



# WORKFORCE STRATEGY

PREPARED FOR BCWWA AND EOCP  
AS PART OF THE BC WATER AND WASTEWATER INDUSTRY  
SECTOR LABOUR MARKET PARTNERSHIPS PROGRAM PROJECT

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BY:



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## EXECUTIVE SUMMARY

### *Message from the Project Advisory Committee*

Over 6,200 people in British Columbia work daily to operate and maintain systems that treat and transport water from its source to our taps and back to the environment. Most of these workers are relatively invisible to the public; yet but we implicitly trust them as guardians of public health and the environment.

However, our workforce is changing. It is facing significant difficulties in recruiting enough keen, qualified applicants for job openings, and also in ensuring existing and new workers have what it takes to do their jobs effectively and grow in their careers. This document is the culmination of two years of research, consultations and hard work by those in BC's water and wastewater [industry](#)—employers, employees, associations and professional bodies, government, training providers, suppliers and other stakeholders—to address the challenges our workforce is facing.

The workforce development strategy presented here is a well thought out action plan; one that [industry](#) is calling for the immediate implementation of. Time is of essence. More than 50 percent of the sector's dedicated workforce—3,300 people—will need to be replaced due to retirements, attrition and job growth over the next 10 years. Younger workers, and workers new to the sector often lack appropriate skills and experience to replace them. Employer capacity for strategic, efficient human resource planning, development and deployment to support our changing workforce is varied; aside from a few large employers, many do not have the required tools or experience.

### THE STRATEGY

[Industry](#) has worked hard to develop a comprehensive strategy; that includes:

1. [A vision](#) for the workforce.
2. A set of values by which implementation of the strategy will be guided.
3. Recommendations for a [Project Committee](#), to guide the implementation of the strategy; and a project manager to provide support and coordinate implementation activities. This structure facilitates immediate implementation of the strategy. At the same time, [industry](#) is exploring the potential of a [Water Workforce Commission](#) to assume on-going responsibility for implementation of the strategy and collaborative dialogue on workforce issues.
4. [Goals, objectives, and tactics](#)—five (5) goals, twenty-two (22) objectives, and thirty-three (33) tactics around which the strategy has been built. Achieving these goals will overcome barriers, identified in the [BC Water & Wastewater Sector Workforce Profile](#) completed in 2015 and

*Our vision is a competent, sustainable [workforce](#) providing safe water for healthy, thriving BC communities and the environment.*

***As industry professionals, we value:***

- *Our role as trusted guardians of public health and the environment, and important contributors to the prosperity of communities*
- *Unwavering integrity, ethics, and accountability to our stakeholders*
- *Competence, knowledge, skills, and lifelong learning*
- *Leadership through collaboration and teamwork*
- *Excellence through innovation*

confirmed by consultations conducted in 2016; which are currently hindering [industry](#) from realizing its vision of a competent, sustainable workforce.

#### **Workforce Strategy Goals**

1. A robust competency framework is the foundation for HR management, training and certification in the workforce
2. Succession planning and knowledge transfer mechanisms facilitate smooth retirement and replacement transitions
3. The water and wastewater industry has an enhanced image and brand that attracts new entrants
4. Professional development is accessible, applicable and continuous from employment entry to retirement
5. Employers use best practice HR tools and processes for motivating, managing and retaining employees

5. [An implementation plan](#) comprised of two (2) phases, with an approach based on *initiating tactics concurrently* subject to dependencies between tactics and available resources. This approach will enable [industry](#) to build capacity and ultimately achieve goals quickly.

**Phase 1** consists of three (3) stages and will see the launch of twelve (12) tactics—those critical to effective guidance and coordination, and deemed highest priority.

**Phase 2** will include launching the remaining twenty-one (21) tactics; implementation schedule to be developed once phase 1 has been initiated and after reviewing and re-confirming priorities for action vis-à-vis what has already been accomplished and current conditions.

6. [Sustainability considerations](#)—[industry's](#) initial thinking about how to identify and secure the necessary resources for tactics that will require on-going sustainment.
7. [An evaluation plan](#)—a preliminary logic model and key performance indicators for measuring progress towards achieving goals and determining the effectiveness of the strategy; to be reviewed and confirmed by the project committee once it has been established.

The challenges [industry](#) faces in implementing this strategy and achieving its goals cannot be underestimated. Collaboration, partnerships and relationship building are the cornerstone for success; yet these areas are also the sector's greatest weaknesses. The sector is represented by a number of associations and professional bodies, each with their own mandate, services and members; which frequently overlap and compete. As a group, these organizations do not have a solid or successful track record of working together. That said, the process of creating this workforce strategy has generated significant enthusiasm and participation from all stakeholders in the sector, which bodes well for a positive and productive working relationship in the future. [Industry](#) and its supporters must remain diligent and continue to nurture this new relationship.

Finally, this strategy is intended to be a living document. Changes in conditions and priorities over time, as well as other activities underway in the sector will require adjustment of the strategy. Regular monitoring and updating is critical.

As guardians of the province's drinking water and wastewater systems, [industry](#) is committed to working together and doing what it takes to ensure these systems remain safe, sustainable and secure.

## HOW TO READ THIS STRATEGY

### BACKGROUND AND CONTEXT

This workforce strategy is the culmination of two years of research and consultation with employers, employees, associations and professional bodies, government, training providers, and suppliers—key stakeholders in the water and wastewater sector. Development of the strategy was guided by a Project Advisory Committee consisting of representatives from [industry](#) and coordinated by the BC Water & Waste Association (BCWWA) and the Environmental Operators Certification Program (EOCP). Funding to develop the strategy was provided through the Sector Labour Market Partnerships Program administered by the BC Ministry of Jobs, Tourism, Skills and Training. The content of this document has been prepared in accordance with the Strategy and Evaluation Guidelines for Sector Labour Market Partnerships Program projects.

