BC WATER & WASTEWATER SECTOR WORKFORCE PROFILE

Executive Summary

- How large is the water and wastewater workforce in British Columbia and who are the people that are employed in the sector today?
- Do water and wastewater employees have the right knowledge and skills to continue to protect public health and the environment? Does their training adequately prepare them for the current and future demands of their role?
- How many employees will retire and when? Are there enough qualified and experienced people to replace them?
- What are the current skill gaps and barriers facing the water and wastewater industry and are there additional challenges that need to be addressed in the next five to ten years?

At any moment of the day in British Columbia, clean water flows from our taps and wastewater disappears seamlessly from our drains and toilets. We give little thought to the complex system of treatment, distribution and collection that make this possible, nor to the people who are responsible for these critical systems. Yet, the water and wastewater workforce plays a key role in safeguarding public health and the environment by taking care of our water and wastewater and making sure that our systems are always available and safe to use.

The BC Water & Waste Association (BCWWA) and the Environmental Operators Certification Program (EOCP) have worked together, with funding provided through the Canada-British Columbia Labour Market Development Agreement, to develop a comprehensive profile of BC's water and wastewater operations personnel in order to ensure there is a sustainable, competent workforce that is capable of protecting public health and the environment, now and in the future.

Canada

British Columbia

BCWWA
BC WATER & WASTE ASSOCIATION

eocp

www.bcwwa.org

The goal of this study was to develop a comprehensive profile of the workforce responsible for water and wastewater operations in BC. Despite the importance of this sector, there has been a lack of reliable, BC-specific data to document and understand the dynamics of this workforce.

For the purposes of this study, the water sector workforce was defined as those workers involved in the day-to-day operations and maintenance of water and wastewater conveyancing and treatment. Construction and capital project workers are not included.

The project encompassed three main stages:

1. Background research to review existing labour market information;
2. Primary research to collect original data for BC, based on surveys, interviews, and focus groups with employers, training organizations, regulators, and accreditation institutions;
3. Analysis and synthesis of data to outline trends and forecasts.

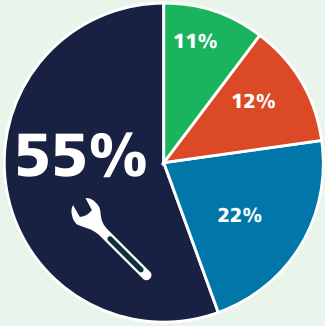
What do the results tell us?

- Over one third of the water and wastewater workforce is over 50 years of age and more than half of this age group is expected to retire within the next 10 years, equivalent to approximately 1,150 employees.
- 3,320 new employees are required within the next 10 years due to retirements, attrition and sector growth.
- The sector is not attracting its share of younger workers. Only 23% of the sector workforce is between 19 and 35 years of age, compared to 33% of the general population of BC.
- There are limited pathways for new workforce entrants.
- Most employers do not have succession plans in place.
- Educational curriculum will need to be enhanced to ensure that the workforce can maintain technical skills, meet certification, and satisfy evolving industry needs.
- Competencies associated with all of the occupational groups are not defined.

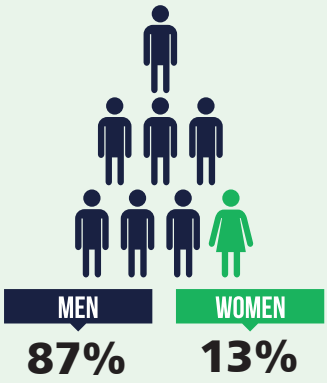
2015 BC WATER & WASTEWATER SECTOR WORKFORCE DEMOGRAPHICS

