MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO:	Commissioners Simpson, Helgeson, Mital, Brown and Carlson
FROM:	Mel Damewood, Chief Engineering and Operations Officer
DATE:	December 12, 2016
SUBJECT:	Veneta Contract
OBJECTIVE:	Information Only – Report Back from Board questions on 12/06/2016

Issue

At both the November 2nd and the December 6, 2016 Board meetings, water price proposals were discussed with the EWEB Board and Commissioners asked some questions regarding the proposed decrease for Veneta wholesale water prices and what the intent and conditions of the contract were at the time it was approved by the Board. General Manager Lawson requested Management provide a summary to the Board regarding the issue.

Background

In 2007 EWEB started discussions with the City of Veneta regarding wholesale water sales. After performing viability and feasibility studies, in early 2010 Veneta was awarded a grant to construct approximately 10 miles of pipeline. One of the grant conditions, required Veneta to have a wholesale water sales contract. In April 2010, the EWEB Board approved the contract, which was 3 years before EWEB would start delivering water to the City of Veneta.

EWEB Management provided several reasons for recommending that the Board approve the Veneta contract. First and foremost was that the contract helped EWEB in securing its existing water rights (rights and permits) by adding beneficial use of the water via wholesale demand. Management also wanted to create precedence in EWEB's right and authority to enter into wholesale agreements with other municipals without needing authorization from the City of Eugene. This was key to ensuring EWEB's future regionalization efforts could be forwarded if the Board chose to do so. Amid a recession and declining sales revenue, a long term contract that helped spread the high fixed costs of water production and delivery over a wider customer base would be beneficial for EWEB customer-owners. It should also be noted that EWEB had the production and delivery capacity within its existing system, so capitalization to enable this agreement on EWEB's behalf was minimal.

Discussion

In researching Board minutes the following was found:

At the March 23, 2010 Board Retreat Session:

Commissioner Ernst ascertained from Mr. Taylor that Veneta wanted 500,000 gallons per day, with anticipated revenues of approximately $300,000. She asked if this would meet the need to perfect the water right. Mr. Taylor responded that EWEB would need to utilize more water than the need Veneta would generate.

In response to a question from Vice President, General Manager Berggren stated that the contract cost for Veneta was $1.26 for 1,000 gallons wholesale and Veneta was responsible for the cost of the conveyance system.

At the April 10th, 2010 Board meeting, the Board approved the Wholesale contract with Veneta, with the following sales projections and conditions:

2.2 The Parties agree this Surplus Water Purchase Agreement obligates Veneta to purchase from EWEB an estimated 150 million gallons per year to serve its customers. ***Veneta agrees to purchase a minimum of 8 million gallons per month.*** *Veneta will construct a transmission line and other necessary improvements to deliver up to 4 million gallons per day ("mgd") to its system. EWEB will construct water system improvements from its existing water system to the Point of Delivery set forth in Section 10.1 at Greenhill Road and Highway 126. The Parties recognize that these water system improvements will be sized to meet EWEB customer demand plus the Veneta purchase of Surplus Water up to 4 mgd. Veneta agrees to reimburse EWEB for that proportionate cost of EWEB Water System improvements necessary to deliver up to 4 mgd to the Point of Delivery. Veneta may elect to pay its cost share by lump sum payment or through rates.*

> *2.2.1. By June 1st of each year, Veneta will forecast its demand for the period June 1 to May 31. EWEB commits to supply up to 4 mgd, subject to Article 2.3 and the terms of this Agreement.* ***The amounts nominated for this year will become the quantity factored into rate calculations and allocations.***

The projection of 500,000 gallons per day (about 15 million gallons per month) at the March 23, 2010 meeting would have resulted in approximately $230,000 annual revenue at $1.26 per gallon. The contract section 2.2 amount of 8 million gallons per month is about half of the amount discussed in March and would have generate approximately $120,000 annually for EWEB at the same price. EWEB and Veneta settled on the 8 million gallons per month based on the assumption that was the volume needed to pass through the long pipeline to maintain water quality.

The line was operational in September 2013 and in May 2014, the City of Veneta provided correspondence to EWEB in concert with the terms and conditions of the contract section 2.2.1, and reduced its projections to 6 million gallons per month (mpm). EWEB received subsequent emails stating the projected demands of 6 mpm, through 2018. During this period, water quality was maintained at the 6 mpm rate, thus the basis of the original 8 mgm minimum amount was not required.

The contract also stipulates the methodology and amount of margin as noted below:

4.1 Veneta will be charged under this Agreement equal to an amount estimated to be proportionate to its share of the cost to EWEB of providing water using standard cost-of service and ratemaking principles as described in Manual M-1, published by AWWA Manual of Water Supply Practices–M1. Principles of Water Rates, Fees and Charges. Fifth Edition. Denver: 2000. (hereafter "AWWA Manual M-1") and future Editions of

the Manual M-1. A cost-of-service allocation methodology will be used to allocate the Water Revenue Requirement as determined by the EWEB Board approved budget annually. The components used to determine the Water Revenue Requirements will be:

4.1.3. A return on investment of 10% or as otherwise directed by the EWEB Board not to exceed 10% will be charged on both the Operations and Maintenance Costs and the Capital Costs. It is the intent of EWEB to apply this rate of investment to all Surplus Water agreements or contracts.

After reading through the contract and the subsequent conditions, staff has acknowledged a contradiction between Sections 2.2 and 2.2.1. EWEB will begin an amendment process with the City to clarify the contract terms. To date, EWEB has charged the City of Veneta for the actual amounts used and has not asserted charging the stated minimum of 8 million gallons per month per Section 2.2, but has honored the language in 2.2.1.

Action

This memo is for information only, and no action is required. Please contact Mel Damewood @ 541-685-7145 or email at mel.damewood@eweb.org

Workforce Planning

Eugene Water and Electric Board

2016

Submitted by Lena Kostopulos, Chief Human Resources Officer
And EWEB's HR Team

Summary

In 2016, EWEB began the fundamental work which will serve as the informational foundation of a multi-phased and enterprise-wide workforce planning effort.

Workforce planning is a process which enables an organization to measure and compare current workforce (supply) to future workforce needs (demand). The process is also used to identify and address staffing implications resulting from strategic priorities and operational plans as well as regional and industry trends. EWEB's workforce planning effort will yield many benefits, two of which include documented succession and/or replacement plans for key roles and a framework from which to consider the structure, composition and capacity of EWEB's workforce. Such a framework will enable EWEB to reinforce its present workforce strengths with adapted employment practices and strategies, including potential alternatives to regular status EWEB employment, as a means to meet changing business demands.

The present and future state of the workforce in all aspects should be an area of on-going organizational focus to position EWEB to meet changing industry and employment conditions and to ensure it remains an attractive employer as competition for qualified workers increases. The General Manager's inclusion of "human resiliency" within EWEB's organizational resiliency strategy communicates the level of seriousness and leadership support required to make this workforce planning effort successful. To that end, the progress of workforce planning will be reported in the appropriate sections of the Board's quarterly dashboard report.

This document includes the completed Phase I, Current Workforce Report, which provides a snapshot of EWEB's present workforce, its demographic composition, the inventory of EWEB jobs and how the workforce is organized to perform the utility's work as we know it today. The report also provides considerable demographic and other employment data which could be the basis for goal setting with respect to workforce diversity or the development of programs to ensure bench strength in particular occupational categories.

To provide context, the Current Workforce Report is preceded by the following:

- A brief background discussion of EWEB's history relative to workforce planning
- An introduction to EWEB's current workforce planning process by way of a year-by-year general description of the work which will occur in each phase of the process
- A discussion of two foreseeable workforce disruption challenges

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Background

Industry Landscape & Employer Character

From an industry perspective and until recently, the utility sector had been long viewed as being very stable. Strong financial performance in the electric utility business was the overwhelming norm as threats from competitors, natural gas for example, were readily recognized and understood. Also, utility jobs in general were, and continue to be, considered relatively high-paying compared to other business sectors. These factors made utility work an attractive prospect for job seekers.

Similarly, public sector employment was also attractive to job seekers, owing to its history of job security and, while public sector jobs were not particularly distinguished as high-paying, they generally offered an array of generous benefits, including defined-benefit pension programs.

EWEB's industry affiliation coupled with its municipal charter as a public employer, yielded a relatively reliable supply of qualified workers. For years, those employer attributes combined with EWEB's strong financial performance and deep resources, set against a backdrop of a generally stable economy, provided little motivation for EWEB to consider a workforce strategy much beyond one of "replacement" as aging workers transitioned to retirement.

Unsurprisingly, EWEB's resulting workforce planning was conducted largely at the department or division level, aimed primarily at leadership positions and ensuring staffing levels which would enable operations already in place. The impetus for planning was based on generally predictable workforce disruption factors such as anticipated retirements. Proposed changes in workforce "strategies" were focused on the potential to leverage emerging technologies and changing generational workforce characteristics.

This approach to workforce management was a sufficient response to conditions at the time which remained relatively static until the recession and its effect on electric power markets created pressure on EWEB financials forcing cost reductions, including lay-offs in 2012 – something EWEB had not previously experienced.

On the broader horizon, electric utilities, the greater share of EWEB's business, began their collective recognition that they could not wait-out the effects of low gas prices and growing consumer pressures for lower-cost energy alternatives. In years past, EWEB O&M cost reductions and other financial measures were employed and thought of as a means to close short-term gaps. Post 2012, EWEB adopted cost containment and reduction as a generally continuing effort to begin addressing customer demands to limit rate increases.

The paradigm of greater financial conservatism was difficult for some employees to fully embrace but this persistent theme over the last 4 years began to shift EWEB's cultural thinking to a large degree. This was evidenced in the organization's changing posture toward large capital projects and in EWEB's financial strategies and results. However, apart from the 2012 lay-offs, this shift has been slower and less evident in the utility's collective attitude and actions regarding employment.

Workforce Planning Past

Coordinated workforce planning efforts appear to have been few and yielded limited results. Only one example of a workforce planning initiative rising to the level of attention by the Board of Commissioners can be found. The 2008 Strategic Staffing Plan included a recommended Board action to consider and approve a new EL Compensation and Benefits Policy. The Board adopted the proposed EL-4 policy directing EWEB to use regional comparator information as the basis of EWEB's market-based compensation and competitive benefits programs. That policy remains in effect and relevant today. The Board also approved additional budget in EWEB's hydrogeneration operations to hire replacement worker(s) in advance of anticipated retirements. This would enable the training of the newly-hired hydro operators prior to the exit of incumbent workers. However, this money appears to have been redirected to other priorities as the redundant hiring strategy was never implemented.

The 2008 report contains considerable employment data and includes a number of actions to be implemented between 2009 and 2011. These are departmentally localized, with most residing in the Human Resources Department. A few actions were implemented, including the deployment of an employee engagement survey and the revision of some employment policies. The Executive Management Team (EMT) in place at the time participated in an exercise to identify employees with high potential to assume leadership roles but outside of individual candidate enrollments in the Columbia Leadership Academy development course and its associated coaching program, there was no discernable follow-up. Unfortunately, the promotion rate of the candidates was not tracked. Over time, the certified coaches gradually retired or otherwise left the organization and the program was discontinued. Other efforts at the enterprise-wide level were also abandoned, potentially due to the anticipated and eventual change in the utility's leadership in 2010.

Many of the report's future projections, particularly those related to retirement trends and increasing general attrition rates, did not play out as expected, presumably due to the effects of the recession on retirement planning. Likewise, plans to significantly reduce FTE counts as a result of AMI were not realized as the direction of that project shifted in response to consumer resistance.

In 2014 and 2015, LT managers completed a planning exercise in anticipation of projected retirements. That information was intended to later serve as the basis for prioritized succession planning. As part of the exercise, managers and supervisors were encouraged to consider opportunities to reduce FTE and/or repurpose positions for new work. While some departments returned future staffing strategies which included FTE reductions and the redesign of job functions, many planned to refill vacated jobs on a 1:1 basis in their current form.

From an enterprise-wide perspective, the succession planning work did not take hold. It competed with a host of other priorities and received little from support from the General Manager, who announced his resignation shortly following succession planning discussions. A long-term and attrition-based reduction goal was discussed but without a clear objective, the LT could not support an FTE replacement target of anything less than 1.0 which remained throughout 2016.

Workforce Planning Future

We all now understand that financial pressures caused by industry shifts, consumer demands, and steadily increasing employment costs associated with rising and unpredictable health insurance rates have become a continuing fact of business. Recently, EWEB learned the total of its recalculated PERS liability and, while good and forward-thinking financial planning ensured EWEB's ability to respond to the increase, the burden remains and is sure to grow even more substantial. *(The matter of potential PERS reforms is discussed in the following Current Workforce Assessment section of this document.)* A disciplined approach to planning and an array of strategies are necessary to maximize the utility resources dedicated to its workforce.

