

**Oregon Department of Transportation**  
**Report on the Use of Federal Funds to Increase Diversity and Prepare those Entering**  
**the Highway Construction Workforce (ORS 184.866)**

**Introduction**

Oregon law (ORS 184.866) requires ODOT to expend one-half of one percent up to an amount of \$2.1 million of the federal funds received each biennium by the Department of Transportation pursuant to 23 U.S.C. 140(b), to increase diversity in the highway construction workforce and prepare those interested in entering the highway construction workforce.

ORS 184.866 requires the department to submit a report to the Oregon Legislative Assembly by December 1 of each even-numbered year with an analysis of the results of the agency's efforts; the amount available to the department from federal funds for on-the-job training supportive services activities and the amount expended by the department for those activities; and the performance outcomes achieved from each activity, including the numbers of persons receiving services, training and employment.

**Background**

ODOT's Workforce Development Program was designed to help build a diverse, skilled construction workforce to meet the needs of the Oregon heavy-highway construction industry now and in the future. The program provides support to individuals who are either preparing to enter or have entered a trade associated with highway construction. Both basic needs support (such as transportation, childcare, medical expenses, work attire and tools) and training-related services (such as training, tuition, testing fees and safety gear) are available, with a goal of covering each of the supportive services described in ORS 184.866:

- (a) Pre-apprenticeship programs;
- (b) Pre-employment counseling;
- (c) Orientations on the highway construction industry;
- (d) Basic skills improvement classes;
- (e) Career counseling;
- (f) Remedial training;
- (g) Entry requirements for training programs;
- (h) Supportive services and assistance with transportation;
- (i) Child care and other special needs; and
- (j) Job site mentoring and retention services.

In the highway trades defined broadly to include electricians, plumbers and sheet metal workers as well as the trades specifically targeted for services from ODOT – carpenters, cement masons, ironworkers, laborers, operating engineers and painters, female apprentices and apprentices of color accounted for 16.5 percent of all new apprentices in 2005, a share that has risen to 26.9 percent in 2013, an increase of about 50 percent over the period 2005–2013. These recent trends are evidence of important progress in diversifying the workforce, although white males continue to comprise the overwhelming majority of new apprentices. Over the period 2005 to 2013, at least 73 percent of new apprentices each year have been white males.

While progress has been made on diversifying the pool of new entrants, completion of apprenticeships by women and minorities has been stuck in neutral. Women and minorities have relatively low completion rates compared to white males. This is consistent, year after year, and has not improved over time. Oregon Apprenticeship System (OAS) data analyzed for this report include records for apprentices in the 2005 to 2013 cohorts who were active between March 1st 2011 and January 31st 2014 and were not terminated with 0 credit hours. For their report, researchers analyzed a sample of apprentices from 2005 through 2013. Among apprentices in this sample of the OAS data who either completed or terminated apprenticeship agreements between early 2011 and early 2014, white men were the most likely to have finished successfully with 68.1 percent completing apprenticeships. Among white women, this figure was 54.7 percent and among men of color, 51.9 percent. Women of color were the only group more likely to not complete apprenticeships, with a completion rate of only 41.9 percent.

### **Analysis of the results of the department's activities to increase diversity in the highway construction trades**

In order to analyze the results of ODOT's activities to increase diversity, the agency contracted with Portland State University, Maura Kelly, sociology professor, who worked in conjunction with Measure of America (a project of the Social Science Research Council) to develop performance measures that will allow the agency to track the relative effectiveness of the program. Using both a survey of apprentices in highway-related construction trades and a statistical analysis of the relationship of financial supports with completion rates, the study found that:

- large majorities of apprentices receiving financial and social supports found them helpful;
- nearly three-quarters of service recipients (72.5 percent) reported that ODOT supports allowed them to take jobs they otherwise would not have been able to take; and
- female apprentices in eligible trades who received financial support services had a completion rate of almost 61 percent, nearly twice the rate of women apprentices who did not receive any services (31.5 percent).