Labour Supply *~6,250 total employees*

OCCUPATION TYPE WATER & WASTEWATER FACILITIES

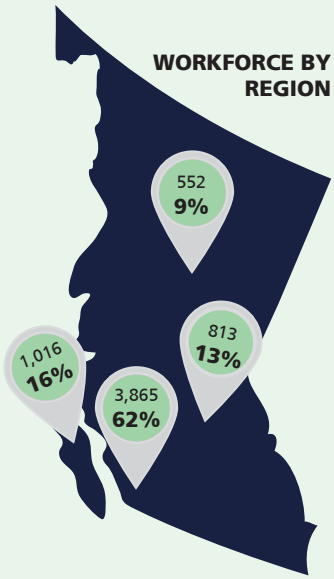


- Management
- Supervisor
- Technical Support
- Operator



87% **13%**

WORKFORCE BY REGION



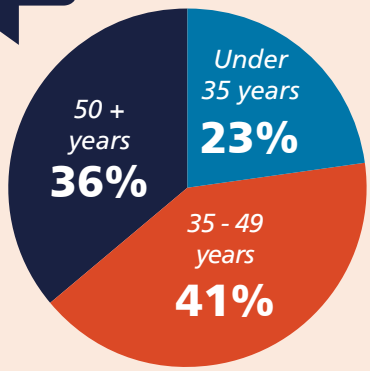
WORKFORCE BY FACILITY TYPE

WATER	**53%**
WASTEWATER	**47%**

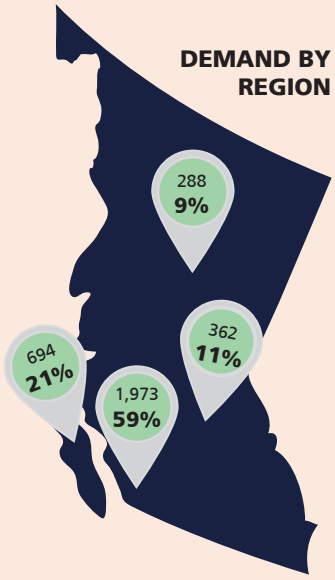
Labour Demand *~3,320 new hires needed*

1,149
Current employees retiring within the next 10 years

WORKFORCE BY AGE



DEMAND BY REGION



EOCP CERTIFICATION

54% EOCP certification

46% No EOCP certification

Workforce Demographics

Estimates based on survey results show that the water and watewater sector workforce is comprised of 6,247 employees. Of the total sector workforce, the majority of employees are employed as operators (55.4%) or technical support staff (21.7%). There are regional variations, as shown in the chart below. The workforce is nearly evenly distributed between water (53.1%) and wastewater (46.9%) facilities.

Workforce demographic findings indicate that the sector is predominantly comprised of men who are 35 years of age and older. The sector has not attracted younger workers in recent years; only 23% of the workforce is between 19 and 35 years of age, compared to 33% of the BC population. The majority of the water sector workforce works in the Mainland/Southwest (61.9%) region of the province, followed by Vancouver Island/Coast (16.3%), the Interior (13.0%), and Northern BC (8.8%).

EOCP certified employees account for 3,305 members (53%) of the sector's workforce and employees without EOCP certification account for 2,972 members (47%) of the sector's workforce. Approximately one-third (34.2%) of employers reported that they provide additional compensation or a higher job rate maximum for positions that require either an EOCP designation or dual EOCP designation.

