



# WATER AND WASTEWATER CERTIFICATION ADVISORY COMMITTEE – RECOMMENDATIONS REPORT

September 2023

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## Executive Summary

Water and wastewater infrastructure is critical for maintaining water quality and supporting water management in Manitoba. Access to safe drinking water is essential for the protection of public health and properly treated wastewater is vital for disease prevention and environmental protection. Uninterrupted operation of drinking water treatment and distribution, and wastewater collection and treatment facilities is a priority for communities across Manitoba. In addition to protecting public health and the environment, these facilities support economic development.

The Water and Wastewater Facility Operators Regulation 77/2003 under The Environment Act (C.C.S.M. c. E125) protects public health and the environment by regulating water and wastewater facilities, and training and certifying operators. Facility owners are responsible for employing certified operators: people who have demonstrated proficiency in one or all of the different facility classifications and operate the facilities in a safe manner. Every water and wastewater facility operator in Manitoba must be certified under the Regulation. Certification requires education, work experience, and passing certification exams.

The need for certified operators in Manitoba will continue to grow with the increasing demand for water and wastewater infrastructure. This presents a challenge as facilities in Manitoba struggle to recruit and retain qualified operators, especially in northern and remote communities. Improving recruitment and retention is a complex, long-standing, and high priority issue for stakeholders in Manitoba.

In a letter dated June 16, 2022, Honourable Jeff Wharton, Minister of Environment and Climate, directed Manitoba's Water and Wastewater Certification Advisory Committee (CAC) to examine the shortage of facility operators. This would include consulting with key stakeholders to identify the root causes of the problem and recommend solutions. The Water and Wastewater Facility Operators Regulation established the CAC to advise government on meeting the objectives of the regulation. The committee membership includes individuals with firsthand experience with the regulation, management, and operation of water and wastewater facilities.

This report highlights the work undertaken by the CAC to determine root causes of the operator shortage. It presents options and action items for improving recruitment and retention and includes the concept of an online toolkit to support facility owners and operators. It concludes with a discussion of the next steps for the committee. The CAC is committed to working with the Manitoba government to address the operator shortage to ensure safe drinking water and proper wastewater treatment.

## Certification Advisory Committee Members

|                            |                                                                           |
|----------------------------|---------------------------------------------------------------------------|
| <b>Jack Winram (Chair)</b> | Executive Director, Manitoba Environmental Industries Association         |
| <b>Neil Rentz</b>          | Manager of Operations and Client Services, Environmental Approvals Branch |
| <b>Ken Mattes</b>          | Water and Waste Water Circuit Rider Training Program                      |
| <b>Jennifer Graham</b>     | City of Winnipeg                                                          |
| <b>Ralph Groening</b>      | Previous Reeve, RM of Morris                                              |
| <b>Ken Mills</b>           | President and Senior Project Manager, Energy Consultants International    |
| <b>Bill Brenner</b>        | Certified Operator and Executive Director of MWWA                         |

Note: A Certification Advisory Committee meeting record has been included as [Appendix A](#).

## Stakeholder Engagement

|                                                                                 |                                                                                                                                          |
|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Association of Manitoba Municipalities (AMM)</b>                             | AMM represents owners of Water and Waste Water Systems and are required under the legislation to have Certified Operators                |
| <b>Manitoba Economic Development, Investment and Trade (EDIT)</b>               | EDIT has been involved in supports through training and education.                                                                       |
| <b>Manitoba Advanced Education and Training (AET) – Apprenticeship Manitoba</b> | AET has provided education support through curriculum and deliver of Water and Wastewater Certification under the Apprenticeship Program |
| <b>Manitoba Indigenous Reconciliation and Northern Relations (IRNR)</b>         | IRNR communities have water and wastewater systems that require Certified Operators under the legislation.                               |
| <b>Red River College (RRC) Polytechnic</b>                                      | RRC Polytech has existing program to prepare operators for exam certification.                                                           |

## Challenges and Recommendations

To address the shortage of certified water and wastewater facility operators, Manitoba needs to develop a plan to improve the recruitment, training, and operational support of facility operators. This plan needs to provide solutions to both the common issues and the unique challenges of specific regions.