Clearly, there is a continuing need for a worker replacement strategy to ensure continuity of operations as we know them today and a variety of constructive actions to enable this are underway. However, this approach alone will be insufficient to satisfy customer demand for rate stability. Further, a replacement approach to workforce management does little to position EWEB to meet long-term and somewhat unknown future demands. To that end, a clarified strategic direction is prompting EWEB's consideration of the resiliency of its human resources in equal weight to its physical infrastructure and financial condition.

EWEB has already begun its longer-term response to balance current operational needs against those of a changing future. General Manager Lawson's reorganization of the workforce structure to a supply chain and customer response model is one example. The smaller and more manageable Executive Team affords appropriate consideration of strategic objectives including those related to the workforce as a utility asset, leaving day-to-day operational responsibilities to their respective LT managers and supervisors.

Strategic process improvement initiatives and major projects with a renewed focus on customers are also underway. The outcomes of these initiatives and projects will drive workforce strategies that could dramatically alter or discontinue some job functions, potentially replacing them with entirely new ones requiring skills not currently present in EWEB's workforce. In preparation and almost immediately following his appointment, the General Manager introduced a change with respect to the accounting of authorized FTE. Where these were previously controlled within individual department/division level budgets, they are now managed on an enterprise-wide basis, requiring the Executive Team and LT managers to engage in discussion prior to filling vacancies or creating new positions. This approach better enables the dedication of FTE resources aligned with organizational priorities.

A strategy focused on resiliency in addition to continuity requires a multi-disciplined approach to workforce planning. While not a blueprint for the future, comprehensive workforce planning will align workforce requirements with the utility's near-and-long-term needs. Steady effort and progress in workforce planning, its implementation through 2018, and its continuous adjustment and refinement will engender an organizational culture mindful of the need to be agile and prudent as EWEB adapts to developing consumer expectations and ever-present financial restraints.

Foreseeable Challenges

To provide an initial look into the future, the following discussion describes two serious workforce disruptions risks. These are either beginning to occur now or are foreseeable in the near term. Others, including potential worker shortages in specialized jobs and competition for these qualified candidates, will be addressed throughout the planning process.

PERS

The greatest near-term workforce challenge could be a significant worker retirement disruption as a result of PERS reforms.

The State of Oregon's current budget deficit signals loudly that reforms to existing PERS benefits are shortly forthcoming, likely in the next 12 to 18 months. The potential effects of reforms could drive the early departure of a significant number of EWEB workers. A down-stream effect may be that a diminished pension benefit resulting from the reforms may impact EWEB's ability to attract and retain future workers as regional utilities, both public and private, compete for job candidates who are skilled to perform utility work.

The 2017 Legislative Session will provide answers with respect to what EWEB could expect in terms of sudden retirements. EWEB has reviewed a cursory legal opinion evaluating the legality of 15 potential reform proposals. We understand that additional proposals are being developed. Of those we have reviewed, some could materially reduce the projected monthly pension benefits of retirement-eligible workers.

At this writing, there no way to predict what the Legislature will decide, if anything. However, to frame the magnitude of possibilities, EWEB has spent some time looking at employee age and years of service data to craft a worst-case but plausible scenario. In this scenario, EWEB estimates that upwards of 100 employees might choose to retire in order to preserve higher monthly pension benefits. Further, most or even all of these exits could occur on the same day as employees would likely work until the last possible day, prior to the effective date of the reforms, for example, December 31st, 2017 if reforms were to become effective on January 1st, 2018.

If such a dramatic scenario were to occur, the activities contained in the 2017 phase of workforce planning will address operational continuity concerns, with the caveat that utility operations and work devoted to long-term strategic objectives may be restricted to activities deemed absolutely essential. *(A description of the preliminary planning work that has already occurred is included later in this report as succession planning and 2017 next steps are discussed.)*

Aging Workforce

There is growing concern about the potential for injuries in older workers. EWEB's average worker age is approximately 47 years. Those of us nearing or having already passed 47 years of age may consider that to be relatively young but, as employer averages go, this number represents an "older" workforce.

Aging workers, particularly those occupying EWEB's trade, labor and craft jobs, become more susceptible to injury with each passing year.

Of course, we are concerned about the health of EWEB workers but the impacts of worker injuries on EWEB operations is also a concern. EWEB's number of work-related injuries remains low but due to their nature, the duration is growing longer.

While this discussion focuses on occupational injuries, those occurring outside work are also impactful. For example, a serious shoulder injury will ground a worker regardless of whether the injury occurred at home or at work. Injury absences drive expenses in the form of project delays or the use of additional overtime to cover the work. The Board of Commissioners saw this in late 2016 when a $450,000 contract for an outside line crew was approved. The unplanned expense was necessary to cover a work capacity gap due to a combination of both work and non-work related injuries which benched the equivalent of an entire line crew.

EWEB trend data indicates injuries in older workers occur in the "sprains, strains, and serious musculoskeletal" category. These injuries are understood to have the longest projected recovery time, often compounded by surgical intervention following protracted remedial therapies and, they are the most costly.

Some injured workers never fully recover and will not be released to return their jobs. The worker's compensation process is complex and better discussed elsewhere but, after all available avenues with that process have been exhausted, the last step is referral to vocational rehabilitation, another very lengthy and expensive process.

In its long history, EWEB has never had a case escalate to vocational rehabilitation. Currently, three cases appear bound for that outcome, raising questions about what might be going on. Three concurrent cases cannot be called a "trend" and might be strictly related to age or simply just an unfortunate anomaly. Medical trend data correlates worker injury rate and recovery duration with age but the situation begs closer scrutiny to rule out or address additional causal factors. That study is underway.

EWEB information shows the strain, sprain and musculoskeletal category injuries occurring in the line, utility construction and, meter reading sections. Many are the result of years of repetitive motion, such as climbing, lifting or walking long distances and some are re-injury. Renewed examination of the ways this work is conducted has already begun to determine if there any new injury prevention measures that can be applied. EWEB has done considerable work on this front, including the study of body mechanics, the introduction of assistive tools and, ensuring that workers are outfitted with the latest and most effective protective gear. That work will continue.
However, we wonder if staff reductions may have gone too far in certain worker classifications and, if staffing levels could be a factor in repetitive motion injuries. For example, EWEB previously employed 8 lines crews. That number has gradually reduced to 5. Similar reductions occurred in meter-reading. Could distributing the work across fewer workers be increasing their exposure to injury hazards? Additional study will be required to make a determination. Depending on the outcome, staffing levels may need to be revisited.

Methodology and Introduction to EWEB's Multi-year Workforce Planning Effort-

Workforce planning methods are relatively standardized including the following components which EWEB's plan has broken into phases:

Phase I - Current Workforce Assessment (the work in 2016 and focus of this report)

The objective of this assessment is to describe the state of EWEB's current workforce by demographic and other pertinent standards, retention and other work behavior trends. Phase I also describes the results of current employment processes and practices related to the utility's ability to attract and retain a skilled workforce. These typically include recruiting experience and outcomes and the degree to which compensation, benefits and other employment programs are regionally competitive.

The report concludes with a brief overview of some of the preliminary work that is already underway in response to some immediate succession planning needs.

It should be understood that metric data and other information contained in the report are regularly updated, along with other HR process indicators, and may be expanded to include additional information as it becomes available or relevant to EWEB's objectives.

Phase II - Near-term Gap Analysis and Action Planning (2017 and early 2018)

This gap analysis requires the utility to identify critical roles either due to their leadership nature or their functional connection to key operational or strategic initiatives. It defines the skills and abilities necessary to be successful at entry into these roles. This is followed by the process of evaluating the skill-levels and qualifications of current workers and identifying potential successors. Once identified, development plans for successors will be designed to enable smooth transitions between exiting key workers and their replacements.

The General Manager has set a 2017 goal for Executives and LT managers to identify successors, create actionable succession plans for management, supervisory and other strategically or operationally key roles by year-end.

In the absence of viable successors, the Gap Analysis and Action Planning Phase work also includes identifying recruitment sources and developing strategies to attract fully-qualified replacements. This phase also calls for the creation of plans which could be alternatives to regular status EWEB employment for example, leveraging part-time or peak/seasonal workers, hiring contractors, and outsourcing or co-sourcing work historically done in-house. This would likely result in the intentional discontinuation of some EWEB functions and their associated work. To that end, the General Manager and Executive Team have recently adopted a worker replacement rate target of .07. It should be understood that this figure may actually rise above 1.0 temporarily as the transition of workers, the implementation of new systems and other adjustments occur.

Progress milestones in the 2017 workforce planning phase, the status of succession planning results and the replacement rate will be included in the quarterly Board Dashboard Report. Other pertinent employment trend information and workforce developments will also be included as necessary.

The gap analysis phase will also uncover and enable the prioritization of other factors which will present workforce challenges, projected shortages of qualified in occupational categories, for example. Action planning and the implementation of solutions will occur as necessary and practical in 2017 but, much of this work will take place in 2018 and beyond.

Phase III - Action Plan Implementation and Long-term Planning (2018 and beyond)

Phase III will be dedicated to continued action planning, the execution of plans and solutions, monitoring their progress and effectiveness and making adjustments necessary. In some aspects, this work becomes continual as the utility advances toward its long-term strategic objectives, particularly those requiring adaptations in services and product offerings.

Plan implementation will require enterprise-wide prioritization to enable the dedication of time and resources, including budgeting to fund any expenses associated with workforce strategies such as costs for worker training and education, the expansion of benefit programs to replace or supplement any which may have lost value from an attraction or retention standpoint, transitional hiring or contracted services, etc.

Beyond the tactics of implementing plans, significant shifts in EWEB's internal culture will be necessary. For example, EWEB's workforce has naturally come to expect that every job opportunity will posted, followed by a competitive selection process and, that internal candidates will be preferred even over better qualified external candidates. Conversely, some plans could result in more frequent use of direct candidate solicitation and appointment, even potentially extending to external candidates. Contracting and outsourcing strategies also represent a significant change in the way EWEB thinks about accomplishing work. Efficiencies gained from process improvements, will create an opportunity to redistribute duties through position redesign and could enable attrition-based elimination of positions. The result could be fewer authorized FTE or the genesis of entirely new departments or jobs designed to accomplish work not presently underway at EWEB. The use of a phased approach through 2018 and beyond, provides time for change management messaging and understanding to support cultural acceptance of these and other new practices.

This is an ambitious plan and the notion that it can all be fully accomplished by the end of 2018, overreaches what is practical. However, it is very reasonable to expect that prioritized work will be completed and much of the remaining work will in various states of completion and steadily progressing. In fact, by the time EWEB reaches this stage of workforce planning and development, the process becomes continual with milestones occurring with regularity.

The most important outcome to hope for is that EWEB's organizational expectations and accountabilities will become such that succession planning, forward thinking about the evolution of jobs, continual process improvement and, the use of new work management practices and alternatives become elemental and measured functions of management and supervisory performance. That understanding would do much to enable the effectiveness, efficiency and affordability of EWEB products and services now and in the future.

Phase I: Workforce Assessment Report

Current Workforce Profile

As of Q3 2016, EWEB has 204 distinct jobs and 503 employees. Employee count by represented and non-represented and by EWEB Divisions are represented in the tables below.