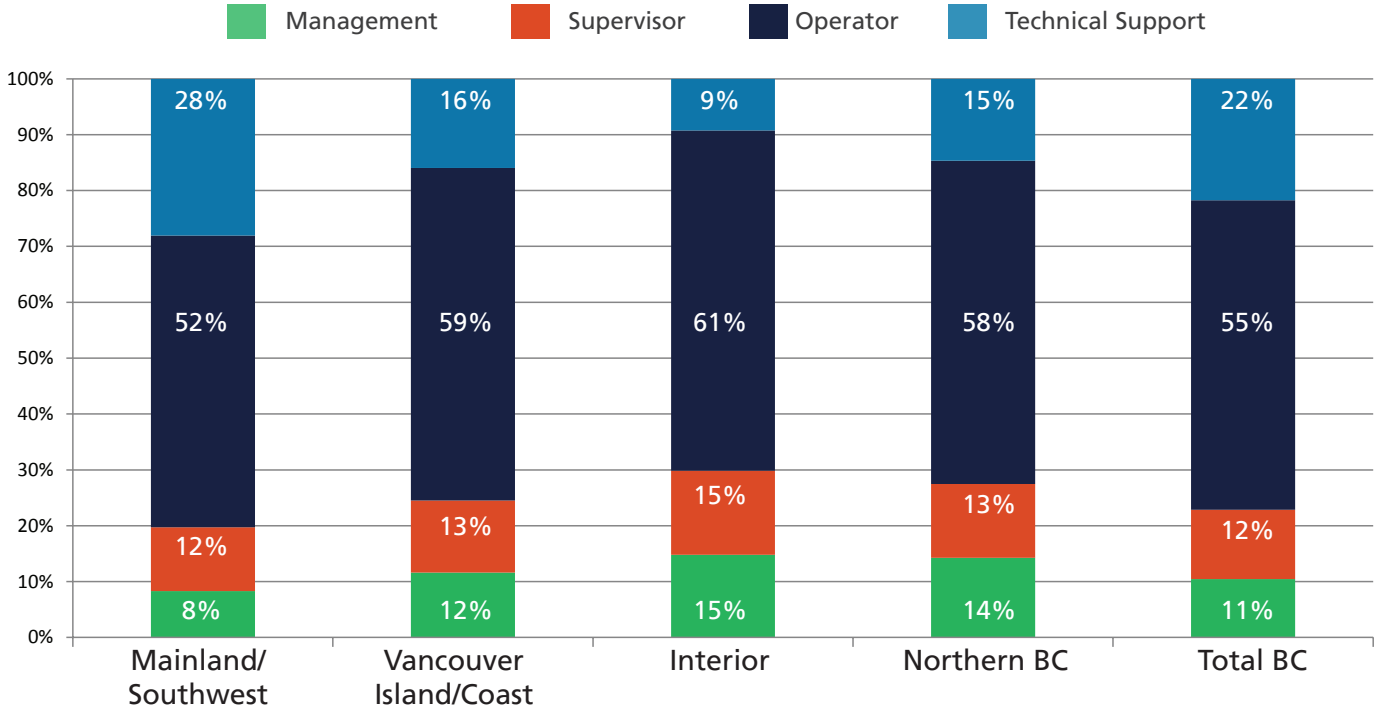
Hiring Needs

Projections show that the BC water and wastewater sector will see a turnover rate estimated at 29.7% of the workforce between 2015 and 2025. New hires for the water sector are anticipated to amount to a cumulative total of 3,319 by 2025 or about 53.1% of the estimated current total workforce. Operators will comprise the majority of new hires followed by technical support staff, supervisors, and management staff.

While employers might not fully understand the magnitude and impacts of upcoming retirements and turnover in water sector over the next five years, they report that they are in various stages of preparing for this change through succession planning and workforce development of junior staff.

Over one-quarter (27.5%) of survey contributors identified recruitment/retention challenges or staffing issues as the largest water sector workforce barrier that their organization will be facing over the next five years. In order to meet the demand for skilled water and wastewater sector employees, new pools of workers will need to be recruited and trained to meet hiring demands due to retirements, turnover and economic growth.