A [BC Water & Wastewater Sector Workforce Profile \(December 2015\)](#), was the first piece of work undertaken, and provides a comprehensive profile of the [workforce](#) responsible for water and wastewater operations in BC. It offers basic labour market information such as labour supply and demand projections to 2025 and current [workforce](#) demographics, and it also outlines a number of key challenges facing the competence and sustainability of the [workforce](#).

In response to the 2015 report findings, activities undertaken the following year focused on developing a comprehensive strategy and implementation plan to address challenges outlined in the workforce report. Consultations with [industry](#) were held in November and December of 2016. They included three (3) single-day, in-person regional sessions and nine (9) phone interviews, primarily with employers but also including representatives from associations and professional bodies and government; and one (1) single-day, in-person session with training providers from BC offering services to the sector.

The consultations confirmed that there are five (5) key barriers impacting the [workforce](#) (see Figure 1). They also confirmed some important considerations with regard to implementing the resulting workforce strategy, as outlined below.

**Collaboration, relationship building and partnerships in the sector require development and nurturing.**

- The [industry](#) lacks experience working successfully together, although engagement in developing the workforce development strategy appears to herald a new and positive approach
- Three associations have experienced turnover in staff, including those in executive positions
- Industry participants in the consultations are very supportive and are waiting to be called on to implement solutions; but some, in particular smaller employers, lack experience with workforce development and/or with being part of an industry-wide initiative.

**Figure 1 Workforce Barriers**

#### *Barriers Facing Workforce*

1. Gaps in knowledge, skills and abilities
2. Limited pathways for entry and advancement in operations
3. Recruitment challenges
4. Career opportunities in the sector not well understood
5. Knowledge loss due to an aging workforce nearing retirement

**There is a need for continuity in project management and coordination.**

- Other projects are underway in the sector that impact the strategy (e.g. System Risk Management Plans and Operator Competency Framework), therefore this strategy must be a living document that is adjusted as projects that address elements of this strategy unfold and progress.

**Implementation of the strategy is urgent and critically important.**

- Future public safety is potentially at risk—the [workforce](#) safeguards public health and the environment by making sure the province’s water and wastewater systems are safe, reliable and secure
- The barriers impacting the [workforce](#) are significant and although they can be overcome, it will take time, resources and focused action.

In February 2017, the results of the consultations were reviewed by the Project Advisory Committee and formulated into the workforce strategy presented in this document. Implementation of this strategy is expected to:

- Fulfill the vision and values identified by the [industry](#), for the [industry](#)
- Be governed by a culture of openness, transparency and sharing
- Require individual and collaborative action.

GLOSSARY OF TERMS

A glossary of terms is provided in Figure 2, to clarify the meaning of key terms used in this document.

Figure 2 Glossary of Terms

GLOSSARY OF TERMS	
TERM	MEANING
<b>Associations and Professional Bodies</b>	All associations and professional bodies relevant to the BC water and wastewater sector.
	APEGBC      Association of Professional Engineers and Geoscientists of British Columbia
	ASTTBC      Applied Science Technologists and Technicians of British Columbia
	BCGWA      British Columbia Ground Water Association
	BCWWA      BC Water & Waste Association
	CWSA      Coastal Water Suppliers Association
	EOCP      Environmental Operators Certification Program
	PWABC      Public Works Association of BC
	WSABC      Water Supply Association of BC
<b>Career</b>	A career is an individual’s journey through learning, work and other aspects of life relevant to a given area or industry.
<b>Competencies</b>	<b>Occupational competencies</b> are defined in the form of behaviours, skills, knowledge, and attributes required for successful practice in an occupation. <b>Job competencies</b> are defined in the form of behaviours, skills, knowledge, and attributes required for successful performance in the workplace.
<b>Competency-based assessment (CBA)</b>	A process where an assessor reviews evidence collected on an individual and determines whether it meets the standard set for competency or achievement of competencies required for the successful performance in an occupation or job.

GLOSSARY OF TERMS	
TERM	MEANING
<b>Competency Framework</b>	A structure that sets out and defines each individual competency required by individuals working in an occupation or an organization.
<b>DARCI Model</b>	<p>The DARCI model is a tool for establishing clear accountability and communications; it can be used for any type of project.</p> <p>The DARCI model clarifies roles in a way that makes it clear:</p> <ul style="list-style-type: none"> <li>• Who has approval authority</li> <li>• Who is accountable and responsible for undertaking the activity</li> <li>• Who needs to be consulted</li> <li>• Who needs to be kept informed.</li> </ul>
<b>Employers</b>	All the types of organizations employing people working in the industry e.g., companies, municipalities, water utilities, etc.
<b>Goal</b>	A goal broadly describes a generic action or desired outcome.
<b>Industry</b>	Key stakeholders in the water and wastewater sector including: employers, employees, associations and professional bodies, government, training providers, and suppliers.
<b>Job</b>	A position of paid employment.
<b>Labour</b>	Employees (union and non-union); and senior representatives from organized labour.
<b>Objectives</b>	Specific and tangible actions intended to meet a goal.
<b>Occupation</b>	A broad category of jobs with similar characteristics.
<b>Project Committee</b>	A group of industry stakeholders who provide guidance for the implementation of workforce strategies developed under the Sector Labour Market Partnerships Program.
<b>Tactic</b>	An action that is planned and used to achieve a particular goal.
<b>Timeline for Implementing Tactics</b>	<p>0-12 months = First 12 months after strategy launch date</p> <p>1-3 Years = 1-3 years following strategy launch date</p> <p>4-5 Years = 4-5 years following strategy launch date</p>