Employee Count by Represented/Non-represented

	Employee Count
Non-represented	342
Represented	161
Grand Total	**503**

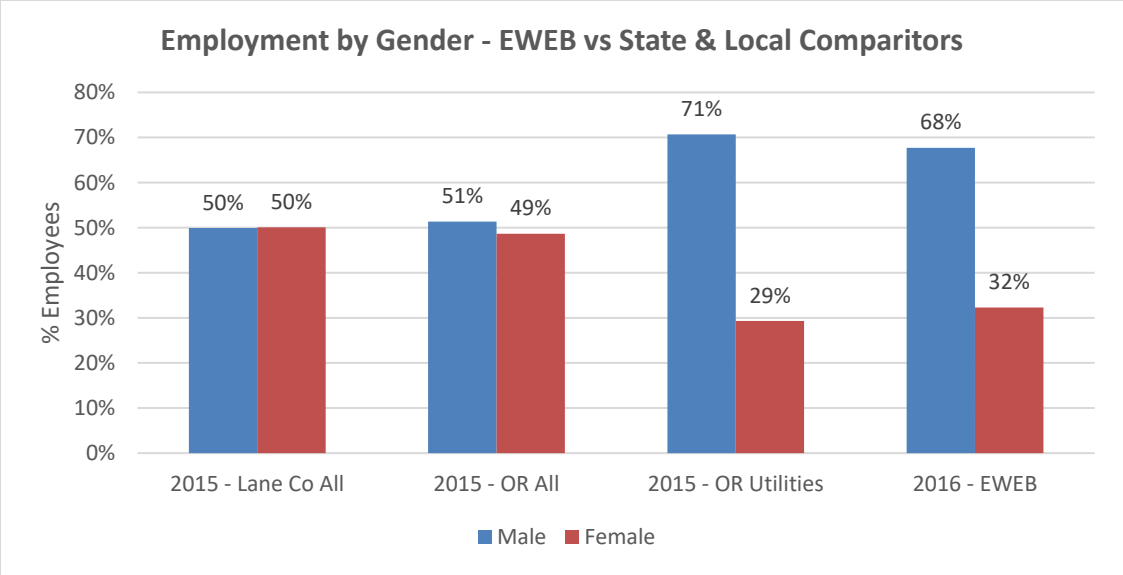
Employee County by EWEB Division

Division	Employee Count
Customer Service / EMS	92
Electric T&D Ops	99
Engineering	56
Environmental	13
Finance	39
Generation	29
GM	2
Human Resources	12
Information Systems	52
Power Planning	8
Public Affairs	9
Trading / Power Ops	14
Water Operations	78
Grand Total	**503**

Demographics

Gender

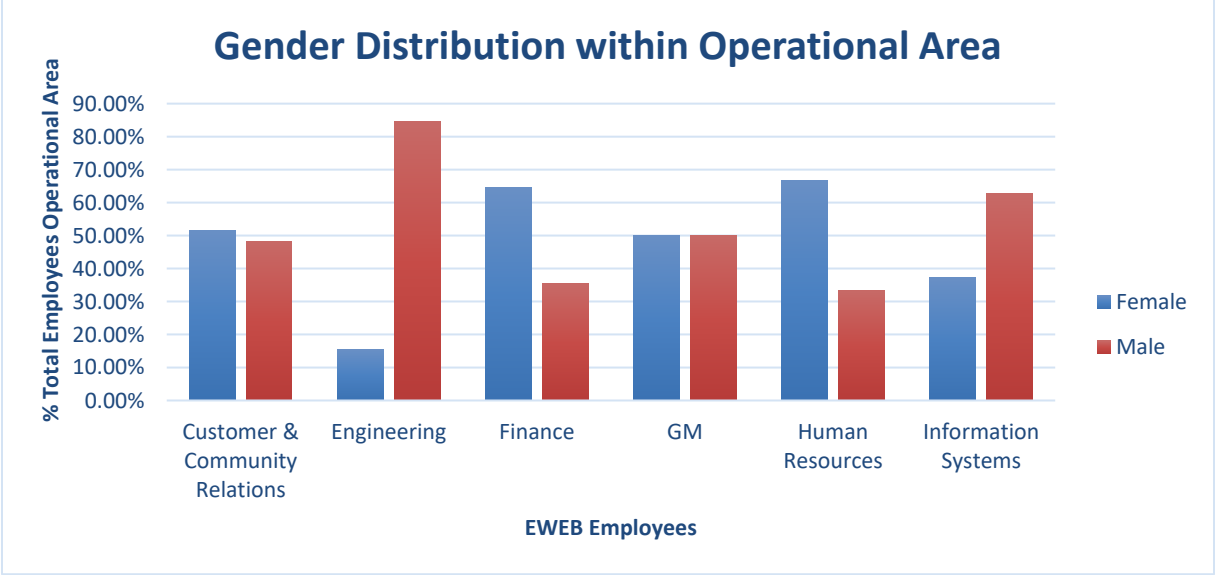
The chart below illustrates the percentage of male and female employees at EWEB in 2016 as compared to all of Lane County and all of Oregon, as well as to Oregon state utilities in 2015. EWEB is consistent with the statewide gender demographic for the utility industry. However, overall the employment profile for non-industry specific employment for gender falls below that of the Lane County and Oregon. EWEB continues to explore opportunities to bring women into a workforce traditionally dominated by men, however, this strategy may prove futile as the candidate pool of women in the trades continues to be scarce. A shift in effort may be to pursue women interested in STEM occupations.



Source: U.S. Census Bureau, Quarterly Workforce Indicators
Oregon Utilities includes both public and private sectors

Gender Distribution within Operational Area

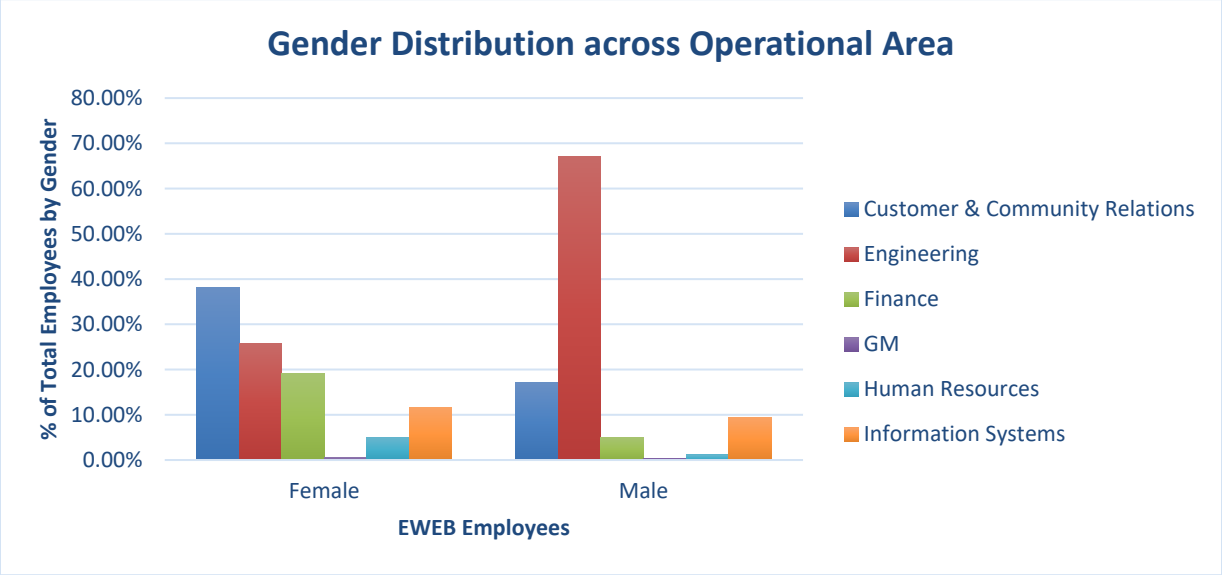
As expected, the proportion of male to female employees within each of EWEB's operational areas shows that women are heavily represented in Customer & Community Relations, Finance, and Human Resources. This is no surprise as women are historically represented strongly in these functions.



Gender Distribution across Operational Area

When looking at the distribution female employees across occupational areas at EWEB, Customer & Community Relations is primarily staffed with female employees, this division contains the Customer Service and Call Center work units. However, the Engineering work unit emerges as area with the second

highest percentage of all female employees. Although only 15% of employees in Engineering are female, these female Engineering workers represent 25% of EWEB's total female workforce.



Gender and Wage

The following table represents the level of pay grade for women at EWEB. While EWEB employs women at the Executive level, slightly more than half of the female workforce are in Administrative/Technical positions. Historically, men have dominated the utility industry in the trade, labor and crafts job functions while women have primarily held clerical and administrative roles. Appendix A provides a list of EWEB jobs by salary range.

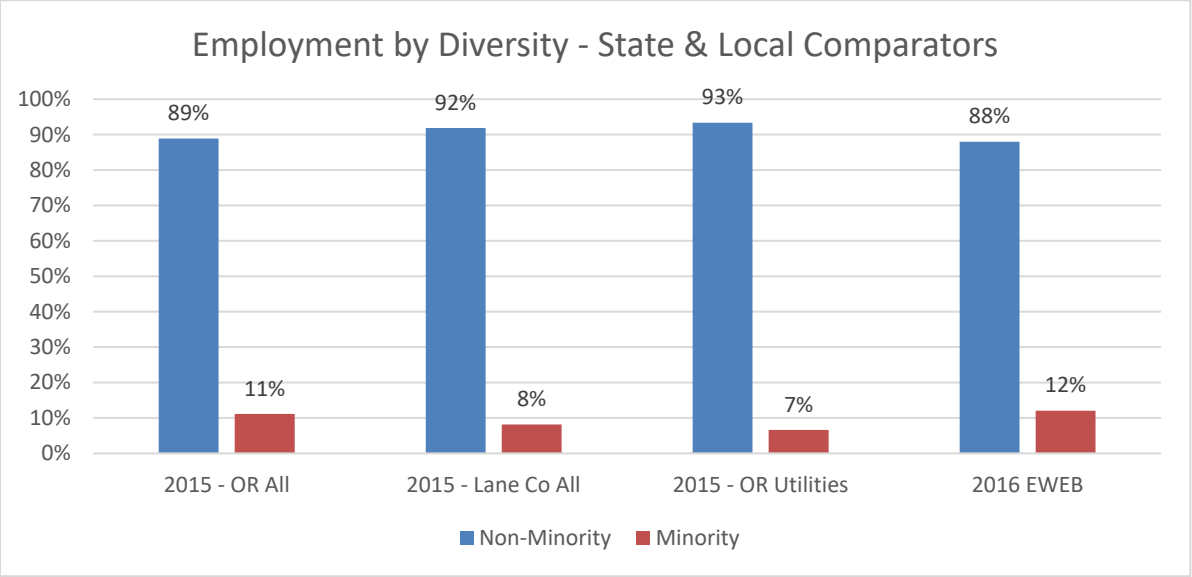
% of Women in Pay Grade

Pay Grade	% Female
Administrative/Technical	56.10%
Professional	36.67%
Supervisor/Lead	37.74%
Executive Team	75.00%

Diversity

Oregon ranks lower than the national average in ethnic and racial diversity. In 2015, according to the U.S. Census Bureau, about 22 percent of the national population belonged to an ethnic or racial minority group. In Oregon, about 11% reported minority status and 10% in Lane County. EWEB is maintaining an effort to reflect the community it serves by matching Lane County census statistics for the overall minority population. EWEB's current diversity composition is slightly above that of Lane County. Currently, 13% of employees report belonging to an ethnic or racial minority group and 84% reporting non-minority status. Three percent have not specified.

In terms of available workforce, the following chart compares the 2016 percentage of minority and non-minority employees at EWEB to those in Oregon and in Lane County (non-industry specific), as well as to the utility industry in Oregon in 2015:

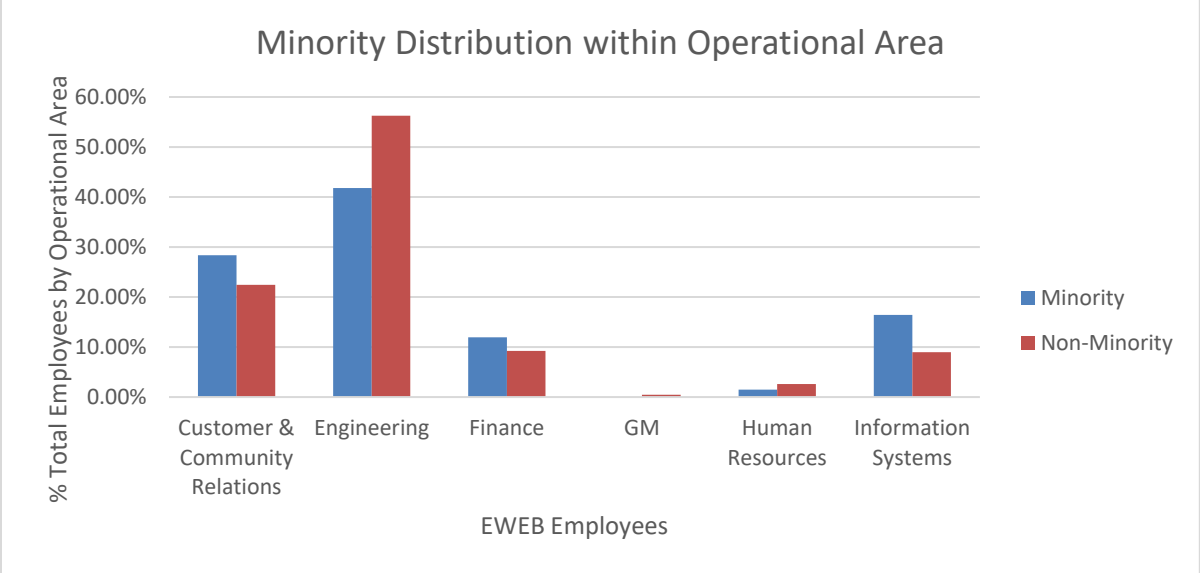


Source: U.S. Census Bureau, Quarterly Workforce Indicators (Oregon utilities includes both public and private sectors)

EWEB's demographic profile is slightly higher than the State's overall employment profile for minority employees, and exceeds the statewide utility profile for minorities. We continue to modify our recruitment outreach activities to reach the broadest segment of the population.