Occupation Type by Region



Education Needs

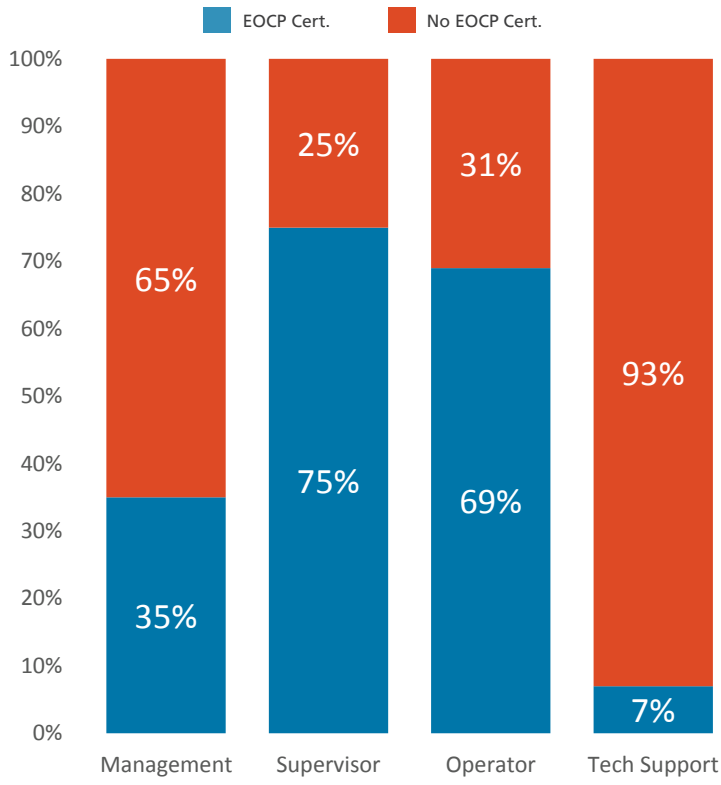
Skills, education, certification levels, experience, and competencies currently need improvement and will assume great importance to meet workforce demand and supply over the next five years. Identified training needs include both technical skills and essential skills (e.g., communications, literacy, mathematics, collaboration, conflict resolution and computer skills).

Salaries

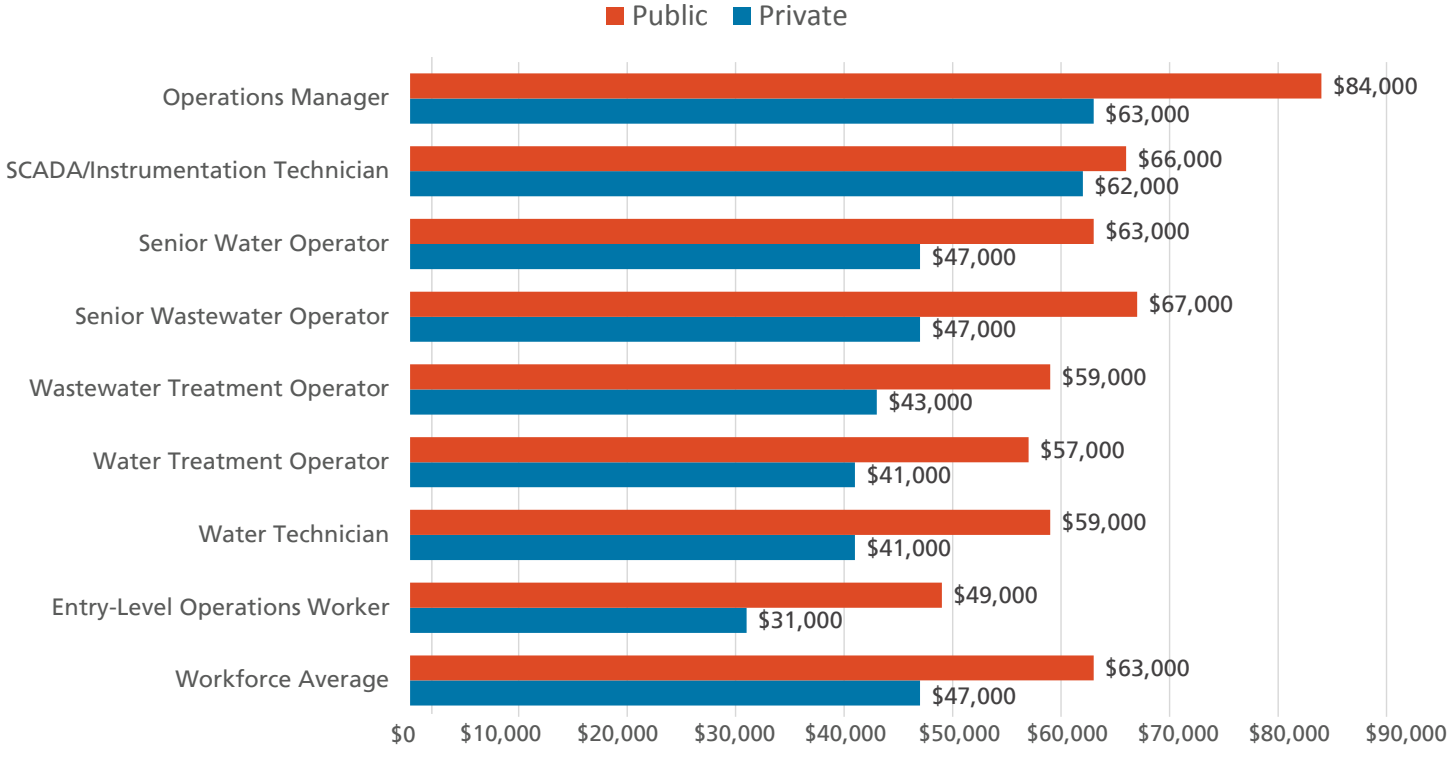
Jobs in the water and wastewater sector are well paid and available in communities throughout BC. The average salary in the sector ranges from $47,000 to $63,000, with public facilities offering significantly higher wages in all roles.

