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Evaluation of the Effect of Supportive Services on the Success of Apprentices in a Highway Trade

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REPORT OVERVIEW
**Evaluation of the Effect of Supportive Services
on the Success of Apprentices in a Highway Trade**
July 2013

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Project Description

This project evaluates the impact of a Bureau of Labor and Industry (BOLI) and Oregon Department of Transportation (ODOT) initiative that provides supportive services (i.e. child care subsidies; fuel assistance; support for overnight travel; tools, clothing, and protective equipment) to promote retention of apprentices in the highway trades, with particular concern for increasing the retention of women and people of color. This research project specifically focuses on the Knife River apprentice program. This is a useful case study as all apprentices in the program are employed by the same employer (most apprentice programs have multiple employers) and because approximately half of the current apprentices at Knife River are receiving supportive services from BOLI. The primary goal of this project is to evaluate the effect of supportive services on apprentice success in highway trades through a case study of apprentices at Knife River. The secondary goal is to assess the impact of the supportive services on the employer and the apprentice program at Knife River.

Overview of Methods

For background information about the implementation of the supportive services program, I interviewed two staff members of Cooper-Zietz Engineers Inc. Engineers Inc., the company administering the supportive services. I also interviewed two staff members of Knife River. There were a total of ten apprentices employed by Knife River between 2011 and 2013. I extended invitations to all ten to participate in the project and seven agreed to participate.

Overview of Findings

Challenges: Drawing on the findings of previous research, I identify some similarities and some differences in the challenges facing apprentices at Knife River compared to apprentices across the highway trades. Apprentices at Knife River largely reported that they did not experience financial challenges as apprentices. However, three of the seven apprentices I interviewed were receiving supportive services (which they reported alleviated some of the financial challenges) and some reported prevailing wage jobs early in their apprenticeships. Apprentices noted that the long, irregular hours (particularly during the summer) prevented them from spending much time with their families. Some experienced this work/family conflict as problematic, while others focused on the amount of time they spent with their families while unemployed over the winter. For apprentices with young children, it was necessary to have a partner who either did not work or who worked during the day (with children in childcare) and was available to care for the children during the evenings and weekends when the apprentice was working. Several female apprentices reported negative experiences at work related to their gender (e.g. being told women should not be working construction). These incidences went unreported and staff of Knife River reported being largely unaware of the challenges facing female apprentices on the job. Racial/ethnic minorities did not report discrimination or harassment at work. Overall, apprentices were very satisfied with the on-the-job training and mentoring.

Effectiveness of supportive services: Most apprentices at Knife River received the information about the supportive services program and several have received supportive services. Overall, apprentices receiving services have found them very useful in managing the financial challenges of being an apprentice. Receiving childcare alleviated some financial challenges for parents. Receiving services (particularly support for overnight travel) has allowed some apprentices to take jobs they might otherwise have had to turn down. Supportive services benefit the employer as they allow apprentices to be more available for more jobs. Apprentices successfully transitioned from using services to being self-sufficient (or were optimistic about their ability to do so) as their wages increased as they progressed through the program. There remains a need for some instruction on budgeting (for apprentices generally) and transitioning from supportive services (for apprentices receiving these services). Apprentices were very satisfied with the services they received and did not have many suggestions for improvement. There is some indication that in-home childcare would be beneficial to some apprentices.

Changes to workplace culture as a result of the supportive services program. The staff of Knife River reported minimal knowledge of apprentices' financial challenges. Staff noted that the long, irregular hours required may pose an issue for apprentices with family commitments but saw this as a fundamental to construction work (as noted above, apprentices seemed to share this view). Staff had minimal knowledge of the supportive services program but had the contact information to provide to apprentices upon request. Staff had generally a positive impression of the supportive services but expressed limited understanding of how it might help Knife River apprentices. Given this limited information about the program, staff did not perceive employees to be performing better because of the services received. Apprentices reported that other employees knew about the supportive services program and perceived overall supportive attitudes, although some jealousy. Overall, staff members' limited reports of the challenges facing apprentices and lack of knowledge about the goals of the supportive services program suggests the supportive services program has not (yet) made much significant change in workplace culture.

Overview of Recommendations

Supportive services. The supportive services program has been very successful and it is recommended that this program continue. Apprentices report that childcare subsidies help to alleviate the financial challenges of starting an apprenticeship. In-home childcare would be a desirable option for some apprentices. Fuel assistance and support for overnight travel were perceived as very helpful and allowed apprentices to take jobs they might otherwise have turned down. Support for tools, clothing, and PPE was not utilized by apprentices interviewed for this study. If changing the workplace culture to recognize the financial challenge and work/family conflict faced by apprentices is to become an important goal of the supportive services initiative, more education is needed among apprentice program staff, foremen, and journeymen.

General recommendations. There remain some fundamental changes that must occur in order for women and racial/ethnic minority apprentices to be successful in the trades. Apprenticeship programs must continue to work to recruit and retain women and people of color. Apprentice programs must work to eliminate hostile work environments, particularly for female apprentices, and must provide guidance to apprentices about how to handle problematic relationships at work. Mentoring must be provided to all apprentices (Knife River has been largely successful in this area). Assistance with budgeting and planning for being out of work would be a benefit to all apprentices.

FULL REPORT
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PROJECT DESCRIPTION

This project evaluates the impact of a Bureau of Labor and Industry (BOLI) and Oregon Department of Transportation (ODOT) initiative that provides supportive services (i.e. child care subsidies; fuel assistance; support for overnight travel; tools, clothing, and protective equipment) to promote retention of apprentices in the highway trades, with particular concern for increasing the retention of women and people of color. This research project specifically focuses on the Knife River apprentice program. This is a useful case study as all apprentices in the program are employed by the same employer (most apprentice programs have multiple employers) and because approximately half of the current apprentices at Knife River are receiving supportive services from BOLI. The primary goal of this project is to evaluate the effect of supportive services on apprentice success in highway trades through a case study of apprentices at Knife River. The secondary goal is to assess the impact of the supportive services on the employer and the apprentice program at Knife River.

OBJECTIVES

The primary goal of this project is to examine the question: What is the effect of receiving BOLI supportive services (i.e. child care subsidies, fuel assistance, support for overnight travel, clothing and protective equipment) on the success of apprentices in one highway trade apprenticeship program? The project will examine the challenges facing apprentices (with a specific focus on financial challenges) and will assess the ways in which supportive services can assist apprentices in progressing through their apprenticeship programs.

The secondary goals are to examine how the implementation of supportive services has affected the employer and the apprenticeship program. One of the secondary research questions will be: Do supportive services also result in benefits to the employer? For example, it may be that apprentices are seen as more reliable or productive since they started receiving services. Another secondary research question will be: Has there been a shift in the workplace culture around understanding work/family conflict or financial challenges facing apprentices? This project will assess how the introduction of supportive services may raise awareness of some of the financial challenges facing apprentices and the ways in which all workers may struggle with work/life challenges, such as obtaining high-quality affordable childcare.