It remains challenging to provide a complete measure of the program's effectiveness because many of the apprentices who have received support have not had sufficient time in apprenticeship training to be reasonably expected to complete.

With small numbers of apprentices having completed to date, sample sizes do not allow the kind of statistical models that will control for multiple variables at this time. Consequently, it is not yet possible to determine which of the range of services (or combination of services) are having the most impact on completions. It is clear however that females and minorities who receive services have patterns of retention that are more similar to that for white males.

Another way to consider the services offered through the ODOT program is to look at changes over time, e.g. to examine the proportion of each year's apprenticeship registrants who are still active, completed, or terminated by a certain date (in this case, September 30, 2014). Without regard for the breakdown by race and sex, there is evidence that apprentices receiving services in selected highway trades (i.e. apprentices registered to carpenter, cement mason, ironworker, laborer, operating engineer, and painter JATCs) are more likely to be still active or completed

than are those apprentices who have not received services. These data are not controlled by other factors that could also contribute to these results.

In evaluating these numbers, we find that those receiving services are more likely to complete an apprenticeship program (particularly for those registered in 2010 and 2011) and are more likely to remain active in an apprenticeship program (for those registered in 2012-2013). The apprentices registered from 2011 through 2013 have not had enough time to complete in most cases, as most programs expect apprentices to finish between two and five years of training before advancing to journey worker status.

### **Analysis of the results of the department's activities to prepare individuals for the highway construction trades**

Researchers found evidence that pre-apprenticeship programs funded by ODOT are having a positive impact on women, in particular, entering the trades. Their research revealed clearly that pre-apprenticeships are an effective conduit for women entrants into highway trade apprenticeships. Fully half of the female apprentices surveyed had participated in such a program.

As stated earlier, researchers have also found that female apprentices in eligible trades who received financial support services had a completion rate of almost 61 percent, nearly twice the rate of women apprentices who did not receive any services (31.5 percent), which is early evidence that the services provided to improve retention among apprentices is also achieving the goals of the program.

### **Analysis of Current Activities**

#### **a. Pre-apprenticeship programs**

ODOT is contracting for pre-apprenticeship services with two different approaches: trade-specific preparation and more general construction industry preparation that targets specific populations.

The trade-specific pre-apprenticeship design is intended to combine the existing pre-apprenticeship services with an added element of trades-intensive classes provided by local apprenticeship training centers that will result in either direct or facilitated entry into a particular apprenticeship program.

Specific outcomes/activities delivered during reporting period (non-inclusive):

- assessments of interest and aptitude, education about pathways, guidance in development of career plans, and training in the application process for potential applicants to Pacific Northwest Carpenters apprenticeship programs;
- financial support to pre-apprenticeship programs to prepare and refer graduates to Pacific Northwest Carpenters pre-apprenticeship training programs;
- pre-employment counseling and financial assistance to pre-apprentice graduates approved for direct entry;

- assessments of interest and aptitude, education about pathways, guidance in development of career plans, and training in the application process for potential applicants to cement mason and laborer apprenticeship programs;
- a task force on women in highway construction careers in ODOT region 5 (eastern Oregon);
- trade intensive classes for pre-apprenticeship graduates to enter either the cement mason or laborer apprenticeship program;
- pre-employment counseling and financial assistance to pre-apprentice graduates; and
- meetings, training, and social support for women and/or minority apprentices and/or apprentices who are disadvantaged and who are registered in the cement mason and laborer apprenticeship programs.

The population specific pre-apprenticeship design was intended to include events preceding the pre-apprenticeship training, such as construction career classes with youth, outreach, recruitment, screening, and case management. The focus is on serving a particular population of disadvantaged individuals.