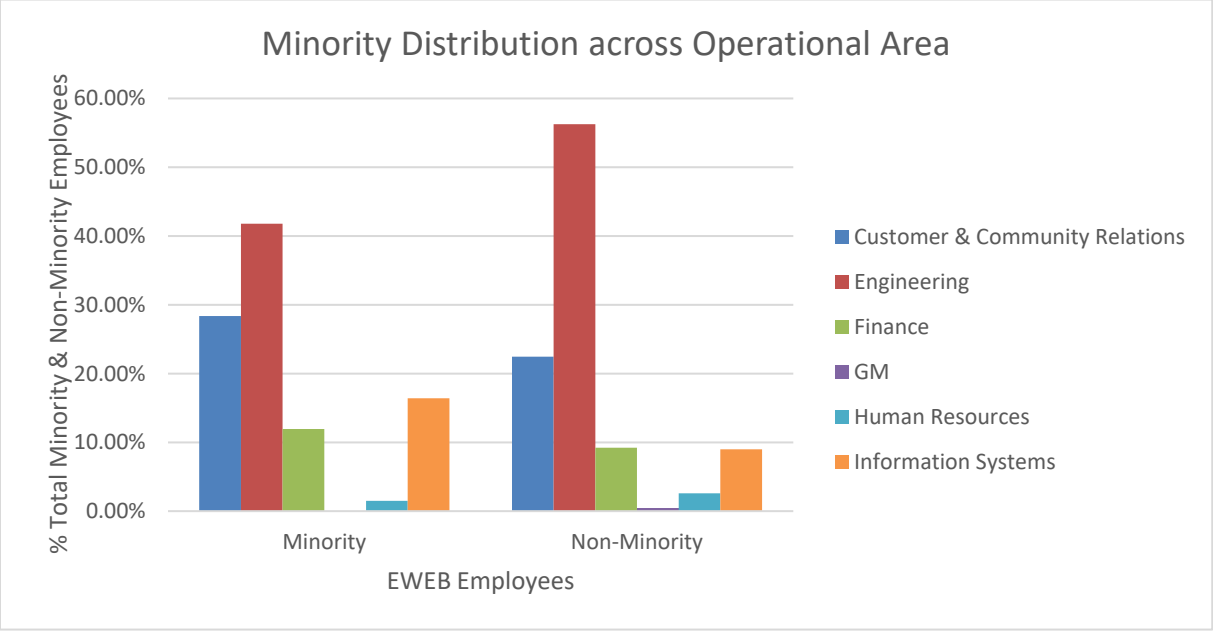
Distribution within Operational Area

Within operational areas, minority employment are most frequently situated in Customer & Community Relations, Finance, and Information Systems.



Distribution across Operational Area

Across operational areas, minority employees and non-minority employees have a very similar pattern of distribution. The Engineering and Operations Division appears to lag in employing minorities. Recent recruitment strategies have focused on developing internship pipelines with local colleges to recruit qualified minority candidates into entry level positions. As recruitment activities are conducted for the Engineering and Operations Division, the exploration of new strategies is ongoing.



Diversity and Wage

The following table represents the level of pay grade for minorities at EWEB. Minority employees are represented in smaller percentages towards the top salary levels of the organization.

% Diversity in Pay Grade

Pay Grade	% Diversity
Administrative & Technical	18.24%
Professional	14.91%
Supervisor/Lead	9.43%
Executive Team	0%

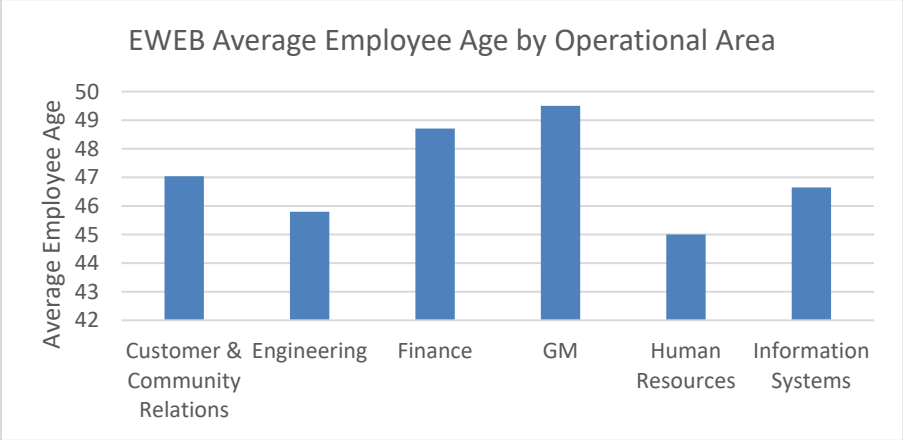
A focus for EWEB will be to make a concerted effort at closing these gaps in order to achieve pay equity for women and minorities.

Age and Years of Service

Age

The EWEB employee average age is 46 Years, which tracks with the results of the 2015 APPA survey in which 52.1% of respondents said their employee average age was between 45 and 49 years. As EWEB'S

workforce begins to grow older, developing replacement strategies to maintain bench strength and create knowledge transfer systems to close replacement gaps.

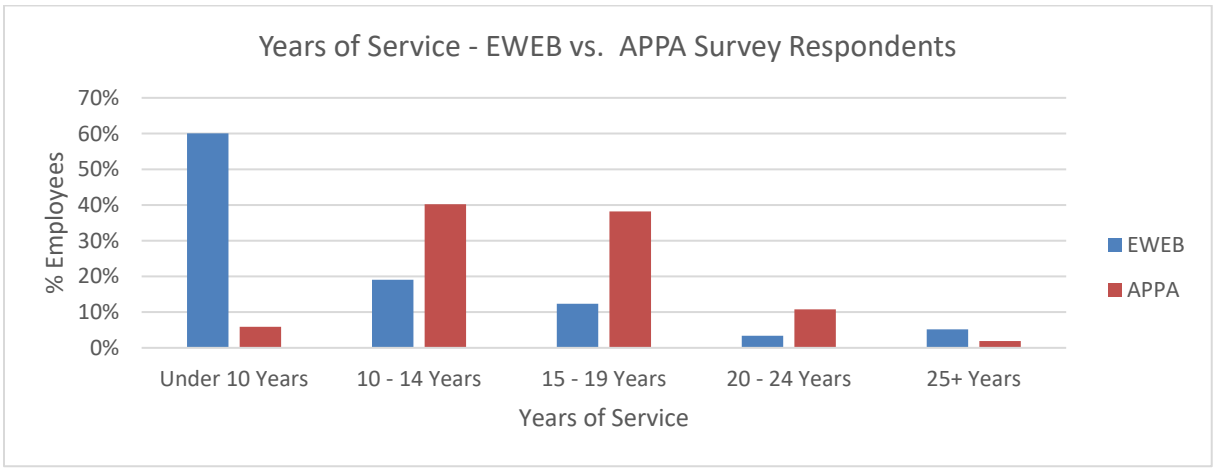


EWEB Employee Age Categories

Age Range	Employee Count
Under 30	3.98%
30-39	23.66%
40-49	31.61%
50-59	30.42%
60-69	10.34%

Years of Service

The average years of service for EWEB employees is 9.59. The highest percent of EWEB employees fall within the 10-14 Years category. Compared to results of the 2015 APPA, it appears EWEB's averages overall fall below most survey respondents in all but less than 10 years of service. Recent events over the past several years may have caused early retirements or motivated employees to search for new opportunities. This would indicate that a transition is occurring in EWEB workforce resulting in the highest average years of service to be under 10 years.



Workforce Trends

Oregon was the 16th fastest-growing U.S. state from 2010 to 2015. From an economic perspective, the changing demographics of the workforce is likely to be the largest driver of employment growth into the future. Businesses simply cannot create new jobs in communities that do not have an available workforce to draw from.

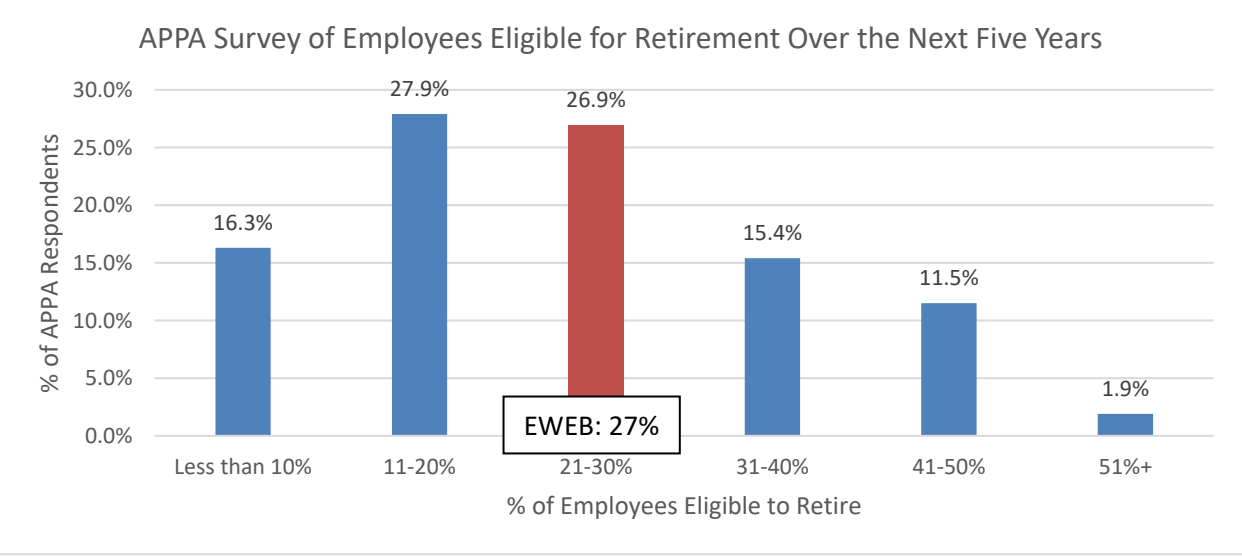
It is useful to compare the demographics of EWEB relative to the 2015 Workforce Survey Summary Report published by the American Public Power Association (APPA). This report summarizes the results of the APPA's 2015 Workforce Survey. It highlights how the public power sector of the electric utility industry is preparing for and responding to the anticipated retirements of a significant portion of its work force. The results were compared to the 2008 APPA Workforce Report to assess the changes over time.

Overall, the survey indicates that:

- a significant portion of the public power workforce will be eligible to retire during the next five to seven years;
- the positions that will experience the most retirements may also be the most difficult to replace: skilled trades, senior managers, general managers/CEOs, and engineers;
- the most significant challenges created will be the loss of knowledge due to retirements;
- finding replacements; and the lack of bench strength within organizations; and
- public power utilities need to do more to plan for their future workforce needs.

According to APPA, industry representatives from various utilities as well as the U.S. Department of Labor continue to refer to the report as an authoritative body of work that identifies workforce issues and data that applies to the electric industry. Unfortunately the American Water Works Association (AWWA) has not conducted a similar survey so workforce data does not exist.

According to the APPA data reflected in the chart below, EWEB's normal retirement projections (PERS reforms notwithstanding) align with other utilities.



The Baby Boomers and the Graying of Oregon

Beneath the population growth statistics we see large demographic shifts around the state, particularly when it comes to age. All across Oregon, the 65 and older population is the largest growing demographic. In many of Oregon's counties, the majority of population growth is among folks age 65 and older. Keep in mind, the primary demographic driver here is baby boomers aging into their senior status, though new migration of retirees is certainly a factor as well. The departure of this segment of workers continues to pose challenges to maintaining a qualified workforce. Retiring workers take years of knowledge and experience and it is often difficult to recruit for a replacement with a similar combination of skills and experience.

College Education & Specialized Training Requirements

As the baby boom generation moves into the retirement years, communities that are able to attract, train and retain college graduates in the workforce will be globally competitive into the future. Looking around Oregon, there are sharp contrasts in the demographics of the educated workforce.

From 2010 to 2015, Oregon added slightly more than eighty thousand working-age people with a four-year college degree or an advanced degree. This important demographic grew by 14 percent statewide, almost three times faster than the general population. However, 95 percent of this net growth occurred in just four counties: Multnomah County, Washington County, Clackamas, County and Deschutes County. Several large counties saw very little growth in their college educated workforce, including Lane County and Jackson County.