Based on the stakeholder feedback shared with the CAC, the issues contributing to the operator shortage fall into four categories:

1. Awareness of the industry as a career path and attracting candidates
2. Retaining candidates
3. Access to training
4. Pathway to certification

### 1. Awareness of the Industry as a Career Path and Attracting Candidates

#### Challenges

Water and wastewater facility operators provide an essential service for protecting public health and the environment, yet their role and career path is relatively unknown to the public and municipal administrators. Very few publicly available or easily searchable resources provide information about the water and wastewater operator profession. As a result, candidates interested in a water and wastewater treatment career find it difficult to enter the industry and determine what future opportunities the profession provides.

Most Canadian provinces have a formal education program for water and wastewater facility operators offered at one or more technical colleges. This type of education program is not currently available in Manitoba. Without programs offered by local colleges or universities, it is not possible to assess the level of potential public interest in the profession. Graduating high school students may consider water and wastewater treatment as a post-secondary option if they are aware of it as a potential career. It is difficult to compete against other career options when nobody knows these options exist. Clear pathways to professions do exist, like those for dentists, or trades, like electricians.

Manitoba has a formal operator certification process, but critics of the process feel the path to certification can be complicated and confusing, partly due to lack of information on navigating the system. The absence of a formal education program and a complicated path to certification have contributed to a poorly defined career path for prospective water and wastewater professionals in Manitoba.

Low public awareness of the role an operator plays in the community also contributes to low levels of interest in this career path. Facility operator positions are quality jobs that provide career advancement opportunities. Many operators only discover the job after being employed in a seasonal or entry-level position with a municipality, rather than targeting it as a career from the start.

There is a lack of diversity at all levels in the water and wastewater industry. Underrepresented groups such as women and newcomers to Canada/Manitoba anecdotally are largely absent from this workforce. The water and wastewater industry worker demographic statistics should be made available, and the workforce should be more representative of the communities they serve.

### Recommendations

Manitoba must prioritize promotion of the water and wastewater industry. This will increase awareness of the profession and show that it is an attractive career option. The following actions could support improved awareness of the industry as a career path:

1. Incorporate water and wastewater facility operations into the school curriculum at all levels (K-12, post-secondary). Current organizations to support this could include, but not be limited to, the Department of Education, Sector Council Program, and RRC Polytech.
2. Engage with Manitoba based universities and Manitoba college career centres; many programs fit well into the educational requirements of certification.
3. Utilize Prior learning and Assessment Recognition (PLAR) to identify education programs that qualify as continuing education units and post-secondary education for certification.
4. Leverage the resources and networking of existing organizations (e.g., Manitoba Water and Wastewater Association, Manitoba Environmental Industries Association, Association of Manitoba Municipalities, Manitoba Municipal Administrators, Western Canada Water, Canadian Water and Wastewater Association, etc.) to promote the occupation.
5. Delegate an organization as the authority of certification to administer the certification process in Manitoba, raise awareness of the industry, and provide support to facility operators and facility owners. This organization would maintain a toolkit of services and would support all facility owners. (e.g., Manitoba Water and Wastewater Association is an agency that could potentially be the authority)
6. Improve public perception of the facility operator role. Create a shift from the misconception that facility operators perform only “maintenance duties,” and recognize facility operator as a respected, desirable occupation. Emphasize the technical skills required for these roles and their importance in every community.
7. Promote diversity by working with immigration and Indigenous employment agencies to raise awareness of facility operator career opportunities to help attract newcomers and Indigenous workers.
8. Develop a toolkit of resources for facility owners to properly evaluate facility requirements and develop job descriptions that reflect those requirements.