Specific outcomes/activities delivered during reporting period (non-inclusive):

- career exploration activities through hands-on learning on a construction jobsite, small-group classroom learning, guest speakers, site visits, videos, and student/teacher/case management team meetings;
- services such as assessments of interest and aptitude, education about career pathways, guidance in the development of a career plan, training in how to apply for apprenticeship programs, and assistance to facilitate training and career transitions;
- financial support for Oregon State Apprenticeship and Training Council (OSATC)-approved pre-apprenticeship training through Portland Youthbuilders , Oregon Tradeswomen, Inc. (OTI) and Constructing Hope;
- additional services that are targeted to pre-apprentices who are young women (through the Portland Youthbuilders Women-in-Construction Education program), single parents, and/or parents of one or more pre-school children;
- services to applicants to and participants in contractors' pre-apprenticeship programs, including targeted outreach to African Americans and to those who are incarcerated or were formerly incarcerated; and
- pre-apprenticeship scholarships to sixteen individuals, including African Americans and to formerly incarcerated individuals, who need such assistance to complete the pre-apprenticeship training.

#### Persons Receiving Service

October 1, 2012 – September 30, 2013: 103

October 1, 2013 – September 30, 2014: 1183

#### **b. Pre-employment counseling**

Pre-employment counseling consists of the activities that pre-apprentice graduates and individuals on the apprentice lists of qualified applicants do to prepare them for their first apprentice work assignment. These services may include case management, building a work

portfolio, and interview practice.

Specific outcomes/activities delivered during reporting period (non-inclusive):

- guidance counseling to potential applicants;
- case management and pre-employment counseling for graduates of pre-apprenticeship programs and/or qualified applicants of an apprenticeship program in the five principal highway trades;
- financial assistance to improve job readiness of qualified applicants;
- orientation and career counseling to women and African American graduates from pre-apprenticeship programs;
- guidance and evaluation for local joint committees in highway construction trades (including at least the cement masons and operating engineers), including structured interviews and surveys to evaluate the impact of selection procedures, evaluation of training agent practices that may impact diversity, and apprentice reactions to re-employment policies and procedures;
- case management services to at least 18 graduates of the OTI pre-apprenticeship and/or Constructing Hope pre-apprenticeship programs;
- guidance to connect qualified applicants with appropriate survival and/or gateway jobs;
- support for pre-apprenticeship graduates who are laid off as an apprentice in a highway construction trade;
- instruction in skills that will help qualified applicants in highway construction trades to sustain themselves when they become new apprentices; and
- skills development training for graduates of pre-apprenticeship programs pursuing apprenticeship in union laborers and union cement mason programs.

#### Persons Receiving Service

October 1, 2012 – September 30, 2013: 155

October 1, 2013 – September 30, 2014: 183

#### **c. Orientations on the highway construction industry**

Orientations are comprised of activities that introduce individuals to the highway construction industry in general and the highway construction trades in particular. Activities include construction career camps and programs for middle and/or high school students and a variety of outreach activities about the projects and services available under the ODOT program.

Specific outcomes/activities delivered during reporting period (non-inclusive):

- two construction career camps for middle school aged girls and high school aged girls during summer 2013 in ODOT Region 1 (Portland metro area);
- programs for high school students from ODOT Region 1 to participate in three-day trainings at the Laborers Training Center in Corvallis;
- targeted pre-construction training (PCT) classes for pre-apprentice graduates interested in entering the laborer apprenticeship program;
- A list of ODOT engineering technology within the construction industry where there is an under-represented population and/or a demand for new or replacement workers; and
- A list of common core engineering technology skills, knowledge, and attributes appropriate for a high school career and technical education (CTE) program.

#### Persons Receiving Service

October 1, 2012 – September 30, 2013: 1389

October 1, 2013 – September 30, 2014: 374

#### **d. Basic skills improvement classes**

Basic skills classes are provided by pre-apprenticeship contractors on an as-needed basis. These classes have not been a major emphasis for the program during this period.

Specific outcomes/activities delivered during reporting period (non-inclusive):

- training in life skills for pre-apprentice graduates and apprentices working in a highway construction trade; and
- instruction in skills that will help qualified applicants in highway construction trades to sustain themselves when they become new apprentices.

#### Persons Receiving Service

October 1, 2012 – September 30, 2013: 3

October 1, 2013 – September 30, 2014: 71

#### **e. Career counseling**

The career counseling activities include establishing and maintaining relationships between pre-apprenticeship programs and helping professionals, such as school counselors, vocational counselors, and WorkSource staff. ODOT contracts with case managers who take referrals from these helping professionals and provide individuals with career guidance and assistance in preparing to enter a highway construction apprenticeship program.