Entry level workers can earn wages starting at $31,000 in private facilities and $49,000 at public facilities. At the top end, Operations Managers, SCADA/Instrumentation Technician, and Senior Operators all have salaries over $60,000. The compensation levels shown in the chart below reflect base salary and do not include benefits or overtime.

EOCP Certification, by Occupation Type



Average Water Sector Salaries by Occupation for Public and Private Sector Employers



Conclusions

Vacancies due to retirement

Qualified, experienced workers are in short supply and on the verge of retirement. About one-third (36.3%) of the water and wastewater sector workforce is 50 years of age and over. Over one-third (43.9%) of upcoming retirements will be for operator positions and another one-third (34.9%) of retirements will be for management and supervisor positions. Furthermore, employers observed that most new hires are in response to retirement-related vacancies and new hires tend to be young, inexperienced and uncertified workers.

There is a need for succession planning at the sector level that includes knowledge transfer. Despite concerns expressed about impending retirements and the associated knowledge loss, only 27.4% of employers surveyed have established career development programs, and only 18.4% of employers have instituted succession planning for senior management positions.

> New hires for the water and wastewater sector are anticipated to amount to a cumulative total of 3,319 by 2025 or about 53.1% of the estimated current total workforce.

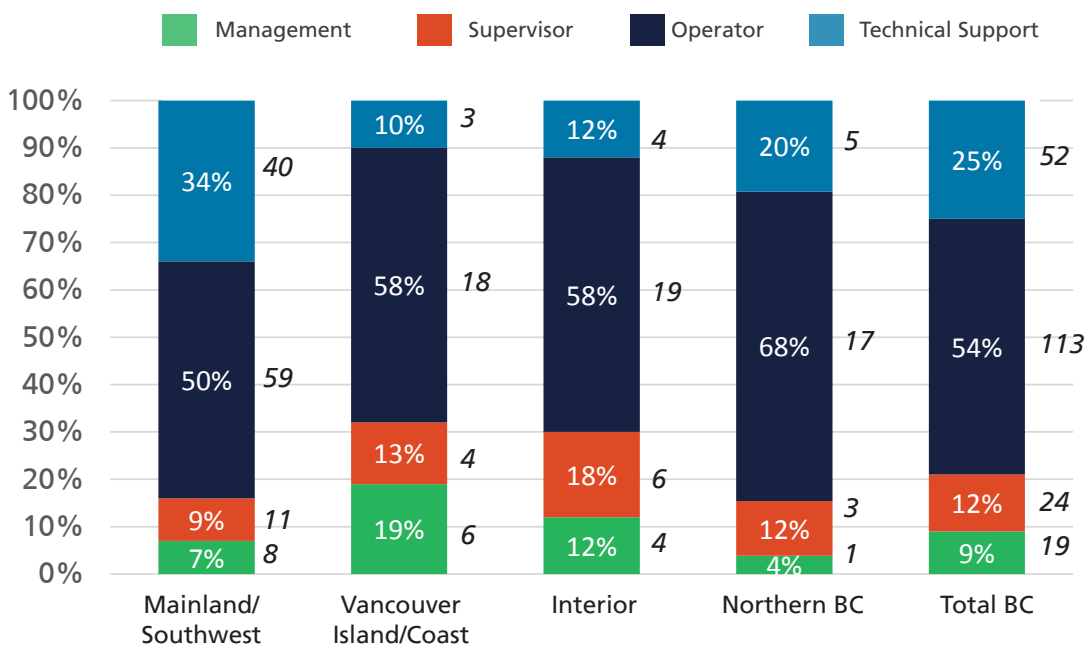
Labour supply