BACKGROUND

Supportive Services

In 2011, The Bureau of Labor and Industry and the Oregon Department of Transportation partnered to offer supportive services to apprentices working in highway construction trades. The intention of this program is to increase the retention of apprentices, with particular concern for retention of women and people of color in apprenticeships, and a long term goal of increasing diversity in the highway construction journey workforce. As part of this project, BOLI/ODOT contracted with the company Cooper Zietz Engineers Inc. to roll out the supportive services. The specific services made available through this project include: fuel assistance; support for overnight travel (hotel and per diem); childcare subsidies; and tools, clothing, and personal protective equipment (PPE). In order to receive services, apprentices must be in an Oregon-registered heavy highway trade apprenticeship (or be an apprentice in another construction trade) and currently working on a highway or bridge project (or in training). Specific criteria were developed to determine eligibility for each type of service: for example, for lodging and per diem apprentices must be traveling and incurring overnight expenses for work or training. In addition to meeting these criteria, apprentices must also write a statement of need. Staff of Cooper Zietz Engineers Inc. indicated that only very rarely are apprentices who otherwise meet the criteria for receiving specific services denied because they fail to demonstrate need. Generally, apprentices are only denied when they fail to meet the program criteria. In order to roll out these services, Cooper Zietz Engineers Inc. did two sets of mailings with information about the supportive services. Staff of Cooper Zietz Engineers Inc. also visited ODOT job sites in order to pass out materials about the services. For each type of service, there is a maximum amount distributed to each apprentice: travel (\$1,000); lodging and per diem (\$2,000); daycare (\$6,000); and tools, clothing, and PPE (\$400).

Knife River

Knife River is a single employer apprentice program which trains apprentices to be light grade/paving equipment operators. Like all apprenticeships in Oregon, the Knife River apprenticeship requires both on the job training and classroom instruction. Unlike other programs, all apprentices work for a single employer. Currently, Knife River employs apprentices in three areas: Western Oregon, Metro Portland area, and Bend. Apprentices are assigned to a crew in their area and move from job to job with their crew. However, apprentices may be moved around on jobs, depending on the contractual requirements for apprentice hours on certain jobs. As a paving/grading operation, Knife River does a significant amount of highway and road work; however, they also do commercial projects (e.g. parking lots). The type of work that Knife River does is seasonal because crews can't pave in the rain or under (usually) forty degrees. Thus, apprentices are generally not working for several months in the winter. Some apprentices in the Portland Area have worked in the Knife River gravel pits over the winter but most Knife River apprentices do not work and file for unemployment over the winter months. The Knife River apprentice program schedules the classroom instruction at Northwest College of Construction for these months. During the months with favorable conditions for paving, all apprentices report working very consistently, from 40 to 90 hours per week.

METHODS

For background information about the implementation of the supportive services program, I interviewed two staff members of Cooper-Zietz Engineers Inc., the company administering the supportive services program. I also interviewed one staff member of Knife River. I had previously interviewed another staff member of Knife River in December 2011 and use information from that interview in this report (this staff member did not respond to my requests for a follow up interview for this project).

There were a total of ten apprentices employed by Knife River between 2011 and 2013. I extended invitations to all ten to participate in the project and seven agreed to participate. I interviewed four males who were currently apprentices (three receiving services, one not receiving services) and three female former apprentices (none had received services). Three current apprentices refused to be interviewed or did not respond to my request to participate in the study: one male (not receiving services) and two females (one receiving services, one not receiving services). Demographic information about the interview sample and the full population of Knife River Apprentices since 2011 is shown in table 1.

Table 1: Demographic Characteristics of Apprentices

	<i>Apprentices Interviewed</i>	<i>All Knife River Apprentices</i>
Current apprentice	57%	70%
Receiving services	43%	40%
Female	43%	50%
Race		
White	57%	60%
African American	14%	10%
Pacific Islander	14%	10%
Native American	14%	10%
Asian	0%	10%
Married	43%	--
Parent of child(ren) under 18	71%	--
Age (average)	35	32
N=	7	10

Note: "All Knife River Apprentices" include apprentices who have been in the program since 2011.

Interviews were conducted in person and via telephone. Interviews with apprentices were an average of 21 minutes long. Interviews with staff were an average of 27 minutes long. All participants gave informed consent to participate in the study and apprentices were given a \$50 gift card to Fred Meyer for their participation in the study.

The staff and apprenticeship interview data were analyzed using inductive coding techniques. I coded for theoretically important themes identified by the objectives of this project and themes identified in previous research (Kelly and Wilkinson 2012). I also examined emerging themes in the data related to the challenges of women and racial/ethnic minorities in the trades. Apprentice names and identifying information have been excluded to preserve confidentiality. Staff are identified only by their company (Cooper Zietz Engineers Inc. or Knife River). All names used in this report are pseudonyms.

FINDINGS

I focus first on apprentices' challenges: financial challenges, work/family conflict, discrimination and harassment based on gender, discrimination and harassment based on race/ethnicity, and mentoring. I next turn to an assessment of the impact of supportive services on the apprentices receiving the services. Finally, I examine whether or not there have been changes to workplace culture as a result of the supportive services program.

Challenges

Overview: Drawing on the findings of previous research, I identify some similarities and some differences in the challenges facing apprentices at Knife River compared to apprentices across the highway trades. Apprentices at Knife River largely reported that they did not experience financial challenges as apprentices. However, three of the seven apprentices I interviewed were receiving supportive services (which they reported alleviated some of the financial challenges) and some reported prevailing wage jobs early in their apprenticeships. Apprentices noted that the long, irregular hours (particularly during the summer) prevented them from spending much time with their families. Some experienced this work/family conflict as problematic, while others focused on the amount of time they spent with their families while unemployed over the winter. For apprentices with young children, it was necessary to have a partner who either did not work or who worked during the day (with children in childcare) and was available to care for the children during the evenings and weekends when the apprentice was working. Several female apprentices reported negative experiences at work related to their gender (e.g. being told women should not be working construction). These incidences went unreported and staff of Knife River reported being largely unaware of the challenges facing female apprentices on the job. Racial/ethnic minorities did not report discrimination or harassment at work. Overall, apprentices were very satisfied with the on-the-job training and mentoring.

Financial challenges

For apprentices in the highway trades, there are broadly two sets of financial challenges. The first is the financial challenges that apprentices have early in their programs. Some starting apprentices experience difficulties transitioning from unemployment or lower paying work to working as an apprentice. When starting an apprenticeship program, many apprentices do not have the savings required for some of the initial costs they must incur before they receive their first paycheck (e.g. money to pay for fuel to drive to and from job sites). Additionally, starting apprentices earn lower wages, which increase as they progress their apprenticeships. The second type of financial challenge that apprentices face is the periods of employment that are to be expected with a cyclical industry like construction. Apprentices may find it difficult to be unemployed for extended periods of time and apprentices may have challenges with startup costs when he or she returns to work after a period of unemployment. This second type of financial challenge is likely to diminish over time as apprentices earn more and are better able to plan financially for periods of unemployment. These two issues can be related as employment benefits are based on wages earned while the apprentice was working so lower wage rates and fewer hours could reduce both savings and unemployment in the first year.

Overall, the apprentices that I interviewed did not find being an apprentice financially challenging. However, it is notable that three of the seven apprentices I interviewed were receiving supportive services (which they found very helpful in alleviating financial challenges,

as described below) and several apprentices reported being on prevailing wage jobs early in their apprenticeships, which pay higher than usual wages.