Specific outcomes/activities delivered during reporting period (non-inclusive):

- activities for pre-apprentices to complete that will qualify them for direct entry into carpenter and laborer apprenticeship programs;
- services to pre-apprentice graduates who have applied to enter or have been registered to a local joint committee in a highway trade;
- training in assertiveness on the job site and keys to success in the highway construction industry;
- on-going case management for pre-apprentice graduates;
- culturally-competent and industry-specific training and leadership by qualified individuals at meetings and trainings;
- targeted retention services for pre-apprentice graduates who are apprentices in a highway construction trade;
- services for Workforce Sources, such as school counselors and Work Systems' staff;
- services to pre-apprentice graduates who have applied to enter or have been registered to a local joint committee in a highway trade;
- culturally-competent and industry-specific training and leadership by qualified individuals at meetings and trainings;

- career exploration activities through hands-on learning on a construction jobsite, small-group classroom learning, guest speakers, site visits, videos, and student/teacher/case management team meetings; and
- services such as assessments of interest and aptitude, education about career pathways, guidance in the development of a career plan, training in how to apply for apprenticeship programs, and assistance to facilitate training and career transitions.

Persons Receiving Service

October 1, 2012 – September 30, 2013: 44

July 1, 2013 – September 30, 2014: 151

**f. Remedial training**

Activities of remedial training, including classes in math and language skills needed to enter an apprenticeship program, are provided by pre-apprenticeship programs on an as-needed basis. These classes have not been a major emphasis for the program during this period.

Specific outcomes/activities delivered during reporting period (non-inclusive):

- training was provided to individuals on how to improve basic fundamental skills, including reading, writing and math, along with attitude and communication skills.

Persons Receiving Service

October 1, 2012 – September 30, 2013: 0

October 1, 2013 – September 30, 2014: 71

**g. Entry requirements for training programs**

Activities of entry requirements are provided for ODOT by Cooper Zietz and by pre-apprenticeship programs on an as-needed basis. This includes completing a “master application” with the information that will be needed to apply for an apprenticeship program in the highway trades, preparing the supporting documentation for applications, and practicing interviews.

Specific outcomes/activities delivered during reporting period (non-inclusive):

- case management and pre-employment counseling for graduates of pre-apprenticeship programs and/or qualified applicants of an apprenticeship program in the five principal highway trades.

Persons Receiving Service

October 1, 2012 – September 30, 2013: 0

October 1, 2013 – September 30, 2014: 71

**h. Supportive services and assistance with transportation**

Activities for transportation have been primarily in the form of direct financial assistance (or indirect financial assistance for lodging that is paid directly to the hotel) for fuel costs to get to and from work (and/or the required apprenticeship classes); lodging and/or per diem when work

and/or required classes are more than 60 miles from an apprentice's home and requires overnight lodging.

Specific outcomes/activities delivered during reporting period (non-inclusive):

- transportation services to current apprentices in the carpenter, cement mason, ironworker, union and non-union laborer, and operating engineer programs; and
- transportation services to current apprentices in other trades while they are working on ODOT jobs.

#### Persons Receiving Service

October 1, 2012 – September 30, 2013: 208

October 1, 2013 – September 30, 2014: 427

#### **i. Child care and other special needs**

Activities for child care and other special needs have been primarily in the form of indirect financial assistance (paid to the child care provider) to subsidize child care costs based on the rates established by the Employment Related Day Care program through the Department of Human Services for days on which the apprentice is working or attending classes.

Specific outcomes/activities delivered during reporting period (non-inclusive):

- child care services to current apprentices in the carpenter, cement mason, ironworker, union and non-union laborer, and operating engineer programs.