The lack of growth in the college educated workforce in major Oregon metros like Eugene, Salem, Albany, and Medford is cause for concern. Oregon's high-wage industries rely heavily on workers with college education. Engineering firms need engineers, law firms need lawyers, and hospitals need doctors. These and other professional and technical companies rely on a supply of college educated professionals in order to succeed and grow. With many communities failing to attract skilled workers, this trend threatens to increase the economic divide in Oregon.

Appendix B is an excerpt from a table published by the Oregon Employment Department projecting employment changes between 2014 and 2024. The job categories represented in this table include those positions contained in EWEB's job inventory (title matches are standardized and not precise). A high percentage of these job categories have post-secondary education requirements and significant projected replacement rates, reinforcing data from the APPA that indicates organizations will begin experiencing difficulty filling these positions.

The following chart indicates the percentage of EWEB positions in relation to the minimum educational requirements. STEM type positions may be where EWEB can increase their efforts at attracting and employing women and minorities. This would require a more concerted investment by the utility in broadening recruitment outreach activities to these groups.

% EWEB Positions with Education & Technical Training Requirements

	STEM	Business/ Finance/ Marketing	Industrial Trade/ Other	Not Specified	Grand Total
2-Year Degree	13.73%	2.45%	1.96%	0.49%	**18.63%**
4-Year Degree	31.86%	13.73%	0.98%		**46.57%**
Apprentice Program			8.33%		**8.33%**
Advanced Training/ Post-Secondary Coursework	0.98%	0.49%	0.49%		**1.96%**
Grand Total	**46.57%**	**16.67%**	**11.76%**	**0.49%**	**75.49%**

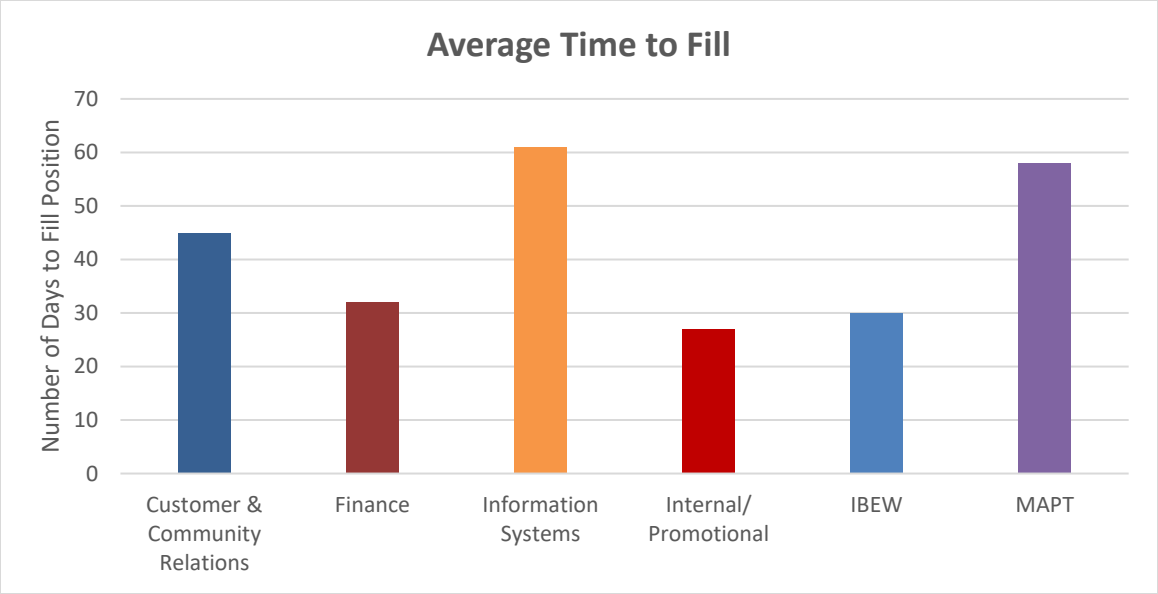
See Appendix C for a list of the job titles in the table above.

Recruitment and Hiring

Recruitment and hiring remains flexible to meet the changing demands of the industry and the organization as EWEB continues to refine and refocus its strategic direction. As the workforce continues to streamline and create work efficiencies, EWEB recruitment and hiring processes evolve to effectively create applicant pools containing targeted knowledge and experience for an increasingly specialized workforce.

Summary of EWEB's Recruitment Trends

During 2012-2016, the average time to fill a position has stayed consistent throughout the Utility at approximately 46 days. In 2016, the average fill time increased to 53 days due to several factors: introduction of a new hiring requisition review process as a new Executive team was established and several extended recruitments for hard to fill positions. However, overall EWEB is positioned well in comparison with the national time to fill average of 44 days (iCIM's U.S. Hiring Trends Q4 2015 report) and below the utility industry average of 50 days to fill a position as we continue to streamline our recruitment process.



EWEB continues to look for work efficiencies as positions are vacated. Before submitting a hiring requisition, supervisors review position job functions to evaluate work processes. The review helps to determine if jobs have changed, can be combined with other functions or eliminated due to improved work processes or efficiencies. In some cases, supervisors may determine a more specialized skill set is needed to perform the work or the review may result in a position being repurposed, transferred or reduced. Gaining insight into the skill sets needed to perform the work permits a position to be marketed to a more specialized pool of qualified candidates.

Recruitment data from 2012-2016 shows EWEB hired an average of 40 new employees per year. In 2016, we are on course to remain at or close to the average for this time period. In an effort to increase the diversity our workforce, we have focused on attracting women and minority candidates. In 2016, out of 40 new hires, 28% were female, 11% were of minority status and 19% were veterans. EWEB is encouraged by this outcome and continues to develop strategies to market positions to a variety of these groups by attending the Women in Trades conference, Veteran Job Fairs and networking functions sponsored and hosted by local minority professional associations such as Blacks in Government and the NAACP. However, we are hampered in this effort to attract female candidates. There is a shortage of women who are attracted the trade, labor and craft fields. Our focus is beginning a shift towards utility occupations in the STEM (Science, Technology, Engineering and Math) areas.

Our new Human Capital Management System will provide an opportunity to better track the number of qualified candidates and conduct more detailed analysis on the diminishing pool of qualified candidates in addition to other HR metrics such as time to fill, retention data and attrition rate. The following tables represent activity through 2016 year end:

EWEB Recruitment and Hiring Statistics through 2016

	2012	2013	2014	2015	2016
Number of Applications	2275	2152	1563	1661	1464
Number of Recruitments	56	59	32	46	37
Internal only	27	27	11	22	12
Internal/External	29	32	21	24	24
Average # of Applications per posting	41	36	49	36	40

Applicants and Hiring Data by Job Category and Minority Status through 2016

	2012	2013	2014	2015	2016
# Females Hired	7	8	6	12	10
% Females Hired	17%	19%	22%	44%	28%
# Diversity Hired	5	5	3	6	4
% Diversity Hired	12%	12%	11%	22%	11%
# Veterans Hired	no data	4	4	5	7
% Veterans Hired	no data	9%	15%	19%	19%

Retention Information

Between 2012 and 2016 the utility had a total of 39 employees leave within the first year of service. Twenty-one of those employees voluntarily left the organization most often citing the reason as moving to a new opportunity. Eighteen employees were discharged before the end of their probationary period. The reasons are varied but most often employees were discharged due to on the job performance deficiencies. There are several factors that may have contributed to this outcome: the recruitment process was flawed and failed to accurately assess candidates, the work was misrepresented in the recruitment process or the employee was unable to transfer their skill set to the job.

EWEB Turnover 2012 – Q3 2016

	Q3 2016	2015	2014	2013	2012
Voluntary Exits	2.98%	3.29%	3.47%	4.44%	3.35%
Involuntary Exits	2.19%	1.16%	0.96%	1.54%	2.61%
Retirement	3.18%	3.67%	1.93%	5.02%	7.26%
Total Attrition	8.35%	8.12%	6.55%	11.00%	13.22%
Non-Retirement Attrition	5.17%	4.44%	4.43%	5.98%	5.96%

Retention Strategies

A good example of a proactive response to year one exits is in the Information Services Department. EWEB's Information Systems department had 13 employees exit the organization since 2015. 6 of those employees exited within one year of being hired. A review of the hiring and onboarding processes identified a gap between what the employees perceived as the actual work verses the actual day to day activities on the job.

In collaboration with Human Resources, IS developed a strategy called a "Day in the Life" as the last step in the hiring process before a final offer was made to the applicant. Once the final candidate is identified, the hiring supervisor schedules the candidate to spend either a half day or full day on site to meet with employees in the workgroup, the departments they would be supporting and to attend department meetings. This provides the candidate an opportunity to interact and ask questions of their peers and supervisors and get a better understanding of the work they would be performing. At the end of the day the supervisor may take the applicant out to lunch for an informal conversation and to identify the applicant's interest in a job offer.

Entry points into Utility

Recognizing that EWEB had a limited number of entry level positions that do not require advanced education or the completion of journey level training programs, the Utility Support Worker I position was created in 2012. The Support Worker I position, located in Water Operations Department, performs duties that include basic traffic control set up and flagging for both the Water and Electric operations crews. In January 2015, after three years of recruitment experience with minimal success in sourcing qualified candidates, the minimum requirements of the position were reduced from one year to six months of relevant experience and training steps were included to allow individuals to gain additional skills and certifications after being selected for employment. The strategy allowed for the position to become a primary point of entry to other positions within the Water and Electric Departments.

Since implementation of new minimum qualifications in 2015, eleven employees have successfully promoted from the Utility Support Worker into other positions within the Water and Electric Departments and include: Utility Support Worker II, Locator, Water Utility Installer, Electric Utility Worker and Apprentice Line Technician. The average length time in the position as a Utility Support worker is 1.9 years before transitioning to another position within the utility which allows these employees to build a solid skill set and foundation of utility knowledge.

Another entry level position in the Utility is the Customer Service Analyst (CSA) position which supports our call center. In 2013 the department redesigned the hours of work for the CSA position with a flexible schedule to allow the department to ramp up employee work hours depending on peaks in demand for service. Recruitment activity is conducted annually to create a candidate pool for the year and provide supervisors with some hiring flexibility in onboarding new employees with the new 'rampable' schedule.

The creation of a BOLI-approved internship program in 2015 enables the utility to retain high performing employees and provides a track for entry into the skilled crafts. The program is just underway but in

2016 four apprentice positions were recruited for placement in Electric Operations. Candidates for the apprentice positions are initially limited to internal applicants as per BOLI program regulations. A trickle-down effect provides opportunities for both inside and outside candidates to fill positions vacated by successful apprentice candidates. While this program has achieved limited success a continued investment may assist in offsetting projected qualified candidate shortages.

Succession Planning in 2017

The Executive Team has begun preliminary work to classify the most critical roles among the projected retirees. Importantly, succession planning work would have to expand to also address the "domino" effect that occurs when an employee exits; if the replacement comes from within EWEB, there may be a need to find a replacement for the promoting employee's now vacant job.

Human Resources conducted an analysis on employees meeting retirement eligibility (PERS Tier-level retirement criteria). An estimated 30% of EWEB's workforce falls into one of several scenario categories defined by retirement age eligibility or years of service in the PERS system. The loss of critical knowledge and the inability to hire or develop replacements are two potential challenges. A systematic development program is in its initial stages that will help to identify high potential employees who may be ready to assume critical roles. It is likely that short-term strategies will need to be put in place that will capture and document the knowledge of exiting employees in addition to creating longer-term development plans for high potential employees.

Currently Managers and Supervisors are assessing the list of employees in their respective division who meet eligibility criteria. From the list, they are determining the critical nature of the position as well as bench strength and creating strategies to replace, repurpose or reduce the position. The bulk of this work will begin in 2017 and will be conducted in Phase II of the Workforce Development Plan.