Almost all the apprentices reported that they made more money working as apprentices than at jobs they had held prior to their apprenticeships. When asked if being an apprentice was financially challenging, most apprentices said no. As one apprentice stated:

“Yes and no [it was and was not financially difficult in the beginning]. My very first year all the jobs were city and county job which is prevailing wage... But if I’d have been working commercial jobs, I would have been hurting. Yes, the very beginning was tough. [But] we were really busy and a lot of city and county jobs, so it ended up working out.”
(Mike)

A few other apprentices noted that the beginning of their apprenticeship posed only minor financial challenges. As one apprentice stated

No, it’s not [financially difficult]. Even in my first year I was making the same as I did the year previous, so I didn’t have any new struggles, except for sometimes traveling to different spots. The jobs would be further away, so coming up with that money to get started was a little more difficult.” (Patrick)

This apprentice noted that he received fuel assistance through the supportive services program, which he found very helpful (see below).

Thus, overall apprentices at Knife River did not express very much concern about the financial challenges of starting an apprenticeship. Again, it is notable that three of these apprentices were receiving supportive services that likely alleviated some of the financial challenges. Further, three apprentices worked only one season and thus did not experience the winter unemployment and transition back to work in the spring.

In a previous study of apprenticeships in Oregon (Kelly and Wilkinson 2012), a lack of work was identified as one of the major challenges facing apprentices. For the apprentices at Knife River, all reported working very consistently without periods of unemployment for the months that highway and road projects were being done (late spring to fall). However, the paving and grading crews (including apprentices) were generally unemployed over the winter. Apprentices generally received unemployment for these months and a few (in the Portland metro area) worked in the pits. Thus, the specific financial challenge for apprentices at Knife River was how to financially plan for the period of unemployment over the winter. Of the four apprentices who worked for multiple years at Knife River, one reported working in the Knife River pits, one reported working for another company (which posed some issues with attending classes over the winter), and two reported relying on their savings and unemployment. When asked specifically about how they plan for the months of unemployment, apprentices who had worked multiple years for Knife River stated:

I definitely think about that a lot. With knowing that the income’s going to be a lot less during the winter, so I just put money away through the summer. I have a savings account and each check I put some money in and that’s my winter fund. (Patrick)

You just have to start saving. You actually get your first or a couple of big checks and then that’s when you start putting stuff aside for the winter. Because unemployment won’t cut it. [Laughs] (John)

Thus, these more advanced apprentices understand the cyclical nature of the work and have developed the necessary financial planning skills needed. The strategy described above works because apprentices at Knife River work consistently (and work very long hours) during the summer season. In some ways, the more predictable periods of unemployment experienced by apprentices at Knife River (compared to apprentices in other apprentice programs) make it easier to plan financially. It is also easier for apprentices to plan to attend their classroom training during the winter months (rather than having to negotiate taking time off from work for classes as apprentices in other trades have to do). As noted above, the further apprentices progress in the program, they make more money and they are better able to plan for periods of unemployment and the transition from unemployment back to work when projects start up again in the spring.

Work/family conflict

Given the type of work done by Knife River, the work schedule includes long and irregular hours. When asked if apprentices have any conflicts between their obligations to work and their obligations to their family, a staff member of Knife River responded this way:

I think in this industry you do in general. Not specific to apprentices, but we work a lot of hours in the summertime. And we'll work Saturdays or we'll work nights. And you might work nights one week and you might work days the next week, and that can be hard, regardless of who it is. Some of them struggle with that, especially if you have the other spouse at home that is working as well and you have a family. Again, that's hard for anybody, especially when you're rotating and it's not consistent, and your hours are never consistent. You don't get to work at 7:00 and leave at 5:00. It's always different. And so that can be hard, I can imagine, especially for people [with children].

Similarly, when asked if they felt conflict between their work and personal or family life, many apprentices noted that the long and often irregular hours made it difficult to make or keep commitments in their personal lives, particularly during the peak summer season. The following are some examples:

I didn't have a personal life when I was working there... You work from the moment it's light to the moment it's dark... But still you're so tired that when you get done that you just want to go home and sleep. You don't want to do anything. So I really didn't have much going on. (Nancy)

Well you know, during the summer, I mean, that's when the work's got [to] be done and so there's a lot of long hard days during that time of the year. So you do get a lot less family time during that time, you know, and so the kids, they will definitely say, you know, we miss you and can you stay home today? You know. [Laughs] And I say, "no, I can't do that. I got to go." But I do my best to try to make up for that on my days off and then definitely during the winter. (Patrick)

It's kind of hard, because...not *hard*, but I just got to deal with it. Because when I'm working, we've got the long hours and I can't make [the kids'] games or something. I can't make it to most of it. But I guess I make it up in the winter time when I have more time with them. (John)

Notable, apprentices focus on "making up" the time they miss with their families in the summer by spending more time with them in the winter. These apprentices consider the balance between work and family in the context of the full year.

When asked if there was a time when commitments in their personal lives made them miss time at work, a few apprentices reported occasional examples of short (one day) absences from work. Examples included taking a child to the doctor and attending a funeral. They noted that Knife River was flexible with allowing time off for these sorts of personal commitments.

While the apprenticeship requires near constant availability and long, irregular hours that interfered with commitments to family and personal lives, not all apprentices saw this as problematic. For example, one male apprentice (who reported working about 60 hours per week in the height of the season and whose wife was a stay at home mother to their one child) noted that it was “fairly easy” to balance commitments to his job and his family. He said:

I mean, the thing about it is, summer time comes along and I really don't get much time with my family. But it all makes up for it, because winter time I get the couple months off and I get to spend all kinds of time with them. So a lot of times during the summer time there's no planning going camping or anything like that. It's pretty much *you're working*. [Laughs] You got to work while you can or you ain't going to make no money (Mike).

Another apprentice (who reported working up to 90 hours a week and whose wife also worked while their two children were in daycare) said it was “pretty easy” to balance work and family. He elaborated: “It’s just like any other job I ever had. Because construction is up and down every now and then, and there’s long hours. But my wife and kids are very used to it, so it’s no trouble.” (Dan) Like the apprentices quoted earlier, these apprentices take a longer view of work/family balance and focus on the time they are able to spend with their families.

Given the long, irregular hours required by the Knife River apprentice program, apprentices with children are unlikely to be able to balance commitments to work and family unless they have either (1) a partner, family member(s) or friend(s) who are able to perform the majority of the childcare during the summer season or (2) paid childcare arrangements that can accommodate long and non-traditional working hours (i.e. nights and weekends). It seems unlikely that an apprentice with a child who relies only on paid childcare (without any assistance from family or friends) would be able or willing to sustain 60+ hours of being at work with a child in paid childcare. Apprentices who have a partner, family, or friends who perform childcare may also rely on paid childcare, for example, an apprentice may have a partner who works days and a child in paid childcare 9-5. The partner would then be available to be home with the child for the non-traditional hours worked by the apprentice. On jobs where apprentices work nights, it is preferable to maintain paid childcare during the day so that the apprentice can sleep during his or her off hours. A Cooper Zietz Engineers Inc. staff member noted that generally childcare is paid monthly and as long as the apprentice is working full time during that month, they childcare will be covered. However, the staff member noted there was one case in which a childcare provider billed hourly and so the staff member had to check the hours billed against the hours the apprentice worked. This is not ideal, as noted above, for parents working split shifts (one during the day, one during the night), having paid childcare is necessary so the parent working nights can sleep during the day.

