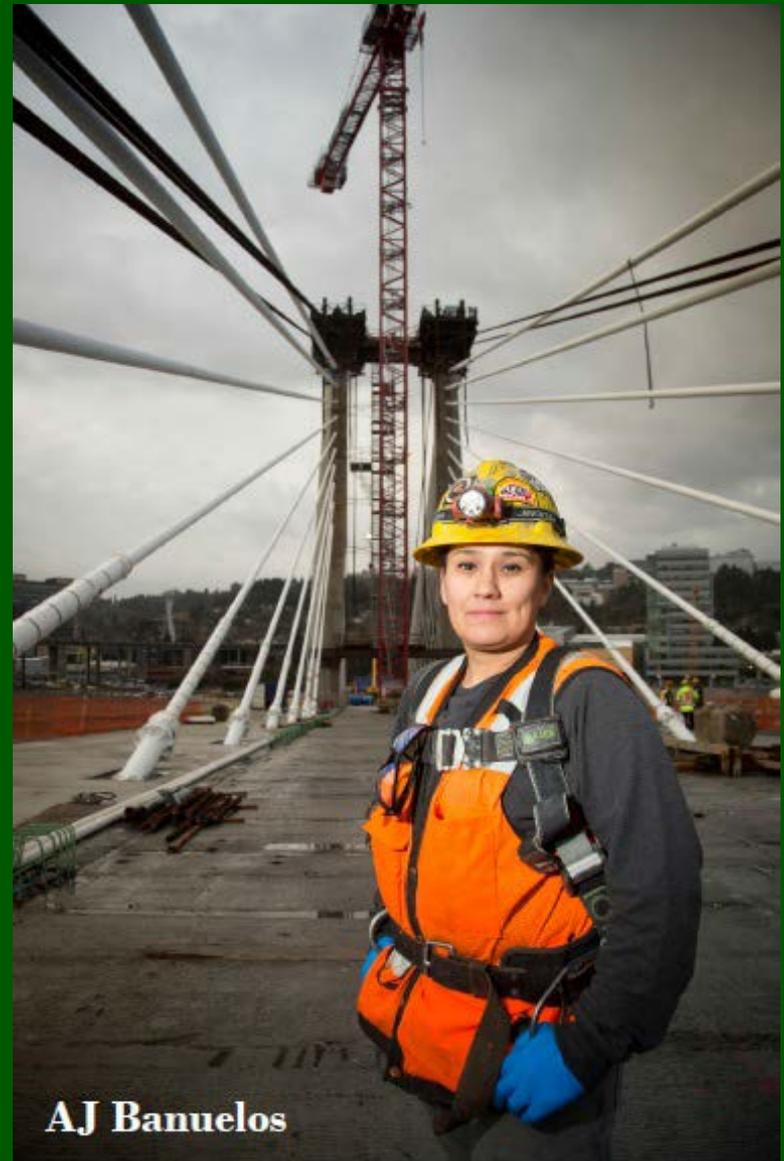
OHSU and Dr. Rohlman have a significant financial interest in Northwest Education Training and Assessment (or NwETA), a company that may have a commercial interest in the results of this research and technology. This potential individual and institutional conflict of interest has been reviewed and managed by OHSU.

Contract ID: BOLI-ODOT-2013-105
References available upon request

Current Apprentices

Retention Support

- Social meetings through pre-apprenticeship programs
 - journey worker guidance
 - advice and peer support from other apprentices
- Focused support from training center staff, union organizers, and stewards



A 2012 Report: Critical Support for Diverse Apprentices



The Oregon Department of Transportation and the Bureau of Labor and Industries launched their Highway Construction Workforce Development Program in 2011 to provide support for a diverse highway workforce.

This is the story of the young women and men who are receiving supportive services to stay in school and on the job and to succeed in completing their apprenticeship programs. Through this assistance, Oregon will have a more diverse, skilled, and productive highway construction workforce to build our way into the future.

8:21 minutes



BOLI
ODOT

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A 2012 Report

BOLI-ODOT HIGHWAY CONSTRUCTION WORKFORCE DEVELOPMENT PROGRAM



Critical support for diverse apprentices.



Accomplishments to Date

March 2011-March 2015

Total number served : **736 Apprentices**

Demographics

- Minority Female: 58 or 8%
- White Female: 132 or 18%
- Minority Male: 190 or 26%
- White Male: 356 or 48%

Accomplishments to Date

March 2011-March 2015

Total number served by Service Type:

- Lodging and Meals (Per Diem) for Out-of-Town Work: **174**
- Fuel Assistance: **250**
- Child Care: **68**
- Job Readiness (Tools, Work Clothes, PPE): **430**
- Mentoring and Social Support: **108**
- Pre-Apprenticeship Training: **194**

Accomplishments to Date

- Many of the findings in the following slides were outlined in a [2014 Research Report](#), *Building a More Diverse Skilled Workforce in the Highway Trades: Are Oregon's Current Efforts Working?*

By Sarah Burd-Sharps and Kristen Lewis (Measure of America) and Maura Kelly (Portland State University)

- Among respondents in a telephone survey who received ODOT-BOLI financial and social supports, large majorities reported that they found them **"very helpful"**
- Nearly three-quarters (72.5%) of service recipients reported that ODOT-BOLI supports allowed them to take jobs they otherwise would not have been able to take



Accomplishments to Date

- Women apprentices in eligible trades who received financial support services had a completion rate of almost **61%**, nearly twice the rate of women apprentices who did not receive any services (31.5%)
- Minority women apprentices registered to the union laborers apprenticeship program from 2009 to 2012 had a completion rate of **71%**, more than twice the rate of those registered in the same apprenticeship program from 2005 to 2008 (29%)