GLOSSARY OF TERMS	
TERM	MEANING
<b>Water</b>	The term water encompasses water, wastewater and storm water.
<b>Water Workforce Commission</b>	<p>A collaborative partnership between the representative water workforce associations (APEGBC, ASTTBC, EOCP), partner Ministries responsible for water (Health, Environment, etc.), employers/employees, other industry associations, professional bodies and training providers (BCGWA, BCWWA, CWSA, Okanagan University, PWABC, Thompson Rivers University, WSABC, etc.), in order to provide:</p> <ul style="list-style-type: none"> <li>• On-going cross-sector engagement to monitor and evaluate the effectiveness of a water-related human resources strategy</li> <li>• A shared understanding of how training, labour mobility, and job creation can be improved in order to manage water</li> <li>• Leadership, co-ordination, and collective responses to the challenges in the job sector for water professionals</li> </ul>
<b>Workforce</b>	<p>The <a href="#">BC Water &amp; Wastewater Sector Workforce Profile (December 2015)</a> identifies the workforce as being comprised of individuals spending more than 50% of their day on the day-to-day maintenance and operations of water and wastewater systems.</p> <p>The Profile includes examples of occupations and jobs represented in the workforce, not a comprehensive list. This will be addressed in the next phase of work, which involves compiling an inventory of all direct and indirect occupations and jobs in the BC water and wastewater industry.</p>

## WORKFORCE STRATEGY

### VISION

Vision for the [industry](#) as a whole:

***Safe water for healthy, thriving BC communities and a sustainable environment.***

Vision for the workforce development strategy:

***A competent, sustainable [workforce](#) providing safe water for healthy, thriving BC communities and the environment.***

### VALUES

As [industry](#) professionals, we value:

- Our role as trusted guardians of public health and the environment, and important contributors to the prosperity of communities
- Unwavering integrity, ethics, and accountability to our stakeholders
- Competence, knowledge, skills, and lifelong learning
- Leadership through collaboration and teamwork
- Excellence through innovation

### PROJECT COMMITTEE

Consistent with the Strategy and Guidelines for Sector Labour Market Partnerships Program projects, [industry](#) is prepared to form a new Project Committee to guide implementation of the workforce strategy. [Industry](#) will also ensure that the new Project Committee is structured to ensure partnership decision-making.

To maintain momentum of the project, members of the existing Project Advisory Committee are prepared to assume the role of Project Committee, until a new Project Committee is constituted. Alternatively, and in the event that the [Water Workforce Commission](#) currently being explored is formed, it may be more appropriate to have the Commission take on the responsibilities of the Project Committee.

In the meantime, the [industry](#) and Project Advisory Committee will continue to move forward with implementing the workforce strategy by:

- Operating openly and transparently
- Facilitating sharing and collaboration amongst members and with the organizations they represent

- Acting in the best interests of the [industry](#) as a whole
- Using consensus decision-making.

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## PROJECT MANAGER

It is recommended that a project manager be hired to provide administrative support to the Project Committee and to coordinate implementation activities. This should be done through an open and transparent process. The position should be publicly posted and the candidate selected by the Project Committee.

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## WORKING GROUPS

Consultation participants expressed keen desire to not only see immediate action on the strategy, but also to participate actively in the implementation process *themselves*, and to encourage other [industry](#) representatives to do the same. With this in mind, the Project Advisory Committee recommends that the *work* of implementing tactics be undertaken by *working groups*. For example, working groups can be comprised of one or more [industry](#) representatives with a specific interest and/or role in the workforce that is related to a particular tactic or group of tactics. This type of approach respects the way in which the water sector operates in BC, as well as supports employers/employees, associations and professional bodies, government, training providers, etc. to *work together* to achieve the goals of the workforce strategy. Working groups can engage expertise such as consultants or other experts on an as needed basis. Communication and coordination amongst working groups can be facilitated and supported by the Project Committee and Project Manager.

The nature of the working groups, including roles and responsibilities, can be established and documented at the same time as the new Project Committee is established.

## GOALS, OBJECTIVES, AND TACTICS

A total of five (5) goals, twenty-two (22) objectives and thirty-three (33) tactics are identified in this workforce strategy.

This section sets out the goals, objectives and tactics in a series of tables.

- **Goals** are presented one per table.
- **Objectives and tactics** for each goal are based on solutions generated by participants during the [industry](#) consultation process.
  - A project plan will be required to implement each tactic, but the plans are not included as part of this strategy. It is strongly recommended that the Consultation Results Report, available from BCWWA and EOCP, be referenced when scoping project plans. The report provides greater richness of ideas and solutions from consultation participants than are able to be included in this document.

- Although some tactics are interdependent, the intent is to implement as many tactics concurrently and quickly as possible, leveraging partnerships and existing resources.
- **Timelines** for each tactic are estimated and shown in the table.
  - For planning purposes, each tactic has been assigned one of three estimated timelines, calculated from the implementation launch date of the strategy. For example:
    - 0-12 months *after* the implementation launch date
    - 1-3 years *after* the implementation launch date
    - 4-5 years *after* the implementation launch date
- **Roles** involved in implementing each tactic, have been identified.
  - A modified DARCI Accountability Model (see Figure 2) has been used to clarify the various roles required to successfully implement tactics.