Opportunities for new entrants to the sector can be prohibitive. Several employers, educators, and regulators reported issues with high turnover rates among inexperienced staff and difficulty filling vacant positions because of difficulty progressing between operator levels. Barriers include lack of adequate entry-level training and resources for mentorship.

The water sector's demand for new employees today and into the future requires that new employees enter the workforce. There is a continued need to bring new workers into the water sector workforce and water sector related training programs. However, public awareness about careers in the water sector is low. Each role in the workforce is different, so each will require a unique public outreach approach and training program to ensure that individuals are matched with the most appropriate position.

Women are underrepresented in the water sector. Women accounted for only 12.9% of the water sector workforce and the numbers are even lower for operator and supervisor positions. It is unknown as to why women represent such a small proportion of the workforce, and research to identify the barriers to the industry and particular positions is required.

Current Vacancies by Region and Occupational Type - 2015



Education & Certification

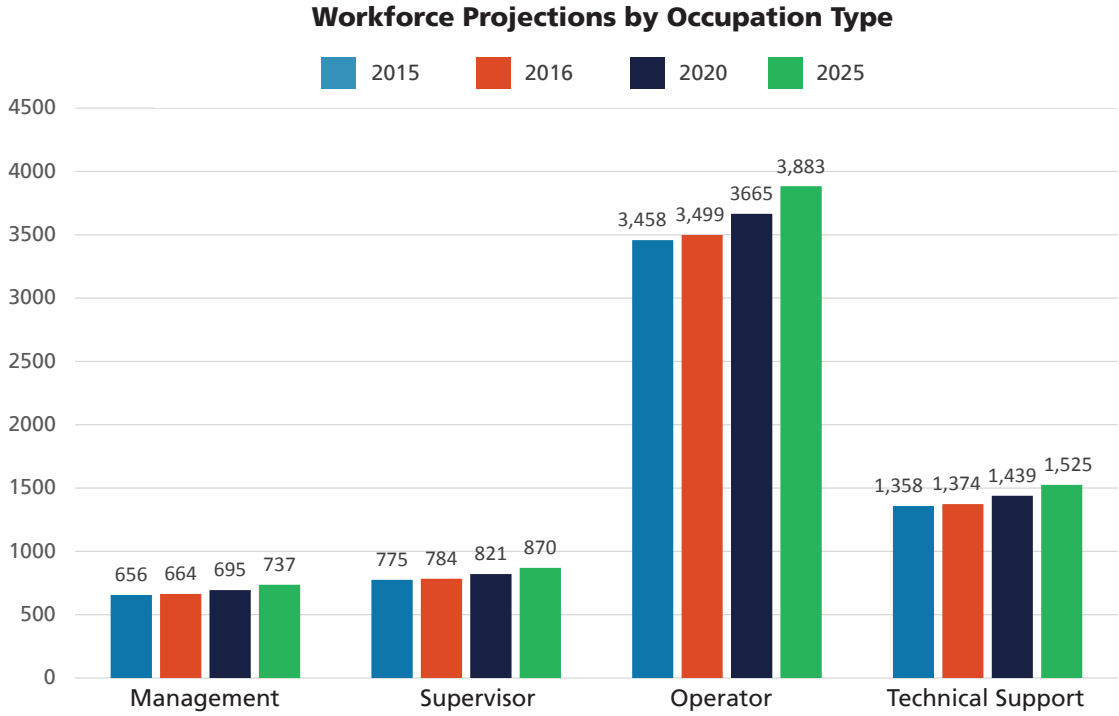
The competencies required for the occupations in the water and wastewater sector workforce are not defined and this limits the quality and consistency of education programs offered. There are no required courses that ensure operators, supervisors and managers have the knowledge, skills and abilities to carry out their role and responsibilities, resulting in knowledge and skill gaps.