## 2. Retaining Candidates

### Challenges

Attracting and retaining water and wastewater facility operators has been a long-standing challenge in Manitoba. The ongoing shortage of operators has increased competition among neighbouring communities with a limited number of qualified operators. Larger communities outcompete smaller communities by offering more hours and higher levels of compensation.

Some smaller communities have less complex water and wastewater treatment systems that can be successfully operated by a part-time operator. In these cases, a certified operator may have other public works duties in addition to their facility operation duties. As a result, these operators may only be paid as a “public works” employee and receive lower levels of compensation compared to a full-time facility operator. The reduced level of compensation can make it difficult to attract a certified operator to the position. This strategy minimizes the importance of the role of an operator, is less efficient, and can make recruitment more difficult, since the candidate must be skilled at public works tasks and facility operator tasks.

Smaller communities, particularly those located in rural and remote areas, have a small population, with fewer potential employees available to maintain and operate the water treatment plants and related facilities. Individuals within this cohort may not have the interest or technical aptitude to become an operator.

In many communities, a lack of succession planning causes difficulties when operators go on leave, decide to move on, or retire. Smaller communities have difficulties providing back up water and wastewater support, contributing to a higher sense of responsibility and stress for primary operators. Many public works employees are satisfied with their existing work responsibilities and are not interested in the additional training required for water and wastewater certification to move into a higher-stress role with more responsibility.

Facility owners must make a financial investment to ensure their operators have completed an appropriate level of training to obtain and maintain their certification. This investment can be lost when a newly certified operator decides to leave to pursue a more attractive job opportunity in another community. The use of “return to service” agreements, which require operators to return to service with their employer for a specified period following completion of training, could protect the investment but are not widely used in many communities.

The level of training, professional development, and responsibility for public health are not reflected in the level of compensation of certified facility operators relative to other certified tradespeople, especially in communities with small scale systems. The responsibility of being on call after hours and potential liability issues may make water and wastewater facility operator careers less appealing. Support for facility owners to develop job descriptions that accurately reflect the requirements of a facility operator would benefit the owners, facility operators, and the overall community.

## Recommendations

1. Establish shared service agreements between communities to share water and wastewater facility operators. Place emphasis on regional cooperation and support for the operation of water and wastewater facilities in smaller communities. This will help increase awareness of the industry and the service that operators provide within the communities. Templates for shared services agreements can be a resource available in an online toolkit.
2. Explore ways to standardize the level of compensation for operators to help attract and retain operators.
3. Ensure that owners are aware that they can recover recruitment, training, and succession costs through rate recovery for those who are subject to the Public Utilities Board (PUB).
4. For non-PUB regulated systems, explore options for funding infrastructure and training such as additions to operations costs. Ensure any infrastructure upgrades include a plan for supporting the workforce needed to operate and maintain the upgrades.
5. Consider grants to either the facility owner or operator, for operator training.
6. Investigate incentives for training and retention. Any successful incentives can be included as a toolkit resource for the benefit of others.

## 3. Access to Training and Resources

### Challenges

Properly trained water and wastewater facility operators are vital to providing safe drinking water and proper wastewater treatment. The lack of appropriate and accessible training opportunities is one of the most complex challenges contributing to the operator shortage. The following types of training are important to an operator progressing through the certification pathway:

1. Foundational knowledge to cover all aspects of the type of facility, or facility category.
2. Hands-on work or on-the-job training in the facility. (The individual is at an Operator-in-Training (OIT) level during this part of the pathway and is required to pass the Level 1 Provincial certification exam within five years.)
3. Exam preparation training to help pass the exams.
4. Continuing education units (CEUs) to maintain certification once obtained, six CEUs during the five-year certification period for class 1 – 4 facilities or 3 CEUs for small systems.