**Figure 3 DARCI Model**

<b>Communicator/ Coordinator*</b>	<b>Accountable</b>	<b>Responsible</b>	<b>Consulted</b>	<b>Informed</b>
Key communicator and coordinator for the tactic	Party(s) fully accountable for implementing the tactic	Party(s) responsible for doing the work of implementing the tactic	Party(s) from whom input will be solicited	Party(s) to be kept apprised of relevant developments related to the tactic

\*Normally this function is the “Decider” in the DARCI Accountability Model, but this role has been changed for illustrative purposes to fit the nature of the implementation approach recommended in this workforce strategy. For clarity, the “D” continues to be used to identify this role (i.e., avoids having two “Cs”).

**Table 1 Goal 1**

<b>GOAL 1</b> A robust competency framework is the foundation for HR management, training and certification in the <a href="#">workforce</a>			
<b>Objectives</b>	<b>Tactics</b>	<b>Timeline</b>	<b>Role</b>
<p>a. Identify occupations and jobs within the <a href="#">workforce</a> and <a href="#">industry</a></p> <p>b. Define competencies required for occupations and jobs within the <a href="#">workforce</a></p> <p>c. Increase awareness and capacity amongst employers and training providers to use competency frameworks and their products</p> <p>d. Build capacity of employers and training providers to use competency framework products</p>	1.1 Create an inventory of occupations and jobs, including a process for regular maintenance and updating	Start: 0-12 months Finish: 0-12 months	<p>D = Project Committee</p> <p>A = Working Group (WG): Representatives from <a href="#">employers, labour, associations and professional bodies</a>, government, training providers</p> <p>R = WG members / Consultant</p> <p>C = employers, labour, associations and professional bodies, training providers</p> <p>I = <a href="#">industry</a></p>
	1.2 Create competency profiles for occupations and jobs		
	1.3 Design and create templates for competency-based job descriptions and job ads		
	1.4 Work with partners to leverage content for training and “how to guides” on competency frameworks and their key products; identify gaps, create and execute plan to address	Start: 0-12 months Finish: 1-3 years	
	1.5 Pilot competency training and “how to guides”; evaluate, refine and fully implement training delivery	Start: 1-3 years Finish: 1-3 years +	
<p><b>Additional Information</b></p> <p>Tactic 1.4</p> <ul style="list-style-type: none"> <li>Competency framework products to include at a minimum: <ul style="list-style-type: none"> <li>Competency-based job descriptions and job ads</li> <li>Competency-based assessment for hiring, job placement and training needs, awarding training credentials and occupational certification, etc.</li> </ul> </li> </ul>			

<b>GOAL 1</b> A robust competency framework is the foundation for HR management, training and certification in the <a href="#">workforce</a>			
<b>Objectives</b>	<b>Tactics</b>	<b>Timeline</b>	<b>Role</b>
<p>e. Training, and assessments of training outcomes, for water and wastewater occupations and jobs is competency-based</p> <p>f. EOCP operator certification is relevant and certification is realistically attainable</p>	<p>1.6 Create, document and implement standards for development and delivery of training courses and programs; including a mechanism to confirm on-going compliance</p> <p>1.7 Resolve difficulties associated with obtaining certification requirements (hours), certification shelf-life and currency requirements (CEUs)</p> <p>1.8 Review the certification program to confirm it meets the needs it is intended to meet (or needs to meet)</p>	<p>Start: 1-3 years</p> <p>Finish: 4-5 years</p>	<p>D = Project Committee</p> <p>A = Working Group (WG): Representatives from <a href="#">employers</a>, <a href="#">labour</a>, <a href="#">associations and professional bodies</a>, BC Ministry of Health, training providers</p> <p>R = consultant</p> <p>C = employers, labour, BC Ministries of Health and Environment, associations and professional bodies, training providers</p> <p>I = <a href="#">industry</a></p>
<p><b>Additional Information</b></p> <p>Tactic 1.6</p> <ul style="list-style-type: none"> <li>• Training standards to include at a minimum: <ul style="list-style-type: none"> <li>○ Documented learning outcomes based on occupational and/or position competency standards</li> <li>○ Competency-based assessment strategies for evaluating participant achievement of learning outcomes</li> <li>○ Statement of specific occupation and/or position competencies achieved as a result of successful completion of training</li> <li>○ Type of certificate/credential issued e.g., achievement - not attendance-based</li> <li>○ Roles and responsibilities for curriculum content development, maintenance and updating</li> <li>○ Criteria and/or qualifications for instructors <ul style="list-style-type: none"> <li>▪ Facilities, equipment, technology, etc. requirements</li> <li>▪ Practical and/or work experience components</li> <li>▪ Process for designating course/program as “Industry Approved” i.e., meets the standard set by <a href="#">industry</a></li> </ul> </li> </ul> </li> </ul>			

<b>GOAL 1</b>	A robust competency framework is the foundation for HR management, training and certification in the <a href="#">workforce</a>		
<b>Objectives</b>	<b>Tactics</b>	<b>Timeline</b>	<b>Role</b>
<ul style="list-style-type: none"> <li>○ Implementation to include setting and communicating dates for alignment of existing and new courses/programs with standards</li> <li>○ Compliance -- may be as simple as training provider attestation</li> </ul> <p>Tactics 1.7 and 1.8</p> <ul style="list-style-type: none"> <li>● Consultant should have specific expertise in certification / credentialing models and programs</li> </ul>			