Given the nature of the work done by apprentices at Knife River (and other apprentices working on highway and bridge projects with similarly seasonally dependent work), issues of work/family conflict must be evaluated in this unique context. Thus, while working 60 hour weeks makes it difficult for apprentices to have significant commitments to their families, they report that they prefer to work long hours when they can because they know they will be out of

work over the winter. While apprentices noted that their commitments to work prevented them from spending time with their families or having much of a personal life, they did not report being dissatisfied with their work schedule. Some apprentices noted that the cyclical nature of the work allowed them to spend time with their families in the winter months when they were not working.

Gender Discrimination and Harassment

A finding of previous research on apprenticeships in Oregon found that discrimination and harassment based on gender was a common experience of female apprentices (Kelly and Wilkinson 2012). Between 2011 to the present, there have been a total of ten apprentices at Knife River, five female and five male. Of the five female apprentices, three were let go after a single season (two in 2011 and one in 2012). Of the five male apprentices, all are still currently at Knife River. However, we cannot generalize from such a small number of individuals. In interviewing the three women who left the program, one chose to leave (because she found the work physically difficult) and two involuntarily left the program at the end of their first season.

One female apprentice, who left the program after finding it too physically demanding, reported positive experiences and relationships and did not report any negative experiences at work related to being female. A second woman (Sarah) reported primarily positive experiences and positive relationships in the program but was told there would be no work for the following season. The third (Nancy) reported a series of negative experiences and negative relationships at work and was told that there would not be work for her skills the following season. While a lack of work can be a problem throughout the construction industry, in apprenticeships that do not utilize a single employer (Knife River is the only single employer apprenticeship program), an apprentice would likely be placed on an “out of work” list and be hired by an employer when he or she rose to the top of the list (rather than being terminated from the apprentice program).

I asked Nancy to describe her experiences with her coworkers:

Interviewer: So thinking about the people that you worked with; the journeymen, the other workers, the foremen, were your experiences mostly positive or mostly negative?

Nancy: In all honesty, negative.

Interviewer: Tell me a little bit about some of the negative experiences you had.

Nancy: The foreman was really nice. He was really great. He was my favorite, out of everybody. And, I really liked him. But the paving crew themselves, were...they've already gotten their tight knit little community thing going on. They all have worked together for a long time. It's all a bunch of guys, which is fine. That doesn't bother me, but it seems to bother some of them. And, it sucked because they would tell me the wrong things to do. They would steer me the wrong way on purpose. And it wasn't just them. It was other people too. And, I was even told by some of them that the best thing is when they can see their fellow man fail. You know? And I thought that was really mean. I mean, why would you want to do that to somebody? But they did.

Interviewer: So what's an example someone telling you like the wrong thing to do?

Nancy: When they were paving, you had to go back and you have to roll it, and do a finishing roll on it so it looks really nice. And the guy told me a pattern to go in. Okay? Because there's a certain pattern to make it where it doesn't have creases and stuff. So I

was following that pattern, and then I come back and he'd tell me, "what were you doing that for? That's not how I told you to do it." And then he would change how he told me to do it again. So I was out there looking like an idiot because I was being told the wrong thing to do. But what are you going to do? Go and tell the boss that, "hey, this guy is telling me to do the wrong thing?"

This apprentice reported several examples where other workers played tricks on her in order to make her look bad. She perceived that the difficulties she had in the apprenticeship program were because she was female. Although her gender was not specifically referenced in all the examples of negative experiences, she also reported one specific example of sexism at work in the following example:

One of the workers, we kind of had a little bit of conflict. I was digging a hole and I guess I was taking too long for him, or something. I don't know. And he goes, "give me the shovel." And he goes, "let a man do a man's job." And I said, "keep your hands off the shovel, and get your own, and I'm doing just fine." You know? And he said something else and I said, "do you have a problem with women out here?" And he goes, "do you see any others?" You know, that kind of stuff. It was just ridiculous. (Nancy)

Another apprentice, Sarah who reported an overall positive experience but was asked to leave the program after one season, also reported a similar experience

I think that, for the most part men are more willing for women to come into the field now. I've encountered several men that don't think we should be out there. But, for the most part it's really... I mean, if a woman is willing to get out there and put herself out there to work at a hard career, the guys are accepting of them... There was another guy who was a foreman on a different project that came onto our project and he really didn't...he didn't appreciate that women were in the field... He just told me flat out, he was like, "I'm sorry that Knife River hired you into our apprenticeship but I don't believe women should be out here in this kind of field." And I was like, "I'm sorry you feel that way."... I didn't take it to heart, you know. A lot of guys don't think women should out there so I was just like, "I'm sorry." (Sarah)

In describing situations in which they felt discriminated against or harassed, these female apprentices chose to deal with problematic relationships on an individual level rather than report them. This is consistent with previous research that has found individualized strategies for dealing with problematic relationships that seem to be widespread in the trades (Kelly and Wilkinson 2012). Choosing to handle these issues on an individual level may be strategic on the part of apprentices who do not want to further stigmatize or alienate themselves from their coworkers; however, when these incidences go unaddressed by employers, it serves to perpetuate and normalize a hostile work environment.

One male apprentice I interviewed described an incident in which he perceived a female who was in charge of traffic control was experiencing challenges and was facing "a lot of stress" on a job site. Two male apprentices noted that women might have difficulty with "physical limitations" or "physical challenges." It is not clear if the female workers these men worked with actually had difficulty with the physical nature of the work or if it was the perception of these male apprentices that female workers were likely to have challenges with the physical work. However, for the most part, male apprentices indicated that if women were "hard workers" then they were accepted on the job site.

In interviews for this project, Knife River staff reported no knowledge of the sorts of challenges reported by Nancy and Sarah above. One Knife River staff member (interviewed in 2011) was asked about challenges facing women and primarily focused on the idea that some women are not aware of the degree to which the work will be physically demanding. This staff member also noted that women have an advantage in the apprenticeship program because they are more likely to be working due to workforce diversity requirements in ODOT contracts. Another Knife River staff member offered a bit more insight into the kinds of challenges women might face while at the same time downplaying these challenges. Specifically, when asked if women face challenges, this staff member stated:

I don't think so. Actually, one of our apprentices, she's not married to the foreman that she works for, obviously, but she's married to another foreman on a job. So, of course, no one's going to ever mess with her. [Laughs] I think you have to have a strong personality to work construction, in general. I don't think people are crude or rude or anything intentionally. But people say things. You never know. Not saying our employees particularly, but just people, truck drivers, who knows?... It's construction. And there's other trades that that happens too. But I've never heard of anybody ever [having] any difficulties with anybody or any problems. We've never had any like complaints from anybody or any of our apprentices. And our apprentice down in Eugene, our foremen say that she's better than most of the men. And, in that trade, that she works harder. And I don't know if that's being a woman and wanting to prove herself. And I can feel that sometimes you want to make sure that you're maybe just a step ahead of the next person. But she's awesome. And we've had multiple women through the program. One that's graduated last year, and it took her a little longer to get through the program but she is one of our main crew members... And she does awesome. And then we have another up North that is currently in the program. And we try to hire people that are respectful and aren't demeaning or anything like that. But the experience that I've had with all our foremen and all our crew members, they're great. Which is good in scenarios like that when you do have females out on the job. And especially in today's world, you can't just say what you want to say... But most of our employees have been with us a long time, and we have a good rapport with them. And I think that there's a good family and friend atmosphere here. Like I said, there's never been any complaints or problems ever.