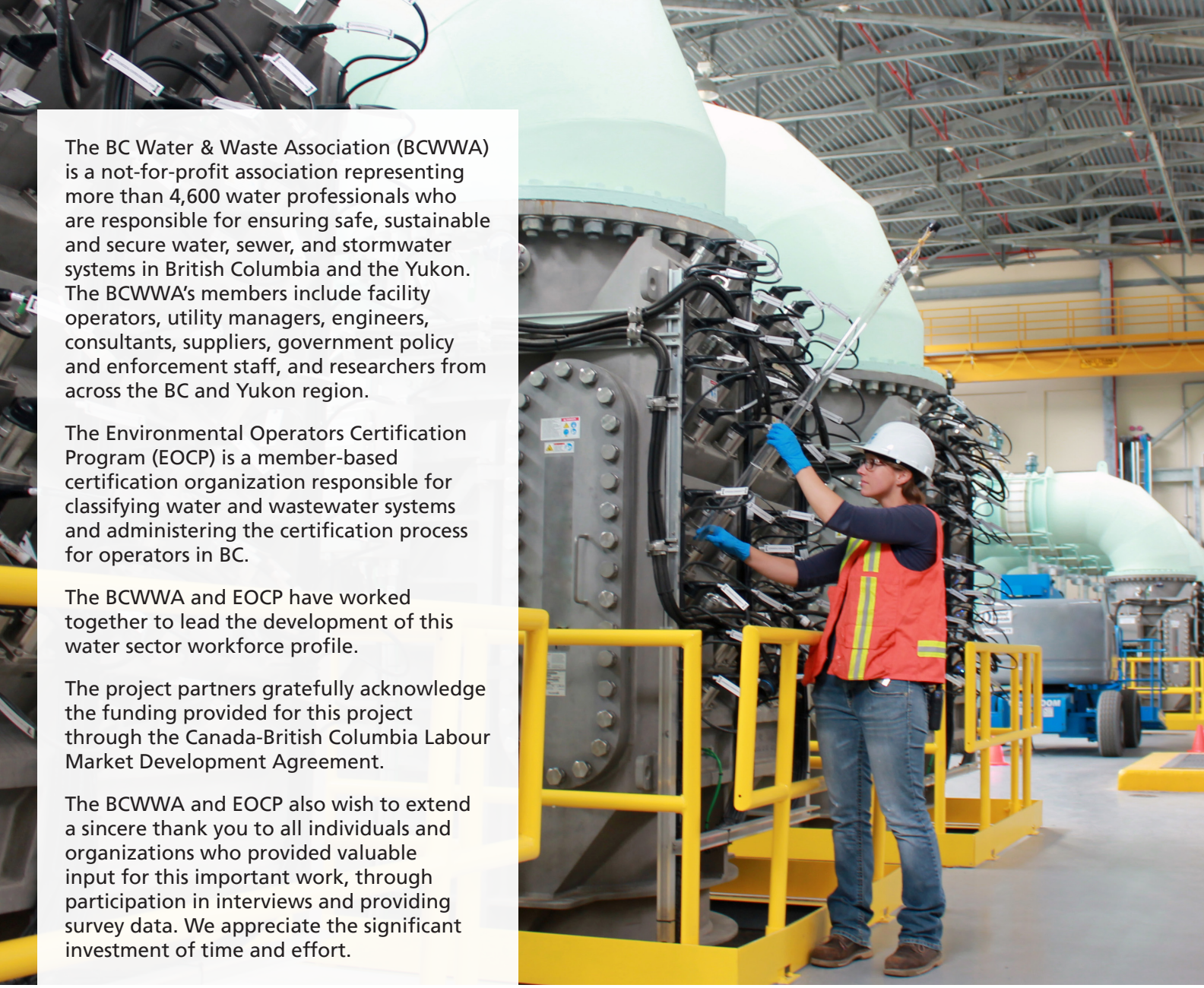
Existing education is insufficient to maintain skills and certification. Employers commented that there are many knowledge and skill gaps in the sector related to water quality and safety, technology and regulatory changes, and environmental impacts. New training should be developed and continuously updated to reflect these changes and ensure that each of the occupations in the water sector workforce is informed and prepared to properly implement these changes in their workplace.