**Table 2 Goal 2**

<b>GOAL 2</b> Succession planning and knowledge transfer mechanisms facilitate smooth retirement and replacement transitions			
<b>Objectives</b>	<b>Tactics</b>	<b>Timeline</b>	<b>Role</b>
a. Employers have easy access to adaptable, best practice succession planning tools	2.1. Work with partners to identify and leverage existing succession planning tools; identify gaps, and develop and execute plan to address gaps	Start: 0-12 months Finish: 1-3 years	D = Project Committee A = Working Group (WG): Representatives from <a href="#">employers</a> , <a href="#">labour</a> , <a href="#">associations</a> and <a href="#">professional bodies</a> , equipment vendors, training providers R = WG members / consultant C = employers, equipment vendors, training providers I = <a href="#">industry</a>
b. Employers can easily identify and assess benefits and costs of adopting new and existing technologies	2.2. Work with partners to identify/research and assess technologies for adoption (i.e. AutoCAD, GIS, etc.)	Start: 0-12 years Finish: 4-5 years	
	2.3. Work with partners to Identify and document best practices of technology adoption	Start: 1-3 years Finish: 4-5 years	
	2.4. Hold site-tours to showcase best practices of technology adoption	Start: 1-3 years Finish: 4-5 years	

**Additional Information**

Tactic 2.1

- Succession planning tools to include but not be limited to:
  - Recruitment strategies
  - Hiring practices
  - Employee mobility plans
  - Templates for tools
  - Training to use tools

Tactic 2.2

- Knowledge transfer tools to include but not be limited to:
  - Standard Operating Procedures (SOPs)
  - Templates e.g., SOP



GOAL 2 Succession planning and knowledge transfer mechanisms facilitate smooth retirement and replacement transitions			
Objectives	Tactics	Timeline	Role
<ul style="list-style-type: none"> <li>○ Best operating practices case studies</li> <li>○ Industry performance data and key performance indicators (KPIs)</li> <li>○ Training</li> </ul>			
<p>c. Employers and job seekers are able to easily connect with each other</p> <p>d. Employers are able to attract and hire job candidates with the right skills</p>	<p>2.5. Work with partners (Work BC, others) to identify and leverage existing connection tools</p> <p>2.6. Work with partners to research and identify best practices; adapt/develop and pilot <a href="#">industry</a>-wide targeted recruitment strategy; evaluate, refine and fully implement</p>	<p>Start: 1-3 years Finish: 1-3 years</p>	<p>D = Project Committee A = Working Group (WG): Representatives from <a href="#">employers</a>, <a href="#">labour</a>, <a href="#">associations and professional bodies</a>, training providers, students R = WG members / consultant C = employers, associations and professional bodies, training providers, students I = <a href="#">industry</a></p>
<p><b>Additional Information</b> Tactic 2.5 Ensure tool is capable of handling all types of jobs and careers e.g., entry-level, front line, support, technical, supervisory, managerial, etc.</p>			

**Table 3 Goal 3**

<b>GOAL 3</b> The water and wastewater <a href="#">industry</a> has an enhanced image and brand that attracts new entrants			
<b>Objectives</b>	<b>Tactics</b>	<b>Timeline</b>	<b>Role</b>
<p>a. The <a href="#">industry</a> is recognized for its employment opportunities in green/environment, health and safety sectors</p> <p>b. The <a href="#">workforce</a> is associated with “first responders” e.g., workers are “first responders” similar to police, firefighters, etc.</p> <p>c. The <a href="#">industry</a> is viewed as a desirable career choice</p> <p>d. Career information and exploration opportunities are easily available and accessible</p>	<p>3.1. Work with partners to identify and leverage existing best practices and resources for marketing careers; design and implement a sustained, multi-media marketing campaign; re-brand <a href="#">industry</a></p>	<p>Start: 0-12 months Finish: 4-5 years</p>	<p>D = Project Committee A = Working Group (WG): Representatives from <a href="#">employers, labour, associations and professional bodies</a>, training providers R = WG members / marketing and communications consultant C = employers, associations and professional bodies, training providers, other stakeholders I = <a href="#">industry</a></p>
	<p>3.2. Develop career path infographic showing career mobility options throughout the sector, from entry level to executive i.e., horizontal and vertical pathways</p>	<p>Start: 0-12 months Finish: 1-3 years</p>	
	<p>3.3. Create career awareness materials including two curriculum resources; work with partners (BC Ministry of Education, Work BC, etc.) to leverage templates, packaging, distribution/publication channels</p>	<p>Start: 1-3 years Finish: 1-3 years</p>	
	<p>3.4. Offer and/or participate in outreach activities to engage students, job seekers, and the public e.g., public works days, career fairs, open houses</p>		
	<p>3.5. Inventory and assess the effectiveness of current activities; develop options for enhancements</p>		

<b>GOAL 3</b> The water and wastewater <a href="#">industry</a> has an enhanced image and brand that attracts new entrants			
<b>Objectives</b>	<b>Tactics</b>	<b>Timeline</b>	<b>Role</b>
<p><b>Additional Information</b> Tactic 3.3</p> <ul style="list-style-type: none"> <li>Two curriculum resources: one aimed at career exploration for high school students, the other focused on water science/ environment for elementary school students</li> </ul>			

**Table 4 Goal 4**

GOAL 4 Professional development is accessible, applicable and continuous from employment entry to retirement			
Objectives	Tactics	Timeline	Role
a. Available training is affordable and easy to find and access	4.1. Map existing training and highlight accessibility barriers; develop options to address barriers	Start: 1-3 years Finish: 4-5 years	D = Project Committee A = Working Group (WG) - same WG responsible for tactic 1.6 R = WG members / consultant / training providers C = <a href="#">employers</a> , <a href="#">labour</a> , <a href="#">associations and professional bodies</a> , training providers, BC Ministries of Health, Environment, Advanced Education I = <a href="#">industry</a>