In this response, this staff member highlights women who have been successful in the program and rejects the idea that women face any structural problems. However, she also notes that women may face “crude or rude” comments and may feel they have to work harder to prove themselves. She also emphasizes that there have been no reported issues. It is likely the case that female apprentices have not reported any problems to this staff member. Indeed, the female apprentices who talked in our interviews about experiencing specific issues at work stated that they chose not to report the issues but instead handle them on their own.

Racial Discrimination and Harassment

Racial/ethnic discrimination and harassment was also reported as a common experience in previous research (Kelly and Wilkinson 2012). However, none of the apprentices I interviewed reported that they believed that racial/ethnic minorities experienced any particular challenges on the job and none reported ever hearing any racist comments or negative comments about racial/ethnic minorities. Both the Knife River staff members I interviewed similarly reported there were no issues related to race and ethnicity among apprentices. It may be that Knife River

has cultivated better working conditions than other companies and apprenticeship programs, it may be that these particular apprentices have not experienced any issues, or it may be that these apprentices were unwilling to discuss experiences of racism with a (white female) interviewer.

As a side note, one Knife River staff member explicitly commented on race (and gender) in arguing that there was discrimination against white men:

Knife River staff: The big barrier I see in the apprenticeship program right now is ODOT's lack of letting a white male be an apprentice.

Interviewer: Because of the quotas that are written into the contracts?

Knife River staff: They won't accept them. I can't have a white male apprentice; they won't accept it.

Interviewer: Could you say what you mean by that?

Knife River staff: They'll deny them. If I submit "here's my apprentice for the job" and he's a white male, they will not accept him. They'll say you need a different apprentice. So I think that's one of the barriers because a lot of the younger generation that want to get into this trade. And one of the barriers is, we can hire that apprentice, put them through apprenticeship program, but he doesn't count for any on the job training for ODOT jobs. So then all of a sudden you've got to have another apprentice on that paving crew. So can you afford to have two of your seven people apprentices at the same time because one of the apprentices doesn't count? So I'd say the biggest barrier I see right now to a successful apprenticeship program is ODOT's barrier they are putting up on discriminating against the white male.

Currently, two of the seven apprentices at Knife River are white men, which does mark a significant departure of the racial/gender makeup of the construction workforce in the past. However, from the comments above, there is resistance to the changing demographics of the workforce and the specific ODOT policies that aim to shape the demographics of the workforce. It is not clear how the personal attitudes of this staff member as articulated in the interview may affect company policies/practices or individual apprentices.

Another staff member at Knife River articulated the company's goals for workforce diversity and some of the steps that were being taken to reach them. When asked "Is [increasing workforce diversity] good for the company? Or does it make it more difficult for the company," this staff member stated:

No. I mean, of course...I don't know...I mean, I guess I haven't worked for a lot of other companies. But, I do know that we have goals as a company to make sure that we have that diversity and are involved in different women's organizations and veterans' [organizations] and... I guess any protected class of any sort, of any of those organizations that you can outreach to. I don't know if there's... I don't know how to word it. But I don't think there's company requirements. I know that we have been audited as a company. And they look at your participation and such. And I don't know anything about that. But I just know that we have those goals... I feel that that's important. And I try to participate as much as I can. And mostly the women's stuff. Like I'm in Women in Construction group in Eugene. And I do the stuff through the Oregon Tradeswomen. They just had their job fair, and we had our booth there. And one of our community members just partnered up with Northwest College of Construction and put

on a week-long paving seminar and training at the Grand Ronde Indian Tribe. And, for instance, there's a youth build in Lebanon. And they're kind of a group with, I think, youth with disabilities. And we've done job shadowing and stuff here, and really talked about our apprenticeship program

Thus, Knife River is making efforts to recruit women and men of color through a variety of programs. However, this staff member is not fully able to articulate why workforce diversity goals may be important.

Mentoring

Previous research has identified a lack of mentoring as a serious issue in apprenticeships (Kelly and Wilkinson 2012). However, based on the interviews I conducted for this project, apprentices at Knife River are successfully being taught and mentored. One Knife River staff member commented:

Because part of the apprenticeship program, obviously, is getting somebody that doesn't know anything and they're put on a crew. And you have to have patience, obviously, and be a teacher. And you can't just be like, "oh, well, you don't know anything. Go stand there and watch." They have to be able to help teach and give them the opportunity. If they don't give them the opportunity then the program obviously doesn't work. And all of our foremen know that this a crucial part of our company... Most of our foremen have been here awhile and have all had apprentices on their crews, and they're all great. And I think all of our apprentices respect the foremen that they work for. And, as far as I know, there's no issues and all the relationships that they've all had has been good.

Apprentices noted that they had positive relationships with foremen and journeymen and were receiving high quality on-the-job training, as articulated in the following examples:

My foreman, the first year we were there, going from not being in the construction industry at all to jumping into it was kind of like, you know, I had never seen a paving machine or anything like that and he's like, oh, you're doing good. There ain't many hard workers like you anymore. I mean, you just keep doing what you're doing and you're going [to]...get far in this company. (Mike)

If you have questions, you can ask questions. They'll answer right away and they'll teach you how do it the right way. And they'll kind of watch you to see if you're doing it the right way. If not, they'll tell you. (John)

[The guys] were really willing to like help me train. Since I was an apprentice, I didn't really know much about operating, so they were very... They just spent time and didn't push me to do stuff immediately if I wasn't comfortable with it. And they always supported me. They always had a good attitude no matter what the circumstance was. (Sarah)

Some apprentices reported specific individuals (foremen and journeymen) who acted like mentors to them. Others indicated that a variety of people helped them learn the skills they needed for the trade.

Some apprentices noted that with the fast pace of the work, sometimes foremen and journeymen were unable to "slow down" long enough to teach apprentices new skills. However, the more advanced apprentices noted that over time they were taught the skills they needed. A few

apprentices also noted that the stressful nature of the work can occasionally lead to foremen or journeymen losing their tempers, as in the following account

Most of the time it's positive. But there are some...I guess the bad part. Because it's pretty much under stress. You've got the foremen there yelling at you cause you've got to get it done. Yeah. But, towards the end of the shift, the foreman, he comes up to you and he apologizes for losing his temper. And he'll explain, and so you kind of get the idea, why that's happening and stuff. So, I mean, that's the good thing. (John)

The only exception to the overall positive reports about mentoring was given by Nancy, described earlier as reporting multiple issues with gender based discrimination and harassment at work. I asked her about her experiences with training and mentoring:

Interviewer: How easy or difficult was it for you to get the experience and skills that you needed?

Nancy: Difficult... A lot of times I was given the shit jobs. You know what I mean? The no brainers. You know, put on a backpack and go blow this stuff off, that kind of stuff. And so that kind of...You know, but I did it. I did get a lot of experience on the rollers and stuff like that, but I didn't get told what to do on the rollers, which was odd. They would just throw me on the rollers like I should know what to do. Well, I'm an apprentice here people. I have no clue what to do. So there was some people that would clue me in on how to do things right. And then it just takes practice. But, you don't know until...I mean, pretty much I didn't know if I was doing something wrong until I did it...

Interviewer: Was there any one that acted like a mentor to you on the jobsite?