Training opportunities are not available locally for many employers and their staff. More flexibility in terms of training models and training delivery are desired by water and wastewater sector employers. Some of the current barriers facing many employers include the cost to develop in-house training; travel and loss of work costs to send their staff to external courses; and the limited location of schools and instructors teaching continuing education units.

There are limited pathways for new operators to successfully enter the workforce, and additional education options are required to train under-employed individuals with related degrees and diplomas. Certification is required to progress in water and wastewater sector careers and prerequisites include relevant work experience; however, relevant work experience is difficult to obtain without having the required certification for sector positions.

Employers have identified the need for additional training including hands-on practical components as well as leadership, communication, and computer skills. All stakeholders interviewed noted that managers, supervisors, operators, and technicians need to have a transferrable set of skills that could be used sector-wide. Suggested skills gaps include mobile technology, communication and collaboration, leadership, and public engagement; these topics could be included in entry-level education programs as well as professional development programs for more seasoned staff.





The BC Water & Waste Association (BCWWA) is a not-for-profit association representing more than 4,600 water professionals who are responsible for ensuring safe, sustainable and secure water, sewer, and stormwater systems in British Columbia and the Yukon. The BCWWA's members include facility operators, utility managers, engineers, consultants, suppliers, government policy and enforcement staff, and researchers from across the BC and Yukon region.

The Environmental Operators Certification Program (EOCP) is a member-based certification organization responsible for classifying water and wastewater systems and administering the certification process for operators in BC.

The BCWWA and EOCP have worked together to lead the development of this water sector workforce profile.

The project partners gratefully acknowledge the funding provided for this project through the Canada-British Columbia Labour Market Development Agreement.

The BCWWA and EOCP also wish to extend a sincere thank you to all individuals and organizations who provided valuable input for this important work, through participation in interviews and providing survey data. We appreciate the significant investment of time and effort.

To access the full report, go to www.bcwwa.org

Canada

British Columbia

Funding provided through the Canada-British Columbia Labour Market Development Agreement.

BCWWA
BC WATER & WASTE ASSOCIATION

eocp