GOAL 4 Professional development is accessible, applicable and continuous from employment entry to retirement			
Objectives	Tactics	Timeline	Role
<p>b. Employee development and training is aligned to job / occupation competencies and other employer requirements</p> <p>c. Employees can access training options on and off-the-job, to obtain competencies; and have their competencies recognized in a manner acceptable to their employers</p> <p>d. Build training capacity within the <a href="#">workforce</a>—facilitate employees becoming trainers and mentors</p>	<p>4.2. Conduct training needs assessments and develop individual learning plans for employees based on results</p> <p>4.3. Work with partners to identify/develop and pilot training options to address needs in individual learning plans</p> <p>4.4. Work with partners to identify/leverage, research and adapt best practice mentoring programs to the <a href="#">industry</a> and pilot an <a href="#">industry</a>-wide mentoring program; evaluate, refine and move to full implementation</p> <p>4.5. Work with partners to source content and templates to create a co-learning/ mentoring guide for employees</p> <p>4.6. Work with partners to research best practices; design and implement an in-house training model e.g., job shadowing, cross-training, etc.</p> <p>4.7. Confirm, source/develop and deliver training for specific topics of interest to employers</p> <p>4.8. Work with partners to identify, adapt, and deliver a “train-the-trainers” program; incorporate in relevant post-secondary occupational training programs</p> <p>4.9. Recruit, engage and train retirees to be trainers and mentors</p>	<p>Start: 1-3 years Finish: 4-5 years +</p>	<p>D = Project Committee A = Working Group (WG) Representatives from: <a href="#">employers</a>, <a href="#">labour</a>, training providers R = WG members / consultant / training providers C = employers, labour, associations and professional bodies, training providers I = <a href="#">industry</a></p>

<b>GOAL 4</b> Professional development is accessible, applicable and continuous from employment entry to retirement			
<b>Objectives</b>	<b>Tactics</b>	<b>Timeline</b>	<b>Role</b>
<p><b>Additional Information</b></p> <p>Tactics 4.2 and 4.3</p> <ul style="list-style-type: none"> <li>• Training needs assessments are conducted using competency-based assessment</li> <li>• Training options to include formal and informal choices; formal training such as taking a training course or program, informal training such as independent but structured learning from reading a book, watching a videos, doing work-related assignments, and/or some combination of activities, etc.</li> </ul> <p>Tactic 4.4</p> <ul style="list-style-type: none"> <li>• Mentoring program should target employees replacing retirees as mentees first, to support succession planning and knowledge transfer initiatives; expand the program to other employees over time</li> </ul> <p>Tactic 4.7</p> <ul style="list-style-type: none"> <li>• Desired training topics identified in industry consultations included: leadership, decision-making, problem solving, and new water and wastewater treatment and distribution technologies and practices</li> </ul>			

Table 5 Goal 5

GOAL 5 Employers use best practice HR tools and processes for motivating, managing and retaining employees			
Objectives	Tactics	Timeline	Role
<p>a. Employers have easy access to best practice HR management tools and processes, as well as training in how to use them</p> <p>b. Employees feel valued</p> <p>c. Encourage inclusive and diverse workplaces throughout <a href="#">industry</a></p> <p>d. Provide easy access to information, resources, and tools developed as part of the workforce strategy</p> <p>e. Establish relationships and partnerships to support implementation of the strategy and on-going collaboration on <a href="#">workforce</a> issues and initiatives</p>	<p>5.1. Establish governance model; source and deliver governance training to Project Committee members</p> <p>5.2. Work with partners to identify and leverage storage, distribution, and communication forums/channels for resources and tools as they are developed through the strategy</p> <p>5.3. Collect/create and disseminate sample HR policies for inclusive and diverse workplaces</p> <p>5.4. Research, identify and disseminate best HR practices of employers in the <a href="#">industry</a> and “Employers of Choice”</p>	<p>Start: 0-12 months Finish: 0-12 months</p>	<p>D = Project Committee A = Working Group (WG): Representatives from <a href="#">employers, labour, associations and professional bodies</a>, training providers R = consultant C = employers, labour, associations and professional bodies, training providers I = <a href="#">industry</a></p>
	<p>5.5. Work with partners to identify, adapt and pilot an <a href="#">industry</a>-wide employee / employer recognition program; evaluate, refine, and move to full implementation</p>	<p>Start: 1-3 years Finish: 1-3 years</p>	

## IMPLEMENTATION

### IMPLEMENTATION PHASES

It is recommended that the workforce development strategy be implemented in two phases, and that tactics be placed into phases according to their timeline start date.

**Phase 1** includes all tactics scheduled to start within 0-12 months of the launch date for implementing the workforce development strategy.

[Table 6](#) lists the 12 tactics in Phase 1 of the workforce development strategy along with their timelines and dependencies.

Tactics are listed in order of their scheduled initiation and completion dates, which fall into one of three time periods:

- 0-12 months after the strategy implementation launch date
- 1-3 years after the strategy implementation launch date
- 4-5 years after the strategy implementation launch date

Tactics are then grouped into implementation stages based upon:

- The priority specified by the industry
- The relationship of the tactic to the effective coordination of implementation
- The dependency between tactics, within and across goals
- The length of time required to produce a desired outcome

Tactics are intended to be implemented *concurrently wherever possible*, subject to dependencies and available resources. Note that not all tactics may be completed prior to concluding one stage of implementation and moving to the next implementation stage. The exception to this is in **stage 1** where the completion of tactic 5.1 is required before moving to **stage 2**. Stage 1 ensures proper coordination of all implementation activities is solidly in place.