2014 Survey

The survey was conducted by the PSU Survey Research Lab between March 19th and March 31st, 2014. The final sample included 519 current and former apprentices in the heavy highway construction trades and achieved a response rate of 47.2%



Recommendations from 2014 Survey

Take action to
improve
workplace
culture

Improve access
to affordable,
reliable, high-
quality
childcare for
Oregon's low
income parents

Improve
awareness of
ODOT-BOLI
Program's
supportive
services





Recommendations from 2014 Survey

Expand recruiting activities to workers in their 20s and 30s (expand beyond youth focus)

Strengthen and expand pre-apprenticeship and mentoring programs statewide

Set up a resource center to help connect apprentices with other opportunities during out-of-work periods





Recommendations from 2014 Survey

Ensure all apprentices have equal opportunities for OJT

Explore ways to ensure that the limited funds available through the ODOT-BOLI Program are used most effectively

Improve data collection on past and current apprentices



Internal Performance Measures

ODOT/BOLI Highway Construction Workforce Development Program - Key Performance Measures

Policy Goal/Key Performance Measure	Previous Reporting Period	Current Reporting Period	Goal	Goal Met (within 2%)	Progress Made	Comments
Outreach and Recruitment - Registering a More Diverse Cohort of Apprentices in the Highway Construction Trades						
Percentage of newest cohort of apprentices in the highway construction trades (white women)	6.0%		8.0%			total goal for women is 10%
Percentage of newest cohort of apprentices in the highway construction trades (women of color)	1.5%		2.0%			total goal for women is 10%
Percentage of newest cohort of apprentices in the highway construction trades (men of color)	19.3%		20.6%			
Supportive Services - Awareness and Use of Supportive Services						
Percentage of survey repondents in eligible trades who are aware that ODOT-BOLI supportive services exist (white women)	40.9%		50.0%			
Percentage of survey repondents in eligible trades who are aware that ODOT-BOLI supportive services exist (men of color)	33.9%		50.0%			
Percentage of survey repondents in eligible trades who are aware that ODOT-BOLI supportive services exist (women of color)	28.6%		50.0%			
Percentage of active apprentices working in eligible trades who receive ODOT-BOLI financial supportive services (white women)	18.2%		25.0%			
Percentage of active apprentices working in eligible trades who receive ODOT-BOLI financial supportive services (men of color)	17.5%		25.0%			
Percentage of active apprentices working in eligible trades who receive ODOT-BOLI financial supportive services (women of color)	41.4%		50.0%			
Percentage of survey respondents participating in mentoring (white women)	27.3%		30.0%			
Percentage of survey respondents participating in mentoring (men of color)	9.2%		30.0%			
Percentage of survey respondents participating in mentoring (women of color)	20.7%		30.0%			
Workplace Culture - Experience of Discrimination or Harassment (goal is a reduction)						
Percentage of survey respondents who report experiencing some form of discrimination or harassment on the job (white women)	68.7%		17.1%			
Percentage of survey respondents who report experiencing some form of discrimination or harassment on the job (men of color)	35.1%		17.1%			
Percentage of survey respondents who report experiencing some form of discrimination or harassment on the job (women of color)	65.5%		17.1%			
Diversity of Journey Workforce - Credentialing Diverse Workers who Continue to Work in their Trade						
Completion Rates (white women)	52.0%		63.6%			
Completion Rates (men of color)	46.6%		63.6%			
Completion Rates (women of color)	54.5%		63.6%			
Percentage of survey repondents who completed their apprenticeship who are currently working in their trade as a journey worker (white women)	66.7%		86.5%			
Percentage of survey repondents who completed their apprenticeship who are currently working in their trade as a journey worker (men of color)	82.6%		86.5%			
Percentage of survey repondents who completed their apprenticeship who are currently working in their trade as a journey worker (women of color)	80.0%		86.5%			

New Services for 2015-2017

Request for Proposal #1:

Respectful Workplaces in Highway Construction

- RFP posted May 14, 2015 for \$200,000
- Services to Include:
 - Worksite Awareness
 - Worker Education and Organizational Training
 - Bystander Training
 - Opportunities for Voice
 - Social Support
 - Cultural Competency



New Services for 2015-2017

Request for Proposal #2:

- Retention Services for Disadvantaged Apprentices
 - RFP to be posted Summer 2015 for \$100,000
 - Services to Include:
 - Sponsoring Pre-Apprentice Slots for Disadvantaged Individuals
 - Providing Trades Intensive Classes for Disadvantaged Individuals
 - Establishing Peer Networks
 - Other Retention Services for Disadvantaged Apprentices
 - Completing Probationary Period
 - Managing Out-of-Work Periods
 - Creating Opportunities for Families with Children Under 8 years old
 - » Financial Counseling
 - » Assistance Finding High Quality Child Care
 - » Assistance Finding Parenting Support Services



Stakeholders

- Akana
- Laborers Training Trust
- Oregon Tradeswomen, Inc.
- Constructing Hope
- Portland YouthBuilders
- AGC - Associated General Contractors
- NWCC - Northwest College of Construction
- Cement Masons Union
- Carpenters Union
- PCC - Portland Community College
- PSU - Portland State University
- WSI – Work Systems, Inc.
- OHSU - Oregon Health & Science University
- Oregon Tribes
- High Schools

ODOT and BOLI Contacts

Angela Ramos, ODOT OCR

Manager, WDP/Field & Business Support

503-986-4353

Angela.M.Ramos@odot.state.or.us

Larry S. Williams, BOLI

Operations and Policy Analyst

971-673-0779

Larry.S.Williams@state.or.us

Thank You.