Nancy: The only one was on the first paving...or, the first grading crew that I was on. He did. He did. He took his time. [But] when I screwed up on the paving part, I didn't know that I screwed up. And nobody else told me, except for one of the other coworkers. You know, came up and said, "hey Nancy, you did this and this is how you should do it." And I would have never known. Everybody else would just stand around and talk about all that shit that I'd done wrong, instead of telling me about it. But there was one guy. But not the person that should have been doing it.

Previous research found that apprentices were often given low-skill repetitive work rather than being trained in the skills of the trade; women were particularly likely to report this experience (Kelly and Wilkinson 2012). However, with the exception of the above account, Knife River seems to be largely successful in providing high quality on the job training.

Effectiveness of supportive services

Overview: Most apprentices at Knife River received the information about the supportive services program and several have received supportive services. Overall, apprentices receiving services have found them very useful in managing the financial challenges of being an apprentice. Receiving childcare alleviated some financial challenges for parents. Receiving services (particularly support for overnight travel) has allowed some apprentices to take jobs they might otherwise have had to turn down. Supportive services benefit the employer as they allow apprentices to be more available for more jobs. Apprentices successfully transitioned from using services to being self-sufficient (or were optimistic about their ability to do so) as their wages increased as they progressed through the program. There remains a need for some

instruction on budgeting (for apprentices generally) and transitioning from supportive services (for apprentices receiving these services). Apprentices were very satisfied with the services they received and did not have many suggestions for improvement. There is some indication that in-home childcare would be beneficial to some apprentices.

Awareness of availability of supportive services

Overall, Cooper Zietz Engineers Inc. has been successful in making apprentices at Knife River aware of the support services program. Five of the seven apprentices I interviewed were aware of the program and three of the seven apprentices I interviewed were receiving services (an additional apprentice at Knife River was also receiving services but did not respond to my request to be interviewed). Of the four apprentices that I interviewed who were not receiving services, one reported not needing them, one reported calling for information and finding out she was not eligible (she was traveling less than 60 miles for work and thus was not eligible for fuel assistance), and two had not heard of the program. The two who had not heard of the program reported that they would probably not have needed it. The two that were aware of the program had left after just one season.

Effectiveness of supportive services

The three apprentices receiving services found them very helpful. They reported as follows:

[The supportive services have been] really helpful...Well, you're not working at all during the wintertime, so I mean, for me, the classes that I'm going to are at NWCC, which is in Portland and that's three and a half hours for me. So, I mean, that's quite a ways just in gas money up there and back. And the company pays for the hotel room. But, I mean, just in gas money going out there and back, it's...I mean, that's quite a bit of money. (Mike, using fuel assistance)

Oh, it was great. It was great. Yeah. It actually helped a lot. (John, using childcare, travel, and fuel assistance)

Yeah, I thought it would be a great help. You know, money was tight and sometimes it was difficult to budget. And how am I going to come up with the money to do this or to do that, and really having a hard time trying to figure out, well, you know, the kids got to be in daycare, you know, I've got to get to work. Daycare is going to be expensive, so when I found out they offered help for that I was really appreciative of it. And I was all over it because I knew that that would give me peace of mind and take a lot of the pressure off of having to come up with the financial burden. (Patrick, using childcare and fuel assistance)

When asked what they would do if they were not receiving these services, the apprentices stated:

Well, I'd definitely be hurting. I mean, come winter time I'm not making much money so I'd definitely, you know, be hurting for money. (Mike)

I probably would still have to do my job and also I have to find a way to do it, I guess. You know, find a better...find a way to pay the childcare. And I'd just probably have to get help from my family or something. (John)

I probably would have had to go without some things, as far as at home in personal life, just to financially be able to afford the important things, the necessary things. And no

boss likes somebody that says “no.” So it definitely helped me to say “yes” and have my boss be happy that I was willing to go when and wherever he needed me to. (Patrick)

A goal of the supportive services is to allow apprentices to take jobs they might otherwise turn down and to stay on jobs that they might otherwise have to leave. As indicated by Patrick above, apprentices are aware that they should do their best to take any job offered and the supportive services increase apprentices’ ability to do so. In my interview with the Cooper Zietz Engineers Inc. staff member who has the most direct contact with apprentices, the staff member reported that apprentices found the services very helpful on both these counts:

Interviewer: Do you think that these services allow apprentices to take jobs that they otherwise couldn’t take?

Cooper Zietz Engineers Inc. staff: Absolutely, because I’ve had people who once they heard about these services go, “you know what, just last week I turned down a dispatch because I couldn’t travel. I didn’t have the money.” And I go, “gosh, don’t turn down dispatches.”

Interviewer: Similarly, do you think it allows people to stay on the job or stay in the program when they might otherwise drop out?

Cooper Zietz Engineers Inc. staff: Yes, particularly when they are incurring those overnight stays, when they’re having to work out of town. Absolutely.

Apprentices I interviewed also said that supportive services allowed them to take jobs they might otherwise have turned down:

It actually made it a lot easier, sitting on jobs, working out of town, and stuff. So it’s just a big help. (John)

Oh, absolutely. Yeah, it was the out of town work. Just to start out the year, I’ve been not working all winter and so money’s definitely tight during that time of the year. And then just the first job of the year that we had was out of town, you know. Hour and a half one way, I believe, away from home, and we were working real long days and so it wasn’t feasible to come home every night. And so without the help to help pay for the hotel, it would have been a real struggle. I don’t know if I would have been able to do it. (Patrick)

The ability to take jobs they might otherwise turn down and stay on jobs they might otherwise have to leave clearly contributes to individual apprentices’ success in their programs. However, there is also a benefit to employers who need apprentices to be able to take the jobs offered to them, particularly when employers are contractually obligated to have apprentice hours on specific projects.

In the case of the three female apprentices who have left Knife River over the past few years and did not receive any supportive services, supportive services would not have made a difference for retention. One chose to leave the program because she did not care for the work and two were terminated.

Transitioning to self-sufficiency after using supportive services

One consideration in implementing the supportive services program was how apprentices will transition from using services to being self-sufficient. Apprentices reported on what they did or will do when they max out their supportive services:

I think now, the more and more you make, it'll make it a little bit easier. But still you're...I mean, it'll still kind of be a stress thing. But it's not...I mean, like I say, as more and more you're there the more and more you make (Mike)

Yeah, I do [think I don't need the services any more]. I think that as my pay has increased as the years have progressed that, you know, it becomes easier. I'm earning more money each year, and so you can...yeah, I feel more comfortable. I feel like I've put myself in a position through the apprenticeship program that now, you know, I've got a career that I can make good money in and I don't really have the financial struggle I did when I first started. (Patrick)

Patrick went on to note that he stopped using the childcare subsidy before he met the maximum: "The daycare, I haven't had to need the assistance so far [this year] and so I thought that I'd just leave that money in there for the next person that needs it." Another apprentice reported on the transition to paying for childcare:

John: Actually, I maxed out my childcare... two years ago. But, I still have some lodging left and mileage.

Interviewer: And now that you've maxed it out, are you able to make things work and get the childcare you need?

John: Yes. Yes.

Thus, among the three apprentices receiving services I interviewed, the apprentices reported either successfully transitioning from using services or felt optimistic about their ability to transition once they maxed out the services.