Appendices

Appendix A: EWEB MAPT Jobs by Salary Range

Appendix B: Oregon Employment Projections Table

Appendix C: EWEB Jobs with Post-Secondary Education & Technical Training Requirements

Appendix A: EWEB MAPT Jobs by Salary Range

Position Title	Range Code	Range Minimum	Range Midpoint	Range Maximum
Accounting Analyst I	AT13	$ 55,173.09	$ 66,473.60	$ 77,774.12
Accounting Analyst II	PRO9	$ 62,636.59	$ 78,295.74	$ 93,954.89
Accounting Technician	AT9	$ 45,360.72	$ 54,651.47	$ 63,942.21
Administrative Assistant I	AT2	$ 32,105.40	$ 38,681.21	$ 45,257.01
Administrative Assistant II	AT6	$ 39,163.43	$ 47,184.85	$ 55,206.28
Administrative Assistant III	AT10	$ 47,598.63	$ 57,347.74	$ 67,096.86
Application Developer Analyst II	PRO12	$ 72,592.08	$ 90,740.10	$ 108,888.12
Application Server Administrator	PRO14	$ 80,058.69	$ 100,073.37	$ 120,088.04
Backflow & Cross Connection Specialist	AT19	$ 73,937.11	$ 89,080.85	$ 104,224.60
Benefits Consultant	AT15	$ 60,853.94	$ 73,318.00	$ 85,782.06
Biologist I	PRO8	$ 59,649.95	$ 74,562.44	$ 89,474.92
Business Analyst I	PRO8	$ 59,649.95	$ 74,562.44	$ 89,474.92
Business Analyst II	PRO11	$ 69,107.66	$ 86,384.57	$ 103,661.49
Business Support Analyst	AT12	$ 52,504.81	$ 63,258.81	$ 74,012.81
CAD Lead	AT16	$ 63,866.51	$ 76,947.60	$ 90,028.70
CAD Technician	AT10	$ 47,598.63	$ 57,347.74	$ 67,096.86
Cash Accounting Supervisor	SL16	$ 64,788.43	$ 86,384.57	$ 107,980.72
Claims Administrator	PRO7	$ 56,829.23	$ 71,036.53	$ 85,243.84
Communications Specialist II	PRO9	$ 62,636.59	$ 78,295.74	$ 93,954.89
Communications Specialist III	PRO11	$ 69,107.66	$ 86,384.57	$ 103,661.49
Compliance Officer	SL24	$ 95,821.54	$ 127,762.06	$ 159,702.57
Contracts Specialist	AT12	$ 52,504.81	$ 63,258.81	$ 74,012.81
Contracts and Purchasing Manager	SL22	$ 86,877.16	$ 115,836.22	$ 144,795.27
Control Systems Administrator	PRO13	$ 76,242.42	$ 95,303.03	$ 114,363.64
Customer Service Analyst	AT5	$ 37,269.81	$ 44,903.39	$ 52,536.96
Customer Service Assistant	AT3	$ 33,740.80	$ 40,651.56	$ 47,562.33
Customer Service Field Rep	AT10	$ 47,598.63	$ 57,347.74	$ 67,096.86
Customer Service Specialist	AT7	$ 41,143.12	$ 49,570.02	$ 57,996.92
Customer Service Supervisor	SL15	$ 61,677.34	$ 82,236.46	$ 102,795.57
Customer Services Lead	AT9	$ 45,360.72	$ 54,651.47	$ 63,942.21
Cyber Security Specialist II	PRO9	$ 62,636.59	$ 78,295.74	$ 93,954.89
Data Architect II	PRO14	$ 80,058.69	$ 100,073.37	$ 120,088.04
Database Administrator	PRO14	$ 80,058.69	$ 100,073.37	$ 120,088.04
Distribution Engineering Supervisor	SL22	$ 86,877.16	$ 115,836.22	$ 144,795.27
Electric Communications and Metering Supervisor	SL25	$ 100,643.73	$ 134,191.64	$ 167,739.55
Electric Operations Support Supervisor	SL22	$ 86,877.16	$ 115,836.22	$ 144,795.27

Energy Management Programs Supervisor	SL20	$ 78,788.33	$ 105,051.11	$ 131,313.89
Energy Management Representative	AT9	$ 45,360.72	$ 54,651.47	$ 63,942.21
Energy Management Specialist II	AT15	$ 60,853.94	$ 73,318.00	$ 85,782.06
Energy Management Specialist III	PRO10	$ 65,789.16	$ 82,236.46	$ 98,683.75
Energy Management and Customer Service Manager	LT6	$ 97,345.98	$ 139,065.68	$ 180,785.39
Energy Resource Analyst I	PRO9	$ 62,636.59	$ 78,295.74	$ 93,954.89
Energy Resource Analyst II	PRO13	$ 76,242.42	$ 95,303.03	$ 114,363.64
Energy Resource Analyst, Senior	PRO16	$ 88,271.97	$ 110,339.96	$ 132,407.95
Engineer Assoc. I - EE/ME	PRO8	$ 59,649.95	$ 74,562.44	$ 89,474.92
Engineer Assoc. II - Civil	PRO10	$ 65,789.16	$ 82,236.46	$ 98,683.75
Engineering Assoc. I - Civil	PRO7	$ 56,829.23	$ 71,036.53	$ 85,243.84
Engineering Assoc. II - EE/ME	PRO11	$ 69,107.66	$ 86,384.57	$ 103,661.49
Engineering Manager	LT8	$ 107,291.09	$ 153,272.99	$ 199,254.89
Engineering Supervisor - EMS Industrial	SL24	$ 95,821.54	$ 127,762.06	$ 159,702.57
Engineering Technician I	AT11	$ 50,008.68	$ 60,251.43	$ 70,494.17
Engineering Technician II	AT14	$ 57,927.44	$ 69,792.10	$ 81,656.76
Engineering Technician III	AT17	$ 67,051.23	$ 80,784.61	$ 94,518.00
Engineering Technician IV	AT20	$ 77,638.27	$ 93,540.08	$ 109,441.89
Enterprise Architect	SL22	$ 86,877.16	$ 115,836.22	$ 144,795.27
Enterprise Risk and Internal Controls Manager	SL25	$ 100,643.73	$ 134,191.64	$ 167,739.55
Environmental Manager	LT5	$ 92,700.08	$ 132,428.69	$ 172,157.30
Environmental Specialist I	PRO9	$ 62,636.59	$ 78,295.74	$ 93,954.89
Environmental Specialist III	PRO15	$ 84,040.89	$ 105,051.11	$ 126,061.33
Environmental Supervisor	SL22	$ 86,877.16	$ 115,836.22	$ 144,795.27
Executive Assistant	AT12	$ 52,504.81	$ 63,258.81	$ 74,012.81
FERC License Coordinator	PRO13	$ 76,242.42	$ 95,303.03	$ 114,363.64
FERC License Manager	PRO17	$ 92,668.97	$ 115,836.22	$ 139,003.46
Financial Analyst I	AT13	$ 55,173.09	$ 66,473.60	$ 77,774.12
Financial Analyst II	PRO9	$ 62,636.59	$ 78,295.74	$ 93,954.89
Financial Services Manager	LT9	$ 112,662.91	$ 160,947.01	$ 209,231.11
Fiscal Services Supervisor	SL24	$ 95,821.54	$ 127,762.06	$ 159,702.57
Fleet Supervisor	SL23	$ 91,232.69	$ 121,643.58	$ 152,054.48
GIS Analyst I	AT14	$ 57,927.44	$ 69,792.10	$ 81,656.76
GIS Analyst II	PRO10	$ 65,789.16	$ 82,236.46	$ 98,683.75
GIS Lead	SL20	$ 78,788.33	$ 105,051.11	$ 131,313.89
GIS Programmer Analyst II	PRO13	$ 76,242.42	$ 95,303.03	$ 114,363.64
GIS Technician	AT12	$ 52,504.81	$ 63,258.81	$ 74,012.81
GRC Analyst II	PRO8	$ 59,649.95	$ 74,562.44	$ 89,474.92

General Accounting and Treasury Supervisor	SL24	$ 95,821.54	$ 127,762.06	$ 159,702.57
Generation Engineering Supervisor	SL24	$ 95,821.54	$ 127,762.06	$ 159,702.57
Generation Manager	LT7	$ 102,209.65	$ 146,013.78	$ 189,817.92
Government and Community Affairs Coordinator	PRO14	$ 80,058.69	$ 100,073.37	$ 120,088.04
Human Resource Associate	AT12	$ 52,504.81	$ 63,258.81	$ 74,012.81
Human Resource Consultant	PRO9	$ 62,636.59	$ 78,295.74	$ 93,954.89
Human Resources Manager	LT5	$ 92,700.08	$ 132,428.69	$ 172,157.30
Human Resources Operations Supervisor	SL21	$ 82,754.97	$ 110,339.96	$ 137,924.95
Hydro Generation Supervisor	SL23	$ 91,232.69	$ 121,643.58	$ 152,054.48
IS Supervisor	SL22	$ 86,877.16	$ 115,836.22	$ 144,795.27
Information Services Supervisor	SL22	$ 86,877.16	$ 115,836.22	$ 144,795.27
Information Technology Manager	LT7	$ 102,209.65	$ 146,013.78	$ 189,817.92
Information Technology Support Specialist I	AT11	$ 50,008.68	$ 60,251.43	$ 70,494.17
Information Technology Support Specialist II	AT14	$ 57,927.44	$ 69,792.10	$ 81,656.76
Internal Auditor	PRO11	$ 69,107.66	$ 86,384.57	$ 103,661.49
Key Accounts Manager	PRO15	$ 84,040.89	$ 105,051.11	$ 126,061.33
Laboratory Quality Assurance Officer	AT17	$ 67,051.23	$ 80,784.61	$ 94,518.00
Land Surveyor	PRO11	$ 69,107.66	$ 86,384.57	$ 103,661.49
Lead Mid Term Trader	SL24	$ 95,821.54	$ 127,762.06	$ 159,702.57
Lead Utility Operations Coordinator	AT14	$ 57,927.44	$ 69,792.10	$ 81,656.76
Line Supervisor	SL25	$ 100,643.73	$ 134,191.64	$ 167,739.55
Loan Administrator	AT9	$ 45,360.72	$ 54,651.47	$ 63,942.21
Manager of Power Planning	LT9	$ 112,662.91	$ 160,947.01	$ 209,231.11
Marketing Program Supervisor	SL19	$ 75,055.02	$ 100,073.37	$ 125,091.71
Materials Planner & Inventory Cntrl. Spclst.	AT14	$ 57,927.44	$ 69,792.10	$ 81,656.76
Meter Reader	AT5	$ 37,269.81	$ 44,903.39	$ 52,536.96
Meter Reading Supervisor	SL12	$ 53,277.40	$ 71,036.53	$ 88,795.67
NERC Compliance Program Manager	PRO17	$ 92,668.97	$ 115,836.22	$ 139,003.46
Network Administrator	PRO12	$ 72,592.08	$ 90,740.10	$ 108,888.12
Payroll Administrator	PRO7	$ 56,829.23	$ 71,036.53	$ 85,243.84
Planner I	AT14	$ 57,927.44	$ 69,792.10	$ 81,656.76
Planner II	PRO10	$ 65,789.16	$ 82,236.46	$ 98,683.75
Planner III	PRO13	$ 76,242.42	$ 95,303.03	$ 114,363.64
Power Operations Manager	LT9	$ 112,662.91	$ 160,947.01	$ 209,231.11
Power Scheduler II	AT19	$ 73,937.11	$ 89,080.85	$ 104,224.60
Power Scheduler III	AT19	$ 73,937.11	$ 89,080.85	$ 104,224.60
Principal Application Developer Analyst	SL22	$ 86,877.16	$ 115,836.22	$ 144,795.27
Principal Engineer	SL24	$ 95,821.54	$ 127,762.06	$ 159,702.57
Principal Project Manager	SL22	$ 86,877.16	$ 115,836.22	$ 144,795.27