There is currently a lack of adequate training material and programs to help operators prepare for certification exams. For example, jurisdictions in the United States have created many of the exam preparation materials currently available. These materials do not use the same units of measurement that are used in Canada (metric). Water Professionals International (WPI) (formerly named Association of Boards of Certification (ABC)), a United States based organization, developed the certification exam used in Manitoba. While most of the exam content is applicable to Canada, there are instances where the language and technical terms are different from Canadian terminology, which causes confusion for Manitoba operators. General learning materials available through the American Water Works



Association (AWWA) also lack Canadian content, especially regarding drinking water guidelines and math. There is a need for more affordable and accessible Canadian training content.

Enhancing current training opportunities is critical to help potential operators understand the concepts needed to pass the exam. For example, the training courses offered by Red River College Polytechnic (RRC Polytech) do not always align with the operator responsibilities of many smaller municipalities. Currently, RRC Polytech offers a suite of Class 1 & 2 Operator Training and Certification Exam Preparation courses that are often not applicable to the water and wastewater infrastructure in smaller communities. While the courses offered at RRC Polytech can be useful for facility operators, the content is not sufficient to gain a full understanding of the occupation nor is that RRC Polytech's intent. To maximize the benefit of training, participants need practical, hands-on learning options. Mentorship programs are available to operators in Manitoba, but more needs to be done to determine why there is no uptake.

Training and educating a certified facility operator requires a significant financial investment, which can be a barrier for some communities. Due to their lower populations, per capita costs for operator training are higher for smaller communities compared to larger communities with similar infrastructure. Manitoba needs more support to create local training opportunities for operators in rural and remote locations. In many cases, rural and remote facilities do not have dedicated trainers and support staff to provide meaningful, hands-on training opportunities for operators. Employers are usually required to send their operators to Winnipeg or other large communities to participate in training programs that are often generic and not site-specific. This long-distance travel is expensive, time consuming, and inconvenient, as operators must be away from their communities and family for extended periods. Communities may also have difficulty providing back up operators while operators are away for training. However, providing training in remote communities has its own challenges, as there are costs associated with bringing in experts to the community, and virtual training may be unreliable due to poor Internet service. Enrollment levels can also be low, affecting the viability of regional or local training. Overall, smaller communities lack the resources to support cost-prohibitive operator training and professional development, which are essential for the management of their water and wastewater infrastructure.

The federal government has established a successful Circuit Rider Training Program, which is a long-term capacity-building program that provides training and mentoring services to operators in First Nations communities. As a part of this program, experts rotate through a circuit of First Nations communities, training the people responsible for operating, monitoring, and maintaining drinking water and wastewater systems. These experts help First Nation operators get and maintain their certification and may advise chiefs and councils on how to develop and maintain safe water systems. Establishing a similar program at the provincial level could assist in training site-specific certified operators and provide mentorship opportunities.

## Recommendations

These challenges can be addressed by developing a comprehensive and accessible training program for operators. This should begin with developing a basic, entry-level training course that is mandatory for all operators. Offering additional training modules can build on the initial training, including micro-credential courses to develop specialized skills or competencies. The following recommendations could improve access to training and resources within the industry:

1. Implement existing curriculum and training that educational institutions have already developed. (e-apprenticeship, RRC Polytech pre-employment program).
2. Partner with industry organizations engaged in workforce development such as the Manitoba Water and Wastewater Association, Manitoba Construction Sector Council, Workplace Employment Manitoba, or Manitoba Environmental Industries Association.
3. Allocate government funding to deliver a Manitoba applicable training program for operators.
4. Partner with post-secondary institutions to offer local training programs.
5. Support the development of local, hands-on training programs in the communities across Manitoba.
6. Offer a mix of online learning and in-class sessions. Include support for IT requirements so participation does not require operators to be away from their communities for extended periods.
7. Establish and promote mentorship opportunities for facility operators. Consider the First Nations Circuit Rider Training Program as a model for mentorship and training for all Manitoba communities.
8. Provide acceptable training resources through an online toolkit that is available to any operator in Manitoba.