#### Persons Receiving Service

October 1, 2012 – September 30, 2013: 108

October 1, 2013 – September 30, 2014: 118

#### **j. Job site mentoring and retention services**

Activities for job site mentoring and retention services include social support groups, information and referral services, and direct (or indirect) financial assistance for the purchase of job readiness supplies, such as tools, work clothes, and personal protective equipment. In limited cases, some assistance has been provided for minor auto repairs on a vehicle used to get to work and the purchase of a basic cell phone to allow apprentices to accept dispatches to work.

Specific outcomes/activities delivered during reporting period (non-inclusive):

- culturally-competent and industry-specific training and leadership by qualified individuals at meetings and trainings;
- targeted retention services for pre-apprentice graduates who are apprentices in a highway construction trade;
- targeted retention services for African American men and women who are apprentices in a highway construction trade;
- services to pre-apprentice graduates who have applied to enter or have been registered to a local joint committee in a highway trade;

- training in assertiveness on the job and keys to success in the highway construction industry;
- one or more moderated electronic discussion forums;
- training in life skills for disadvantaged individuals who are apprentices working in a highway construction trade;
- culturally-competent and industry-specific training and leadership by qualified individuals at meetings and trainings;
- targeted retention services for African American men and women who are apprentices in a highway construction trade;
- job readiness funds for current apprentices in the carpenter, cement mason, ironworker, union and non-union laborer, operating engineer, and painter programs; and
- information and referral services.

### Persons Receiving Service

October 1, 2012 – September 30, 2013: 249

October 1, 2013 – September 30, 2014: 109

The “activities” are arranged into a range of *service types* that fall along a continuum based on where individuals are in the process of being prepared to enter the highway construction workforce as journey workers. The service types are directed toward providing (A) career exploration (including career education with youth and reaching adults in career transitions); (B) preparation of apprenticeship seekers (including technical assistance to local joint committees on selection procedures and technical assistance to contractors {training agents} to develop career ladders); (C) preparation of apprenticeship applicants and pre-apprentice graduates; and (D) support for registered apprentices.

### **Performance Outcomes**

The program reached participants across the state in large cities and rural communities, inspired youth and informed adults who might not otherwise have considered future careers in highway construction trades, prepared potential apprentice applicants to access the opportunities that continue to exist in difficult economic times, and supported apprentices trying to get to a first job or return to work after a long lay-off depleted their savings.

As individuals who are eligible for program services become better aware of the temporary assistance to address barriers to becoming successful journey workers in the highway construction trades and as research better identifies the type and magnitude of these barriers, the program will shift from showing great potential to showing great results for the state of Oregon.

### **Amount of Funds Available and Expended**

Oregon law requires ODOT to expend one-half of one percent up to \$2.1 million of the federal funds ODOT receives under to 23 U.S.C. 140(b) to increase diversity in the highway construction workforce and prepare individuals interested in entering the highway construction workforce.

**2011-2013 Biennium:**

Total Federal Funds Available for Activities: \$1,500,000

Total Amount Expended (October 1, 2012 – June 30, 2013): \$865,228

**2013-2015 Biennium:**

Total Federal Funds Available for Activities: \$2,100,000

Total Amount Expended July 1, 2013 through September 30, 2014: \$1,139,833

Anticipated expenditures for October 1, 2014 through June 30, 2015:

Career Exploration:	\$155,000
Apprenticeship Seekers (Pre-Apprenticeship):	\$251,000
Pre-Employment Counseling:	\$ 37,000
Current Apprentices:	\$391,797
Administration:	\$125,370
Total:	\$960,167

**Summary**

ODOT continues to make steady progress towards fulfilling the obligation of ORS 184.866 and providing a pathway to heavy highway trades careers for all Oregonians. Intergovernmental agreements, partnerships with other agencies and organizations and participation from a variety of groups and individuals are all evidence of the efforts to move this initiative forward.

The ODOT Highway Construction Workforce Development Program is a good investment for the state of Oregon and its people, especially given the current economic climate. It also represents a thoughtful, methodical approach to addressing some of the long-standing issues surrounding the historical under-representation of women and people of color in the construction trades. In the long run, it will not only serve those underrepresented populations well, but will provide the heavy highway industry with its next generation of workers.