Project Manager II	PRO12	$ 72,592.08	$ 90,740.10	$ 108,888.12
Project Manager II	PRO12	$ 72,592.08	$ 90,740.10	$ 108,888.12
Project Manager II	PRO12	$ 72,592.08	$ 90,740.10	$ 108,888.12
Public Affairs Manager	LT5	$ 92,700.08	$ 132,428.69	$ 172,157.30
Purchasing Analyst	PRO8	$ 59,649.95	$ 74,562.44	$ 89,474.92
Purchasing Coordinator	SL15	$ 61,677.34	$ 82,236.46	$ 102,795.57
Real Time Supervisor	SL24	$ 95,821.54	$ 127,762.06	$ 159,702.57
Real-Time Trader II	AT23	$ 89,860.70	$ 108,265.90	$ 126,671.10
Records Retention & Compliance Coordinator	AT10	$ 47,598.63	$ 57,347.74	$ 67,096.86
Right-of-Way Agent	PRO9	$ 62,636.59	$ 78,295.74	$ 93,954.89
Right-of-Way Vegetation Program Supervisor	SL19	$ 75,055.02	$ 100,073.37	$ 125,091.71
Safety Consultant	PRO11	$ 69,107.66	$ 86,384.57	$ 103,661.49
Safety Supervisor	SL19	$ 75,055.02	$ 100,073.37	$ 125,091.71
Security Officer	AT2	$ 32,105.40	$ 38,681.21	$ 45,257.01
Security Supervisor	SL8	$ 43,111.73	$ 57,482.30	$ 71,852.88
Security Systems Administrator	AT14	$ 57,927.44	$ 69,792.10	$ 81,656.76
Security Systems Coordinator	AT12	$ 52,504.81	$ 63,258.81	$ 74,012.81
Senior Accounting Analyst	PRO12	$ 72,592.08	$ 90,740.10	$ 108,888.12
Senior Benefits Consultant	PRO11	$ 69,107.66	$ 86,384.57	$ 103,661.49
Senior Biologist	PRO14	$ 80,058.69	$ 100,073.37	$ 120,088.04
Senior Business Analyst	PRO14	$ 80,058.69	$ 100,073.37	$ 120,088.04
Senior CAD Technician	AT13	$ 55,173.09	$ 66,473.60	$ 77,774.12
Senior Engineer - Civil	PRO16	$ 88,271.97	$ 110,339.96	$ 132,407.95
Senior Engineer - EE/ME	PRO17	$ 92,668.97	$ 115,836.22	$ 139,003.46
Senior Environmental Specialist	PRO15	$ 84,040.89	$ 105,051.11	$ 126,061.33
Senior Financial Analyst	PRO13	$ 76,242.42	$ 95,303.03	$ 114,363.64
Senior Graphic Designer	PRO6	$ 54,091.47	$ 67,614.34	$ 81,137.20
Senior HR Consultant	PRO12	$ 72,592.08	$ 90,740.10	$ 108,888.12
Senior Meter Reader	AT8	$ 43,208.88	$ 52,058.89	$ 60,908.90
Senior Project Manager	PRO15	$ 84,040.89	$ 105,051.11	$ 126,061.33
Senior Security Specialist	PRO14	$ 80,058.69	$ 100,073.37	$ 120,088.04
Settlements Analyst	AT15	$ 60,853.94	$ 73,318.00	$ 85,782.06
Short Term Trader Lead	SL23	$ 91,232.69	$ 121,643.58	$ 152,054.48
Short-Term Trader	PRO16	$ 88,271.97	$ 110,339.96	$ 132,407.95
Software Development and GIS Supervisor	SL22	$ 86,877.16	$ 115,836.22	$ 144,795.27
Staff Engineer - Civil	PRO13	$ 76,242.42	$ 95,303.03	$ 114,363.64
Staff Engineer - EE/ME	PRO14	$ 80,058.69	$ 100,073.37	$ 120,088.04
Systems Engineering Supervisor	SL24	$ 95,821.54	$ 127,762.06	$ 159,702.57
Technical Assistant	AT9	$ 45,360.72	$ 54,651.47	$ 63,942.21

Technical Operations Coordinator	AT6	$ 39,163.43	$ 47,184.85	$ 55,206.28
Transmission & Distribution Apparatus Supervisor	SL25	$ 100,643.73	$ 134,191.64	$ 167,739.55
Transmission & Distribution Dispatch Supervisor	SL25	$ 100,643.73	$ 134,191.64	$ 167,739.55
Utility Forester	AT10	$ 47,598.63	$ 57,347.74	$ 67,096.86
Utility Joint Use Coordinator	AT17	$ 67,051.23	$ 80,784.61	$ 94,518.00
Utility Operations Coordinator	AT12	$ 52,504.81	$ 63,258.81	$ 74,012.81
Utility Support Services Supervisor	SL18	$ 71,477.27	$ 95,303.03	$ 119,128.79
Vegetation Compliance Coordinator	PRO7	$ 56,829.23	$ 71,036.53	$ 85,243.84
Water Construction & Distribution Supervisor	SL21	$ 82,754.97	$ 110,339.96	$ 137,924.95
Water Distribution Management Technician	PRO12	$ 72,592.08	$ 90,740.10	$ 108,888.12
Water Distribution Supervisor	SL21	$ 82,754.97	$ 110,339.96	$ 137,924.95
Water Engineering Supervisor	SL24	$ 95,821.54	$ 127,762.06	$ 159,702.57
Water Management Specialist	AT17	$ 67,051.23	$ 80,784.61	$ 94,518.00
Water Operations Manager	LT7	$ 102,209.65	$ 146,013.78	$ 189,817.92
Water Pumping & Controls Supervisor	SL21	$ 82,754.97	$ 110,339.96	$ 137,924.95
Water Treatment & Supply Supervisor	SL21	$ 82,754.97	$ 110,339.96	$ 137,924.95

Appendix B: Oregon Employment Projections Table

Oregon Employment Projections Table, 2014-2024
Oregon Employment Department, Workforce and Economic Research

Standard Occupational Classification Code and Title			Employment		Change		Openings			Typical Entry Level Education	Competitive Education
			2014	2024	Employ-ment	Percent	Growth	Replace-ment	Total		
	Management, Business, and Financial		**196,821**	**226,513**	**29,692**	**15.1%**	**29,786**	**43,021**	**72,807**		
11-0000	**Management Occupations**		**113,413**	**130,120**	**16,707**	**14.7%**	**16,722**	**26,049**	**42,771**		
11-1000	**Top Executives**		**30,897**	**35,220**	**4,323**	**14.0%**	**4,323**	**7,582**	**11,905**		
11-1011		Chief Executives	2,780	2,943	163	5.9%	163	473	636	Bachelor's	Bachelor's
11-1021		General and Operations Managers	27,869	32,029	4,160	14.9%	4,160	7,054	11,214	Bachelor's	Bachelor's
11-2000	**Advertising, Marketing, Promotions, Public Relations, and Sales Managers**		**12,064**	**14,046**	**1,982**	**16.4%**	**1,982**	**3,067**	**5,049**		
11-2011		Advertising and Promotions Managers	- c -	- c -	- c -	- c -	- c -	- c -	- c -	Bachelor's	Bachelor's
11-2021		Marketing Managers	4,185	4,981	796	19.0%	796	990	1,786	Bachelor's	Bachelor's
11-2022		Sales Managers	5,671	6,505	834	14.7%	834	1,341	2,175	Bachelor's	Bachelor's
11-2031		Public Relations and Fundraising Managers	- c -	- c -	- c -	- c -	- c -	- c -	- c -	Bachelor's	Bachelor's
11-3000	**Operations Specialties Managers**		**22,557**	**26,338**	**3,781**	**16.8%**	**3,781**	**4,872**	**8,653**		
11-3011		Administrative Services Managers	3,274	3,707	433	13.2%	433	612	1,045	Bachelor's	Bachelor's
11-3021		Computer and Information Systems Managers	4,545	5,601	1,056	23.2%	1,056	536	1,592	Bachelor's	Bachelor's
11-3031		Financial Managers	6,308	7,275	967	15.3%	967	1,494	2,461	Bachelor's	Bachelor's
11-3061		Purchasing Managers	- c -	- c -	- c -	- c -	- c -	- c -	- c -	Bachelor's	Bachelor's
11-3071		Transportation, Storage, and Distribution Managers	1,850	2,097	247	13.4%	247	407	654	Bachelor's	Bachelor's
11-3121		Human Resources Managers	2,039	2,498	459	22.5%	459	595	1,054	Bachelor's	Bachelor's
11-9000	**Other Management Occupations**		**47,895**	**54,516**	**6,621**	**13.8%**	**6,636**	**10,528**	**17,164**		
11-9041		Architectural and Engineering Managers	2,992	3,429	437	14.6%	437	917	1,354	Bachelor's	Bachelor's
11-9199		Managers, All Other	11,135	12,532	1,397	12.6%	1,397	2,457	3,854	Bachelor's	Bachelor's
13-0000	**Business and Financial Operations Occupations**		**83,408**	**96,393**	**12,985**	**15.6%**	**13,064**	**16,972**	**30,036**		

13-1000	**Business Operations Specialists**		**55,903**	**64,016**	**8,113**	**14.5%**	**8,135**	**10,458**	**18,593**		
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products		3,358	3,715	357	10.6%	357	923	1,280	Bachelor's	Bachelor's
13-1031		Claims Adjusters, Examiners, and Investigators	3,273	3,619	346	10.6%	346	811	1,157	High school diploma or equivalent	Bachelor's
13-1041		Compliance Officers, Except Agriculture, Construction, and Health and Safety	2,615	2,858	243	9.3%	243	368	611	Bachelor's	Bachelor's
13-1071		Human Resources Specialists	5,755	6,378	623	10.8%	623	1,401	2,024	Bachelor's	Bachelor's
13-1075		Labor Relations Specialists	1,576	1,554	-22	-1.4%	0	384	384	Bachelor's	Bachelor's
13-1141		Compensation, Benefits, and Job Analysis Specialists	794	865	71	8.9%	71	193	264	Bachelor's	Bachelor's
13-1151		Training and Development Specialists	3,379	3,874	495	14.7%	495	822	1,317	Bachelor's	Bachelor's
13-1199		Business Operations Specialists, All Other	14,097	15,733	1,636	11.6%	1,636	1,680	3,316	Bachelor's	Bachelor's
13-2000	**Financial Specialists**		**27,505**	**32,377**	**4,872**	**17.7%**	**4,929**	**6,514**	**11,443**		
13-2011		Accountants and Auditors	12,623	15,328	2,705	21.4%	2,705	3,369	6,074	Bachelor's	Bachelor's
13-2041		Credit Analysts	730	837	107	14.7%	107	316	423	Bachelor's	Bachelor's
13-2051		Financial Analysts	2,309	2,751	442	19.1%	442	475	917	Bachelor's	Master's degree
13-2061		Financial Examiners	367	435	68	18.5%	68	90	158	Bachelor's	Bachelor's
13-2099		Financial Specialists, All Other	1,457	1,690	233	16.0%	233	148	381	Bachelor's	Bachelor's
	Professional and Related		**298,020**	**336,153**	**38,133**	**12.8%**	**38,288**	**62,613**	**100,901**		
15-0000	**Computer and Mathematical Occupations**		**48,157**	**58,743**	**10,586**	**22.0%**	**10,589**	**6,944**	**17,533**		
15-1100	**Computer Occupations**		**46,506**	**56,493**	**9,987**	**21.5%**	**9,987**	**6,627**	**16,614**		
15-1111		Computer and Information Research Scientists	266	372	106	39.9%	106	34	140	Doctoral or professional degree	Doctoral or professional degree
15-1121		Computer Systems Analysts	5,112	6,552	1,440	28.2%	1,440	658	2,098	Bachelor's	Bachelor's
15-1122		Information Security Analysts	388	469	81	20.9%	81	50	131	Bachelor's	Bachelor's
15-1131		Computer Programmers	3,090	3,189	99	3.2%	99	761	860	Bachelor's	Bachelor's
15-1132		Software Developers, Applications	7,662	9,844	2,182	28.5%	2,182	1,095	3,277	Bachelor's	Bachelor's
15-1133		Software Developers, Systems Software	4,847	5,779	932	19.2%	932	693	1,625	Bachelor's	Bachelor's
15-1134		Web Developers	3,408	4,847	1,439	42.2%	1,439	439	1,878	Bachelor's	Bachelor's

15-1141		Database Administrators	1,150	1,361	211	18.4%	211	248	459	Bachelor's	Bachelor's
15-1142		Network and Computer Systems Administrators	3,874	4,427	553	14.3%	553	499	1,052	Bachelor's	Bachelor's
15-1143		Computer Network Architects	1,223	1,432	209	17.1%	209	157	366	Bachelor's	Bachelor's
15-1151		Computer User Support Specialists	7,963	9,505	1,542	19.4%	1,542	1,025	2,567	Postsecondary training (non-degree)	Bachelor's
15-1152		Computer Network Support Specialists	1,781	2,013	232	13.0%	232	229	461	Bachelor's	Bachelor's
15-1199		Computer Occupations, All Other	5,742	6,703	961	16.7%	961	739	1,700	Postsecondary training (non-degree)	Bachelor's
17-0000	**Architecture and Engineering Occupations**		**38,002**	**43,600**	**5,598**	**14.7%**	**5,598**	**9,047**	**14,645**		
17-2000	**Engineers**		**22,140**	**25,790**	**3,650**	**16.5%**	**3,650**	**5,800**	**9,450**		
17-2051		Civil Engineers	4,552	5,414	862	18.9%	862	1,344	2,206	Bachelor's	Master's degree
17-2071		Electrical Engineers	1,520	1,768	248	16.3%	248	335	583	Bachelor's	Master's degree
17-2081		Environmental Engineers	658	793	135	20.5%	135	186	321	Bachelor's	Master's degree
17-2141		Mechanical Engineers	2,734	3,227	493	18.0%	493	866	1,359	Bachelor's	Master's degree
17-2199		Engineers, All Other	2,336	2,714	378	16.2%	378	469	847	Bachelor's	Master's degree
17-3000	**Drafters, Engineering Technicians, and Mapping Technicians**		**12,257**	**13,336**	**1,079**	**8.8%**	**1,079**	**2,481**	**3,560**		
17-3022		Civil Engineering Technicians	949	1,032	83	8.8%	83	232	315	Associate's	Associate's
17-3023		Electrical and Electronics Engineering Technicians	2,866	3,135	269	9.4%	269	701	970	Associate's	Associate's
17-3024		Electro-Mechanical Technicians	- c -	- c -	- c -	- c -	- c -	- c -	- c -	Associate's	Associate's
17-3025		Environmental Engineering Technicians	198	217	19	9.6%	19	48	67	Associate's	Associate's
17-3027		Mechanical Engineering Technicians	449	512	63	14.0%	63	110	173	Associate's	Associate's