Implementation of tactics in **stage 2** ensures that:

- Critical foundation elements of the strategy are beginning to be built
- Immediate and critically important needs related to succession planning and knowledge transfer are met
- Sufficient time is provided for tactics that require longer lead times to bring about desired outcomes
- Access and use of tools and resources is facilitated as quickly as possible

Implementation of tactics in **stage 3** ensures that:

- Critical foundation elements are built
- Industry needs related to establishing inclusive and diverse workplaces are met
- Capacity of employers to use foundation elements are built
- Career paths into and within the industry are beginning to be clarified



LEGEND
Tactics under Goal 1
Tactics under Goal 2
Tactics under Goal 3
Tactics under Goal 4
Tactics under Goal 5

Table 6 Workforce Development Strategy Implementation Phase 1

WORKFORCE DEVELOPMENT STRATEGY IMPLEMENTATION PHASE 1											
TACTICS (Implement concurrently subject to dependencies, available resources, and according to start & completion time periods)		DEPENDENCY	START & COMPLETION TIME PERIODS						IMPLEMENTATION STAGES		
			0 - 12 MONTHS		1 - 3 YEARS		4 - 5 YEARS		STAGE 1	STAGE 2	STAGE 3
			Start = ✓ Finish = ✗						T = to be initiated		
1.1	Create inventory of occupations and jobs, including a process for regular maintenance and updating		✓	✗						T	
1.2	Create competency profiles for occupations and jobs	1.1	✓	✗							T
1.3	Design and create templates for competency-based job descriptions and job ads	1.2	✓	✗							T
5.1	Establish governance model; source and deliver governance training to Project Committee members		✓	✗					T		
5.2	Work with partners to identify and leverage storage, distribution, and communication forums/channels for resources and tools as they are developed through the strategy		✓	✗						T	
5.3	Collect/create and disseminate sample HR policies for inclusive and diverse workplaces		✓	✗							T

WORKFORCE DEVELOPMENT STRATEGY IMPLEMENTATION PHASE 1											
TACTICS (Implement concurrently subject to dependencies, available resources, and according to start & completion time periods)		DEPENDENCY	START & COMPLETION TIME PERIODS						IMPLEMENTATION STAGES		
			0 - 12 MONTHS		1 - 3 YEARS		4 - 5 YEARS		STAGE 1	STAGE 2	STAGE 3
			Start = ✓ Finish = ✗						T = to be initiated		
1.4	Work with partners to leverage content for training and “how to guides” on competency frameworks and their key products; identify gaps, create and execute plan to address		✓			✗				T	
1.5	Pilot competency training and “how to guides”; evaluate, refine and fully implement training delivery	1.4	✓			✗				T	
2.1	Work with partners to identify and leverage existing succession tools; identify gaps and develop and execute plan to address gaps		✓			✗			T		
3.2	Develop career path infographic showing career mobility options	1.1, 1.2, 1.3, 3.1	✓			✗				T	
3.3	Create career awareness materials including two curriculum resources; work with partners (Ministry of Education, Work BC, etc.) to leverage templates, packaging, distribution/ publication channels	3.2	✓			✗			T		
3.1	Work with partners to identify and leverage existing best practices and resources for marketing careers; design and implement a sustained, multi-media marketing campaign; re-brand industry		✓					✗	T		

**Phase 2** includes all tactics scheduled to start within 1-3 years after the launch date for implementing the workforce development strategy.

Table 7 lists the 21 tactics in Phase 2 of the workforce development strategy along with their timelines and dependencies.

Tactics are listed in order of their scheduled completion dates, which fall into one of two time periods:

- 1-3 years after the strategy implementation launch date
- 4-5 years after the strategy implementation launch date

LEGEND
Tactics under Goal 1
Tactics under Goal 2
Tactics under Goal 3
Tactics under Goal 4
Tactics under Goal 5

**Table 7 Workforce Development Strategy Implementation Phase 2**

WORKFORCE DEVELOPMENT STRATEGY IMPLEMENTATION PHASE 2								
TACTICS		DEPENDENCY	0 - 12 MONTHS		1 - 3 YEARS		4 - 5 YEARS	
			Start = ✓ Finish = ✗					
1.6	Create, document, and implement standards for development and delivery of training courses and programs; including a mechanism to confirm on-going compliance	1.4			✓	✗		
1.7	Resolve difficulties associated with certification requirements (hours), certification shelf-life, currency requirements (CEUs)	1.4			✓	✗		
2.5	Work with partners (Work BC, others) to identify and leverage existing connection tools				✓	✗		
2.6	Work with partners to research and identify best practices; adapt/develop and pilot industry-wide recruitment strategy; evaluate, refine, and fully implement	3.1, 3.2			✓	✗		
3.4	Offer and/or participate in outreach activities to engage students, job seekers, and the public e.g., public works days, career fairs, open houses	3.3			✓	✗		
3.5	Inventory and assess the effectiveness of current activities; develop options for enhancements	3.4			✓	✗		
5.4	Research, identify, and disseminate best HR practices of employers in the industry and “Employers of Choice”				✓	✗		
5.5	Work with partners to identify, adapt and pilot an industry-wide employee / employer recognition program; evaluate, refine, and move to full implementation				✓	✗		

WORKFORCE DEVELOPMENT STRATEGY IMPLEMENTATION PHASE 2								
TACTICS		DEPENDENCY	0 - 12 MONTHS		1 - 3 YEARS		4 - 5 YEARS	
					Start = ✓	Finish = ✖		
1.8	Review the certification program to confirm it meets the needs it is intended to meet (or needs to meet)				✓			✖
2.2	Work with partners to identify/research and assess technologies for adoption (i.e. AutoCAD, GIS, etc.)				✓			✖
2.3	Work with partners to identify and document best practices of technology adoption	2.2			✓			✖
2.4	Hold site-tours to showcase best practices of technology adoption	2.3			✓			✖
4.1	Map existing training and highlight accessibility barriers; develop options to address barriers				✓			✖
4.2	Conduct training needs assessments and develop individual learning plans for employees based on results	1.1, 1.2, 1.3, 1.6			✓			✖
4.3	Work with partners to identify/develop content and pilot “gap training” for employee needs in individual learning plans	4.2			✓			✖
4.4	Work with partners to identify/leverage, research and adapt best practice mentoring programs to industry and pilot an industry-wide mentoring program; evaluate, refine and move to full implementation				✓			✖
4.5	Work with partners to source content and templates to create a co-learning/mentoring guide for employees	4.4			✓			✖
4.6	Work with partners to research best practices; design, and implement an in-house training model e.g., job shadowing, cross-training, etc.				✓			✖
4.7	Confirm, source/develop and deliver training for specific topics of interest to employers				✓			✖
4.8	Work with partners to identify, adapt, and deliver a “train-the-trainers” program; incorporate in relevant post-secondary occupational training programs				✓			✖