Although these apprentices are faring well, others may have difficulty transitioning off of the supportive services. One Cooper Zietz Engineers Inc. staff member commented on her efforts to implement a budget class to prepare apprentices receiving services for the transition:

We require apprentices, particularly people who are receiving daycare, to go through a budget class. What I was concerned about when we started this program is that we're giving them this money, especially daycare, but not preparing them for when that money ends. So I developed a budget class so that we could talk about coming up with a spending plan. Let's look at making a savings, paying off debt, so that when this funding ends that you'll be in a good place. It is in our contract [that they are required to go to the budget class]. We do state in the agreement form. We do talk about when I talk to them. What is hard is actually get them here. We don't have any kind of recourse if they don't show up. I have about five people that have been receiving daycare for the last six months that I have set up two budget classes and they've not shown up. (Cooper Zietz Engineers Inc. staff)

Budgeting is an essential skill for individuals seeking careers in the cyclical construction industry. While those involved in the supportive services program have particular concern for the apprentices receiving services, it seems this is a larger issue. It would be helpful to have this information implemented into the orientation materials for apprentice programs or into the classroom curriculum apprentices are required to complete.

Suggestions for changes to the supportive services program

The apprentices who received the services were overall very happy and did not offer many specific suggestions for improvements to the program. One apprentice suggested an increase in the amount allocated for travel and per diem:

I ran out of that on just the one job that I was on because we were there for over a month. And so the end of the time that I was there, I just brought my camping stuff and there was a camping area just up the road from where we were working and so I camped out the last week that I was there so I didn't have to come up with the hotel. So maybe a little bit more money in that regard would help. But like I said, I'm grateful for the services and the help that I do receive, and I think it's a great thing. (Patrick)

Given the proposed addition of in-home childcare to the supportive services program, I asked the apprentices who used childcare if they would be interested in having in-home childcare. John, who lives with his wife (who works days) and one child, stated “For me, I would prefer the childcare. Because your child actually gets to, you know, play with other kids and socialize. For me, I like it like that.” Patrick, who has two children living with him part time, says that he would be interested in in-home childcare

Yeah, I think so. Especially with weekends, sometimes there are weekends and nights because the day care that I use, sometimes they would close and everybody would have to be picked up by 5:30 or so. And, luckily, my daughter's mom got off in time to be able to do that. Had that not been the case it would have been a real struggle... And then a lot of times I'm working during the night. Working the graveyard shift. And so that posed a problem as well. And Saturdays throughout the summer are not uncommon, so most of your daycares are not going to be open on the weekends. So if there were some that was nights and weekends and something like that, I definitely would have used it.

Thus, it seems that in-home childcare would be a useful addition to existing childcare options for some apprentices. This may be particularly appealing to apprentices who do not have partners who are full time parents or have partners who work days (and are available for childcare during evenings and weekends). However, as previously noted, in order for single parents (or parents with shared custody) to be successful they must have some social support for caretaking (e.g. ex-partner, family, friends) as even in-home childcare is unlikely to be sufficient for covering all the long irregular hours worked by apprentices, particularly those working on highway projects that require night and weekend work.

Changes to workplace culture as a result of the supportive services program

Overview: The staff of Knife River reported minimal knowledge of apprentices' financial challenges. Staff noted that the long, irregular hours required may pose an issue for apprentices with family commitments but saw this as a fundamental to construction work (as noted above, apprentices seemed to share this view). Staff had minimal knowledge of the supportive services program but had the contact information to provide to apprentices upon request. Staff had generally a positive impression of the supportive services but expressed limited understanding of how it might help Knife River apprentices. Given this limited information about the program, staff did not perceive employees to be performing better because of the services received. Apprentices reported that other employees knew about the supportive services program and perceived overall supportive attitudes, although some jealousy. Overall, staff members' limited

reports of the challenges facing apprentices and lack of knowledge about the goals of the supportive services program suggests the supportive services program has not (yet) made much significant change in workplace culture.

Staff perceptions of apprentices' financial challenges

When asked about financial challenges that apprentices face, one Knife River staff member responded this way:

Interviewer: Do you think that apprentices find being an apprentice financially difficult, either at the start of the apprenticeship or the layoff periods?

Knife River staff: They don't really get laid off any differently than our normal employees. So I wouldn't say that it would be because of...

Interviewer: They get paid less, right, than the journeymen?

Knife River staff: Oh, right, depending on how many years they've been in it. So, yeah. I guess going into winter could be a little harder. The idea is that because they're working so much in the summer, they're saving their money for the winter. And with unemployment, you're able to make it, basically. I haven't heard... We have up in Metro, most of our apprentices got to work in the pits. We don't have any construction, but we have our pits that we have, our rough pits, all over up there. And we have them down here. Then we try to put them to work doing something in our pits. So at least they're still getting hours and getting paid, you know, a regular job, which is helpful.

Interviewer: So have you heard stories about apprentices having financial difficulties?

Knife River staff: When they heard about whatever program [BOLI supportive services] is out there right now for them to get some financial support, for if they work out of town or whatever, they've been contacted and they're taking part in that program. I know that there's been some apprentices that have called me really wanting to know about that information and others that I don't know that they used it or cared. So I'm sure there's apprentices out there that have.

The practice of hiring apprentices to work in the pits over the winter indicates that there is some institutional knowledge about the challenges of being unemployed in the winter. Interestingly, when the staff member was asked about an example of an apprentice facing a challenge, the example that came to mind was an apprentice asking about the BOLI supportive services. Thus, there is some indication that as a direct result of the implementation of this program, this staff member has been made more aware that apprentices may be facing challenges and may need some assistance. However, in the quote above (and elsewhere in the interview) this staff member emphasized that apprentices were not different from other employees and offered limited support for the belief that apprentices faced systematic financial challenges.

Staff perceptions of work/family conflict

When asked what Knife River does to help apprentices deal with work/family conflict, a staff member stated:

I think if there's a need that the employee needs to be there for their family for something, we're flexible. [But] if they needed to be somewhere at four o'clock every day, I don't think that would probably work. Because, like I was explaining the schedules

before, I don't think there's that kind of flexibility. But your occasional things... [if] we've been working every weekend and they have a family reunion or something, I think those things are flexible. And we try to make sure that we're not over-working our employees and [we] limit their hours. Actually, it's been a big topic in our company lately. You don't want to cut their hours too much. But [if] they work too many, it's unsafe and unhealthy. But the employees also look forward to working as much as they can because they've been off for many months. And they want to make as much money as they possibly can. So I don't know that we even run across too many issues [with people asking for time off], because most of these people just want the hours.

As noted in the discussion above, the apprentices' experiences were consistent with the points made by the staff member. The apprentices reported working long hours and many reported a preference for working these hours during the summer season. They also noted that if they needed time off for a specific occasion, their employer was flexible but that overall they were expected to be available 24/7 during the summer season depending on the needs of their employer.

Staff perceptions of supportive services

The Knife River staff member I interviewed for this project who has primary responsibility for routine interactions with apprentices had minimal knowledge of the supportive services program. This staff member was aware that it existed and had the contact information for Cooper Zietz Engineers Inc. which the staff member was able to give to apprentices. However, that was the extent of the staff member's engagement with program. I asked if this staff member thought the supportive services were useful. This staff member reported:

Absolutely. I mean, any kind of assistance that they can provide is probably good, especially if they have to travel. I can see especially for other trades. We don't have to buy a lot of tools. Boots would really be the only thing, and I don't know to what extent they provide clothing. But, our steel-toed boots are really the only thing that they have to provide themselves. But I'm sure other trades, carpenters or whatever, have to have tools where that would be extremely helpful. And then like we don't work too far out of town because we have our different groups. But we have been known to ask our apprentices to work... Like our Portland group will work, say, in The Dalles. So that's a ways. And if you're paying for your own fuel to get back and forth, I think that's where the assistance, the first time that we kind of got into [the supportive services] with our apprentices was [with fuel assistance]. They were driving and they were looking for some help with that.