#### 4. Pathway to Certification

##### Challenges

Operators face many challenges associated with obtaining and maintaining their operator certification. Primarily, as previously mentioned, promotion and awareness of the occupation needs improvement. It is difficult to determine the steps involved in obtaining and maintaining certification from the Regulation. The exams can be difficult to pass, and the legislation governing the certification process presents additional barriers.

Many operators fail the exams because they find the questions are too difficult for their level of education and training. Some examples include challenges with the terminology used in the exam questions which is indicative of inadequate pre-exam education and training, or exam content that is not applicable to their community systems.

The current certification exams require operators to have knowledge of different technologies and systems that may not pertain to Manitoba facilities. The exam questions focus on water systems in large cities and are often not relevant to the systems used in smaller communities. Even then, the larger cities may have workforces structured so operators rarely see all aspects of the facility in their day-to-day work, making it hard to relate to the exam content. The requirement to understand concepts and technologies that are irrelevant to their facility contributes to heightened levels of exam anxiety and high levels of failure among operators in Manitoba. Most of the Manitoba exams are customized exams that Water Professionals International (WPI) updated around 2014. There are standardized exams available from WPI (updated in 2021) that most jurisdictions are currently using. The standardized exams contain 10 extra questions used as “practice” questions. WPI uses these questions in their validation procedure to help them develop new versions of the exams.

Operators find it challenging to set aside time to study for operator exams when working long hours, which also may contribute to low exam success rates. This indicates that operators do not have enough support to get through the current program alone.

Another challenge with exams is the significant increase in difficulty between the levels of exams. Operators are generally well prepared to complete class 1 and 2 exams. However, many operators do not receive enough higher-level training to fully understand the concepts of the class 3 exam, resulting in a low exam success rate. This could be because there are fewer class 3 facilities in Manitoba, leading to less demand for class 3 exam prep material, which can increase training costs per operator. When operators attempt the higher-level exams and are unsuccessful, they lose confidence and motivation, and sometimes choose to abandon certification. These are some of the reasons many operators are unable to advance to level 3 certification and remain at level 2 indefinitely.

According to the Regulation, the operator must wait four months before attempting to rewrite after exam failure. The WPI's Canadian Water and Wastewater Operator Certification Best Practices suggests a one-month cool off period before rewriting an exam. Manitoba's extended cooling off period can be a barrier to certification.

Certified operators must obtain continuing education units (CEUs) to maintain and advance their certification status. The training courses offered can be very expensive for the quality of the course content and number of CEUs awarded. There is a reliance on American-based (California State University, Sacramento Office of Water Programs) courses to obtain CEUs required to advance from a level 1 to a level 4 operator, and the costs to enroll in these courses continue to increase each year.

The Water and Wastewater Facility Operators Regulation that governs the certification process presents many challenges. It can be difficult for communities and facility operators to interpret and apply the Regulation to their own situation. There are few resources available to help interpret the requirements of the regulation for obtaining, maintaining, or upgrading certification. While the provincial program does have a coordinating office, this resource has seen a reduced capacity over the years, limiting the available time for the program coordinator to provide full explanations to all individuals who may need it. Not every facility has a support person on staff to provide interpretations of requirements and support operators or facility owners. The Regulation bases facility classification levels on population size, system type, etc. The classification of a facility determines the level of certification needed to operate that facility. However, these parameters do not recognize competency-based merits as a means of obtaining certification.

### Recommendations

1. Identify a direct path to connecting prospective operators with Economic Development, Investment and Trade (EDIT) to get resources to improve their basic skills, such as literacy and workplace/job readiness.
2. Consider a certification route based on an individual's competency to operate smaller, less complex systems and not solely dependent on their ability to pass an exam. There must be a balance between conventional and practical operator assessments. Explore options for practical "hands-on" exams instead of the standard written exams; this practice is common in other skilled trades. The governing authority of certification would need to establish requirements for certification to operate a specific facility.