WORKFORCE DEVELOPMENT STRATEGY IMPLEMENTATION PHASE 2								
TACTICS		DEPENDENCY	0 - 12 MONTHS		1 - 3 YEARS		4 - 5 YEARS	
			Start = ✓ Finish = ✖					
4.9	Recruit, engage and train retirees to be trainers and mentors	4.4, 4.8			✓			✖

## SUSTAINABILITY CONSIDERATIONS

The following tactics in Phase 1 have been identified as requiring sustainability.

- Competency framework tactics
  - 1.1 Inventory of jobs and occupations
  - 1.2 Competency profiles for jobs and occupations
- Career awareness tactics
  - 3.1 Career awareness marketing campaign
  - 3.2 Career path infographic

Sustainability considerations for these tactics include:

- Exploring and finding an appropriate owner
- Estimating the frequency required for updating and maintenance
- Estimating the cost and time required for updating and maintenance

EVALUATION PLAN

LOGIC MODEL

Table 8 Logic Model

OBJECTIVE: As a result of implementing workforce development activities, the <a href="#">industry</a> is able to achieve and maintain a competent and sustainable <a href="#">workforce</a>					
INPUTS	ACTIVITIES	OUTPUTS	IMMEDIATE OUTCOMES	INTERMEDIATE OUTCOMES	LONG TERM OUTCOMES
<p>Money</p> <p>Staff</p> <p>Professional expertise</p> <p>Partnerships</p> <p>Labour Market Information (LMI)</p> <p>Stakeholders</p>	<p>Establish partnerships</p> <p>Develop competency tools and content for training</p> <p>Research and develop succession planning tools</p> <p>Research and assess technologies for adoption</p> <p>Create <a href="#">industry</a>-wide mentoring program</p> <p>Re-brand <a href="#">industry</a> and develop targeted marketing campaign</p> <p>Create career awareness materials, and outreach activities geared to youth and</p>	<p>Occupation and job competency profiles, job descriptions, and job ads; assessment strategies and tools</p> <p>Information and awareness sessions</p> <p>Launch of marketing campaign</p> <p>Activation of <a href="#">industry</a>/ career awareness and outreach activities</p> <p>New recruitment and hiring tools and processes</p> <p>Pilots in training and using new tools</p> <p>Launch of recruitment and hiring strategy</p>	<p>Employers are aware of benefits and can use new tools</p> <p>Youth and individuals from target labour markets are aware of the <a href="#">industry</a> and its career opportunities</p> <p>Post-secondary training programs are directly related to occupation and job requirements</p>	<p>More employers use new tools for hiring, deployment, development, and management of employees</p> <p>Youth and individuals from target labour markets seek careers in the <a href="#">industry</a></p> <p>More employees have individual learning plans</p> <p>More employers have succession plans in place for upcoming retirements</p>	<p>Increased numbers of youth and workers from target labour markets apply for jobs in the <a href="#">industry</a></p> <p>More employees and new hires with “right skills, in right place, at right time”</p> <p>Closer match between employees and occupation/job requirements</p> <p>Higher employee job satisfaction</p> <p>Increased employee productivity</p> <p>Average age of the <a href="#">workforce</a> decreases</p>

OBJECTIVE: As a result of implementing workforce development activities, the <a href="#">industry</a> is able to achieve and maintain a competent and sustainable <a href="#">workforce</a>					
INPUTS	ACTIVITIES	OUTPUTS	IMMEDIATE OUTCOMES	INTERMEDIATE OUTCOMES	LONG TERM OUTCOMES
	target labour markets  Develop <a href="#">industry</a> -wide recruitment and hiring strategy and tools  Research and develop best practice HR tools				



EVALUATION FRAMEWORK

**Table 9 Key Performance Indicators**

PERFORMANCE MEASURES	INDICATORS FOR PERFORMANCE MEASURES	DATA REQUIRED FOR INDICATORS
Evidenced based HR decision-making	Average number of employers using competency tools for HR functions	Baseline and completion measurement of a sample group of employers
Job vacancies	Average number of positions vacant across the <a href="#">industry</a> and by region	Baseline and completion measurement of a sample group of employers
Reduced time to hire	Time to hire (e.g., number of days/hours from job posting to applicant hired)	Baseline and completion measurement of a sample group of employers
Average age of workers in <a href="#">workforce</a>	Age of workers in the <a href="#">workforce</a> from a sample size of employers	Baseline and completion measurement
Employer confidence in technical capacity of the <a href="#">workforce</a>		Baseline and completion measurement
Employer confidence in the capacity and desire of the <a href="#">workforce</a> to move into leadership positions		Baseline and completion measurement
Employee engagement	Employee satisfaction	Baseline and completion measurement

## APPENDICES

### A. PARTICIPANTS IN THE FORMATION OF THE WORKFORCE STRATEGY

See separate attachment

### B. PROJECT ADVISORY COMMITTEE RESPONSES TO DRAFT WORKFORCE STRATEGY

See separate attachment