17-3031		Surveying and Mapping Technicians	920	948	28	3.0%	28	104	132	High school diploma or equivalent	Postsecondary training (non-degree)
	Service		**332,144**	**390,260**	**58,116**	**17.5%**	**58,176**	**97,621**	**155,797**		
33-0000	**Protective Service Occupations**		**30,263**	**32,097**	**1,834**	**6.1%**	**1,878**	**7,412**	**9,290**		
33-1000	**Supervisors of Protective Service Workers**		**3,734**	**3,919**	**185**	**5.0%**	**185**	**1,377**	**1,562**		
33-1099		Supervisors and Managers of Protective Service Workers, All Other	815	879	64	7.9%	64	208	272	High school diploma or equivalent	Bachelor's
33-9000	**Other Protective Service Workers**		**12,519**	**13,594**	**1,075**	**8.6%**	**1,098**	**1,856**	**2,954**		
33-9032		Security Guards	7,363	8,038	675	9.2%	675	1,036	1,711	High school diploma or equivalent	High school diploma or equivalent
37-0000	**Building and Grounds Cleaning and Maintenance Occupations**		**60,800**	**69,421**	**8,621**	**14.2%**	**8,621**	**12,263**	**20,884**		
37-1000	**Supervisors of Building and Grounds Cleaning and Maintenance Workers**		**2,864**	**3,268**	**404**	**14.1%**	**404**	**462**	**866**		
37-3000	**Grounds Maintenance Workers**		**16,550**	**18,958**	**2,408**	**14.6%**	**2,408**	**2,984**	**5,392**		
37-3011		Landscaping and Groundskeeping Workers	12,893	14,764	1,871	14.5%	1,871	2,325	4,196	Less than high school	High school diploma or equivalent
	Office and Administrative Support		**272,024**	**294,347**	**22,323**	**8.2%**	**24,404**	**54,574**	**78,978**		
43-0000	**Office and Administrative Support Occupations**		**272,024**	**294,347**	**22,323**	**8.2%**	**24,404**	**54,574**	**78,978**		
43-1000	**Supervisors of Office and Administrative Support Workers**		**14,649**	**16,510**	**1,861**	**12.7%**	**1,861**	**2,213**	**4,074**		
43-1011		Supervisors and Managers of Office and Administrative Support Workers	14,649	16,510	1,861	12.7%	1,861	2,213	4,074	High school diploma or equivalent	Associate's
43-3000	**Financial Clerks**		**44,347**	**45,174**	**827**	**1.9%**	**1,403**	**7,791**	**9,194**		
43-3051		Payroll and Timekeeping Clerks	2,044	2,150	106	5.2%	106	548	654	High school diploma or equivalent	Postsecondary training (non-degree)
43-4000	**Information and Record Clerks**		**68,153**	**75,933**	**7,780**	**11.4%**	**7,843**	**16,938**	**24,781**		

43-4161		Human Resources Assistants, Except Payroll and Timekeeping	1,384	1,427	43	3.1%	43	156	199	High school diploma or equivalent	Postsecondary training (non-degree)
43-4199		Information and Record Clerks, All Other	7,200	7,960	760	10.6%	760	1,850	2,610	High school diploma or equivalent	High school diploma or equivalent
43-6000	**Secretaries and Administrative Assistants**		**51,268**	**56,793**	**5,525**	**10.8%**	**5,655**	**5,405**	**11,060**		
43-6011		Executive Secretaries and Executive Administrative Assistants	6,763	6,633	-130	-1.9%	0	713	713	High school diploma or equivalent	Associate's
43-6014		Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	27,035	29,039	2,004	7.4%	2,004	2,850	4,854	High school diploma or equivalent	Associate's
	Construction and Extraction		**82,615**	**99,587**	**16,972**	**20.5%**	**16,977**	**12,671**	**29,648**		
47-0000	**Construction and Extraction Occupations**		**82,615**	**99,587**	**16,972**	**20.5%**	**16,977**	**12,671**	**29,648**		
47-1000	**Supervisors of Construction and Extraction Workers**		**4,950**	**5,928**	**978**	**19.8%**	**978**	**392**	**1,370**		
47-1011		Supervisors and Managers of Construction Trades and Extraction Workers	4,950	5,928	978	19.8%	978	392	1,370	High school diploma or equivalent	Postsecondary training (non-degree)
47-2000	**Construction Trades Workers**		**70,464**	**85,361**	**14,897**	**21.1%**	**14,897**	**10,753**	**25,650**		
47-2073		Operating Engineers and Other Construction Equipment Operators	4,266	4,798	532	12.5%	532	711	1,243	High school diploma or equivalent	Postsecondary training (non-degree)
	Installation, Maintenance, and Repair		**65,066**	**73,776**	**8,710**	**13.4%**	**8,795**	**15,042**	**23,837**		
49-0000	**Installation, Maintenance, and Repair Occupations**		**65,066**	**73,776**	**8,710**	**13.4%**	**8,795**	**15,042**	**23,837**		
49-1000	**Supervisors of Installation, Maintenance, and Repair Workers**		**4,414**	**4,894**	**480**	**10.9%**	**480**	**880**	**1,360**		
49-1011		Supervisors and Managers of Mechanics, Installers, and Repairers	4,414	4,894	480	10.9%	480	880	1,360	High school diploma or equivalent	Postsecondary training (non-degree)

49-2000	**Electrical and Electronic Equipment Mechanics, Installers, and Repairers**		**7,226**	**7,865**	**639**	**8.8%**	**656**	**1,099**	**1,755**		
49-2021		Radio, Cellular, and Tower Equipment Installers and Repairers	231	257	26	11.3%	26	21	47	Postsecondary training (non-degree)	Postsecondary training (non-degree)
49-2022		Telecommunications Equipment Installers and Repairers, Except Line Installers	2,702	2,825	123	4.6%	123	244	367	Postsecondary training (non-degree)	Postsecondary training (non-degree)
49-2095		Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	116	118	2	1.7%	2	20	22	Postsecondary training (non-degree)	Postsecondary training (non-degree)
49-3000	**Vehicle and Mobile Equipment Mechanics, Installers, and Repairers**		**21,449**	**24,154**	**2,705**	**12.6%**	**2,705**	**5,291**	**7,996**		
49-3023		Automotive Service Technicians and Mechanics	8,028	8,912	884	11.0%	884	2,149	3,033	Postsecondary training (non-degree)	Associate's
49-3031		Bus and Truck Mechanics and Diesel Engine Specialists	3,455	4,133	678	19.6%	678	593	1,271	High school diploma or equivalent	Postsecondary training (non-degree)
49-9000	**Other Installation, Maintenance, and Repair Occupations**		**31,977**	**36,863**	**4,886**	**15.3%**	**4,954**	**7,772**	**12,726**		
49-9051		Electrical Power-Line Installers and Repairers	921	964	43	4.7%	43	367	410	Postsecondary training (non-degree)	Postsecondary training (non-degree)

Notes:
All data includes self-employment.
- c - means confidential.
* Occupations with declining employment have zero growth openings.

Appendix C: EWEB Jobs with Post-Secondary Education & Technical Training Requirements

EWEB Positions - Education & Technical Training Requirements

2-Year Degree

STEM

- Business Support Analyst
- CAD Technician II
- Communications & Control Crew Leader
- Communications & Control Technician
- Cyber Security Specialist II
- Electric T&D Apparatus Supervisor
- Engineering Technician II
- Engineering Technician III
- Engineering Technician IV
- GIS Technician
- IT Support Specialist I
- IT Support Specialist II
- Laboratory Technician
- Line Supervisor
- Network Technician
- Real-Time Trader II
- Security Systems Admin
- Security Systems Coord
- T&D Dispatch Supervisor
- Technical Ops Coordinator
- Utility Joint Use Coordinator
- Utility Support Services Supervisor
- Water Construction Supervisor
- Water Distribution Operator - Lead
- Water Distribution Technician
- Water Pumping & Controls Supervisor
- Water Treatment Plant Operator
- Water Treatment Plant Operator - Lead

Business/ Finance/ Marketing

- Administrative Assistant III
- Executive Assistant
- Graphic Designer Senior
- Payroll Administrator
- Planner I

Industrial Trade/Other

- Electric Comm & Metering Supervisor
- Utility Operations Coordinator
- Utility Ops Coordinator - Lead
- Water Management Specialist

Not Specified

Records Retention Spec

4-Year Degree

STEM

Application Developer Analyst II
Application Developer Senior
Application Server Administrator
Biologist Senior
Business Analyst I
Business Analyst Senior
Control Systems Administrator
Cyber Security Specialist Senior
Data Architect II
Database Administrator
Energy Management Programs Supervisor
Energy Management Specialist II
Energy Management Specialist III
Energy Resource Analyst I
Energy Resource Analyst II
Energy Resource Analyst Senior
Engineer (Civil) Senior
Engineer (Civil) Staff
Engineer (EE/ME) Staff
Engineer (Elec/Mech) Senior
Engineering Associate I (Elec/Mech)
Engineering Associate II (Civil)
Engineering Associate II (Elec/Mech)
Engineering Manager
Enterprise Architect
Enterprise Risk Analyst II
Enterprise Risk Analyst Senior
Environmental Specialist I
Environmental Supervisor
FERC License Coordinator
General Manager
Generation Engineering Supervisor
GIS - Lead
GIS Analyst I
GIS Analyst II
GIS Programmer Analyst II
Information Services Manager
Internal Auditor
IS Supervisor
IT Architect

- Key Accounts Manager
- Laboratory & Water QAO
- Land Surveyor
- Manager of Power Planning
- Mid Term Trader - Lead
- NERC Program Manager
- Network Administrator
- Planner II
- Planner III
- Power Scheduler II
- Power Scheduler III
- Power Trader
- Principal Engineer
- Principal Project Manager
- Project Manager II
- QA & Release Coordinator
- Right-of-Way Agent
- Senior Project Manager
- Short Term Trader - Lead
- Systems Engineering Supervisor
- Trading Operations Supervisor
- Vegetation Compliance Coordinator
- Water Engineering Supervisor
- Water Operations Manager
- Water Treatment Supervisor

Business/ Finance/ Marketing

- Accounting Analyst I
- Accounting Analyst II
- Accounting Analyst Senior
- Benefits Consultant
- Benefits Consultant Senior
- Budget & Rates Supervisor
- Cash Accounting Supervisor
- Communications Specialist II
- Communications Specialist III
- Compliance Officer
- Customer Service Operations Manager
- Customer Service Supervisor
- Enterprise Risk Supervisor
- Financial Analyst - Lead
- Financial Analyst I
- Financial Analyst II
- Financial Analyst Senior
- Financial Services Manager

- Gen Acctg & Treasury Supervisor
- Government Affairs Coordinator
- Human Resources Consultant
- Human Resources Consultant Senior
- Human Resources Manager
- Human Resources Operations Supervisor
- Marketing Program Supervisor
- Purchasing & Warehouse Supervisor
- Purchasing Analyst
- Purchasing Coordinator

Industrial Trade/Other

- Safety Consultant
- Safety Program Administrator

Apprentice Program

Industrial Trade/Other

- Electric Meter Crew Leader
- Electric Meter Technician
- Electric Meter Technician - Lead
- Electric Troubleshooter
- Electrician
- Hydro Plant Technician/Operator
- Line Crew Leader
- Line Crew Leader II
- Line Technician
- Line Technician - Lead
- Meter Relay Crew Leader
- Station Wire Crew Leader
- Station Wire Crew Leader II
- Station Wire Technician
- T&D Dispatcher
- T&D Dispatcher - Lead
- Transformer Technician - Lead

Advanced Training/Post-Secondary Coursework

STEM

- Environmental Specialist Senior
- Hydro Generation Supervisor

Business/ Finance/ Marketing

- Loan Administrator

Industrial Trade/Other

- Water SCADA Technician