3. Ensure a Manitoba governing body or agency reviews and revises the certification exams to make them relevant to the water and wastewater treatment systems in Manitoba. These changes could include removing unfamiliar or confusing language or terminology, using questions that are relevant to a Canadian context, and adjusting the difficulty.
4. The authority for certification should review the current exams, as well as the newer, standardized exam. There are currently 16 different certification exams; ideally, four exams would be reviewed each year, resulting in a review of all exams every four years.
5. Once the review of exams is complete, Manitoba should consider adopting the standardized exam to be more consistent with other jurisdictions. This will ensure continued reciprocity and that operators are writing the most up-to-date exams.
6. Encourage owners and operators to apply for Operator in Training status immediately upon hiring.
7. Change the cooling off period for retaking a failed exam to one month to align with the Canadian best practices (this would require a regulation change 77/2003 Clause 15(2)).
8. Upgrade the provincial website on a regular basis to ensure information from the regulator is easy to find and understand.
9. The governing certification body should explore IT solutions to track and manage certification in one location, including automatic reminders for renewal and at other milestones on the certification pathway.

## Next Steps for the Certification Advisory Committee

### Introduction of Toolkit

Manitoba needs to provide better support to the water and wastewater industry through raising awareness of the career, assisting with operator retention, providing adequate training resources, and making the pathway to certification clearer and more straightforward. Developing certification and training resources and placing them in a central online location that is easily accessible to operators is a strong step forward.

Developing a shared resource of valuable information, such as an online toolkit, that all stakeholders rely on will help address the challenges faced in all regions of the province. It can help open lines of communication between communities, encouraging more collaboration. The immediate next step for the CAC will be to build a framework for the toolkit resources and seek ways to develop those tools with the stakeholders identified in this report. The governing body or agency that the provincial government designates or creates will maintain the toolkit. The CAC is prepared to help government seek interested parties for this new body.

An example of the proposed toolkit idea is presented in [Appendix B](#).

In conclusion, the Committee thanks the Minister and the department for the opportunity to work on this important file for the betterment of all Manitobans. We look forward to continuing to meet our mandate under the Regulation as a committee and discuss next steps regarding your consideration of the recommendations.

## Appendix A: Certification Advisory Committee Meeting Record

| Meeting Date   | Meeting Participants                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | Certification Advisory Committee                                                                          | Stakeholders                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Jul. 12, 2022  | Jack Winram<br>Neil Rentz<br>Ken Mattes<br>Ralph Groening<br>Ken Mills<br>Bill Brenner                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Sept. 20, 2022 | Jack Winram<br>Neil Rentz<br>Ken Mattes<br>Ralph Groening<br>Ken Mills<br>Bill Brenner                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Oct. 20, 2022  | Jack Winram<br>Neil Rentz<br>Ken Mattes<br>Ralph Groening<br>Ken Mills<br>Bill Brenner                    | Paul Doolan and Kim Philip, Manitoba Indigenous Reconciliation and Northern Relations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Dec. 13, 2022  | Jack Winram<br>Neil Rentz<br>Ken Mattes<br>Jennifer Graham<br>Ralph Groening<br>Ken Mills<br>Bill Brenner | Denys Volkov, Association of Manitoba Municipalities<br>Nick Krawetz, Association of Manitoba Municipalities<br>Christine Waytiuk, Manitoba Economic Development, Investment and Trade<br>Troy Mercer, Manitoba Economic Development, Investment and Trade<br>Joe Funk, Manitoba Advanced Education and Training<br>David McCutcheon, Manitoba Advanced Education and Training (Apprenticeship Manitoba)<br>Shari Bielert, Red River College Polytechnic<br>Raven Sharma, Red River College Polytechnic<br>Brad Peters, Red River College Polytechnic<br>Jill Latschislaw, Red River College Polytechnic<br>Dave Pirt, Red River College Polytechnic |
| Feb. 14, 2023  | Jack Winram<br>Neil Rentz<br>Ken Mattes<br>Jennifer Graham<br>Ralph Groening<br>Ken Mills<br>Bill Brenner |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| June 12, 2023  | Jack Winram<br>Neil Rentz<br>Ken Mattes<br>Jennifer Graham<br>Ralph Groening<br>Ken Mills<br>Bill Brenner |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Appendix B: Example of an Online Toolkit