This staff member has a positive impression of the supportive services but expresses limited knowledge of how it might help apprentices at Knife River. From these comments, this staff member does not believe Knife River apprentices have financial challenges that would lead them to apply for these supportive services.

When asked about the need for supportive services, another Knife River staff member (interviewed in 2011) commented on the difficulties that the long and irregular work hours can pose for parents.

Knife River staff: The child care one – one of our apprentices in Portland - that was an issue when we were talking to her is trying to figure out the unique work schedule we have.

Interviewer: Is it a lot of overnight work?

Knife River staff: It can be. You could go into a string of jobs where it's all night work for two months and then all of a sudden you're at a weekend only work; and then you're at a normal day work. So that poses some problems with child care.

This staff member was focused more on finding child care options for irregular work hours than on the cost of childcare. Thus, again, staff has a general understanding that long irregular work hours can pose challenges for balancing work and family. However, the financial challenges are not as immediately salient for this staff member.

Other employees' perceptions of supportive services

Journeyman and other employees of Knife River were not interviewed for this project; however, I asked apprentices who were receiving services what they thought other employees' perceptions of the supportive services program was. This allows for some understanding of the reception of this program in the Knife River company. Apprentices reported:

So I wouldn't say resentful, but I would say, you know, anybody that sees you getting money, they're going to go, why didn't I get that? (Mike)

They said that we're actually lucky, because when they were going through apprenticeship they didn't have that... Yeah, everybody says it's a good thing. Yeah. Because if you want the help, you have it. And, you know, if you don't need it, you don't have to use it. (John)

They would joke saying, "oh, you're lucky," or this or that and "I wish I could get that"... Some of the journeymen would definitely say that because that was something that they were having to come up with on their own. And my foreman actually said, you know, encouraged me to take advantage of the programs that were available. (Patrick)

I wanted to know if Patrick perceived the joking to indicate resentment on the part of journeymen:

Interviewer: Do you think that the journeymen get it that it's a little bit harder for apprentices just because they make less money?

Patrick: Yeah, I think they do get it. And everybody understands that there are perks to almost everything, so that was just one of the perks of being an apprentice.

From these apprentices' reports, at least some foremen and journeymen were aware of the supportive services program. Patrick's foreman encouraged him to utilize these services. Others reported that they experienced some comments or joking about receiving services, but did not perceive it to be mean spirited.

RECOMMENDATIONS

Many of the recommendations that follow from the findings of this report are similar to the recommendations given in an earlier report (Kelly and Wilkinson 2012). The recommendations provided here are based on previous research and the findings of the Knife River case study but have implications for all apprentice programs in the highway trades. I first provide recommendations specific to the supportive services and then discuss general recommendations relevant to the recruitment and retention of apprentices.

- **Recommendations for supportive services.** The findings of this report suggest that apprentices, particularly women and racial/ethnic minority apprentices are in need of supportive services in the form of fuel assistance, support for overnight travel, childcare, and tools/clothing/equipment I offer the following suggestions:
 - Continue to make apprentices aware of supportive services available. Providing information by mail has been an effective strategy.
 - Allocate resources to focus on providing fuel assistance and support for overnight travel, which may be particularly helpful forms of support for apprentices in the early period of their apprenticeships and when returning to work after being unemployed. This type of support is particularly likely to enable apprentices to take jobs they might otherwise turn down, which is a benefit to both the apprentice and the employer.
 - Provide childcare subsidies to apprentices who are able to secure stable paid childcare arrangements, while acknowledging that apprentices who are parents need a broad support system in place to assist with childcare, given the often long and irregular work hours. Given the great expense of childcare, providing childcare assistance is most likely to be the most beneficial to alleviate the overall financial challenges in the early period of apprenticeship for apprentices who are parents,
 - In evaluating hours worked and use of childcare, match the number of hours worked monthly (or weekly) with the hours of childcare. This is preferable to only providing subsidies for childcare for the actual hours the apprentices are at work as apprentices who work nights will need childcare during the day so they can sleep.
 - Provide assistance with tools, clothing, and protective equipment, usually at the start of the apprenticeship, although in allocating resources consider that some apprentice programs have minimal requirements for tools, clothing, and PPE and that this is the service that is currently most widely available as some assistance is offered by some employers and unions.
 - Continue to provide services on a need-based or by-request basis. While targeting women and people of color may have a more direct effect, there may be issues with perceptions of fairness and increased stigma for these marginalized groups if they were to be given priority in receiving services.
 - In order to create change in workplace culture, increase awareness about the challenges facing apprentices and the need for supportive services for apprentices among apprentice program staff, foremen, and journeymen.

- **General recommendations.** The findings of this report suggest a variety of possible interventions that may increase retention rates of women and racial/ethnic minorities in apprenticeship programs. I suggest the following:
 - Continue support for programs focusing on recruitment of women and people of color into the apprenticeship programs.
 - Ensure that employers work to prevent hostile work environments through education and monitoring as well as support female and racial/ethnic minority apprentices who experience harassment and discrimination.
 - Assist in developing programs to provide apprentices guidance on strategies for dealing with hostile work environments, including how to manage small incidences on an individual level as well as when to report incidences to supervisors/foremen, apprentice program staff, and/or union representatives (through pre-apprentice and/or apprentice programs).
 - Develop protocols and instruct apprentices on how to report minor and major incidences of discrimination and harassment, exploring reporting to apprentice program staff, employer staff (for multi-employer apprentice programs), or an external party such as an ombudsman.
 - Monitor apprentice program protocols for assigning jobs (both stated procedure and practice), ensuring that women and racial/ethnic minorities are not at a disadvantage.
 - Monitor compliance on contracts with diverse workforce goals in order to promote the employment of female and racial/ethnic minority apprentices.
 - Continue support for pre-apprenticeship programs that support women, racial/ethnic minorities, and first generation apprentices.
 - Explore options for programs promoting mentoring off the jobsite, such as mentoring and support by paid staff or mentoring by volunteers (one-on-one volunteer mentoring programs should be carefully evaluated before they are implemented as they are unlikely to be successful unless there is continued oversight by program staff as well as incentives for mentors to participate).
 - Assist existing programs that provide ongoing mentoring and support (such as OTI) to expand and increase visibility in the trades.
 - Ensure all apprentice programs provide apprentices with on-the-job mentoring by journeymen by implementing clear guidelines for mentoring, which includes being taught the varied skills of the trade.
 - Encourage apprentice programs to explore mandatory or optional rotation in job assignments to ensure apprentices have opportunities to learn varied skills.
 - Provide information on community and local/state/federal resources, particularly when apprentices experience unemployment and personal problems.
 - Provide classes on budgeting and personal finance, including a focus on how to prepare for periodic unemployment. This might be an optional or required class for apprentices receiving supportive services or it could be included in the classroom training.

REFERENCES

Kelly, Maura and Lindsey Wilkinson. 2012. "Apprenticeship Needs Assessment in Heavy Highway Construction Workforce" Final report submitted to Bureau of Labor and Industries/Oregon Department of Transportation.