Using a toolkit concept, the *Manitoba Water and Wastewater Facility Owner and Operator Online Toolkit* could provide information required to support water and wastewater facility operators and owners. The way the toolkit is presented can help people find this career path, can help facility owners find operators and learn how to best support them, and can help operators understand the industry they are a part of; gaps will be filled. The development of an online toolkit will demonstrate an increased commitment to safe drinking water for all by providing resources to stakeholders to increase their levels of Awareness, Basic operator knowledge, and Communication (i.e., an ABC Toolkit). The ABC Toolkit could focus on the following concepts:

### 1. Awareness:

- a. A component directed to all stakeholders (i.e., municipal administrators, councils and political leaders, existing and potential water and wastewater facility operators) and will answer the following questions:
  - i. **Who** needs water and wastewater facility operators?
  - ii. **What:**
    - regulates water and wastewater facility operators in Manitoba.
    - benefits are there to supporting full time operator positions (for communities, environment, long term stability of facilities)?
    - are the risks to a community without certified operators?
  - iii. **When** are operators needed in a community?
  - iv. **Where** can operators obtain their credentials to qualify?
  - v. **Why** are operators needed?
- b. A component directed to municipal administrators:
  - i. Public Utilities Board basics
  - ii. Funding water and wastewater facility operator training
  - iii. Cost of owning facilities/budgetary considerations unique to facilities
  - iv. Succession planning, i.e., standard operating procedure development
  - v. Recruitment and retention strategies
  - vi. Collaboration techniques to foster inter-municipal support for facility operations

### 2. Basic Operator Knowledge:

- a. Resources for the providing overviews of the following information and used to encourage interest in the industry:
  - i. Potential Water and Wastewater Operators
    - what this career can offer
    - how it the industry works (facilities are owned by municipalities/companies in some cases, the categories of facility, the classes of facility)
    - what educational background is required?
    - what criteria is required (based on the Regulation)?
    - what does it cost to get into this occupation?
  - ii. New Water and Wastewater Operators
    - exam preparation advice and resources
    - what are and how to track continuing education units (CEUs)
  - iii. Renewing or Upgrading Water and Wastewater Operators

- How do I maintain or upgrade certification?
  - Where is my certificate valid?
  - What are acceptable CEUs for certification renewal or upgrade?
- b. Resources related to education opportunities, including links Manitoba-approved training resources around the country to support:
- i. Potential operators
  - ii. Existing and upgrading operators

### 3. Communication:

- a. Developing skills for owners and operators on:
- i. Communicating with the public about Facilities
  - ii. Benefits of succession planning (SOPs are at the core of a succession plan)
  - iii. How to:
    - Develop and mentor operators (think regional operator program)
    - Develop SOPs for facility operation:
      - Templates/how-to support for development of procedures
      - Can decrease call outs and empower local experts to problem solve
      - Support learning transfer and increase the likelihood of a regional support system of operators for relief.
    - Maintain records
    - Track training
    - Fill out provincial forms
- b. Mentoring programs through a regional network of operators in a particular region
- i. Facility category or class based
- c. The operator community
- i. Provincial communications, i.e., a hub for notices that pertain to facility operators as the province did during COVID
  - ii. Career board
  - iii. Manitoba Water and Wastewater Association membership
  - iv. Western Canada Water membership