
**The Water and Wastewater Workers
Essential Skills Project**

Report presented to Saskatchewan Learning

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Executive Summary

Background

The Water and Wastewater Workers Essential Skills Project was developed with the overall aim of offering assistance and support to water and wastewater workers as they faced the mandatory certification process. More specifically, the project focused on assessing their levels in workplace essential skills. Workplace essential skills are seen as the non-technical skills that will enable the workers to successfully participate in certification training and successfully gain certification.

In July 2000 the Saskatchewan Government mandated certification for system operators of water and wastewater treatment plants, effective July 2005. There are more than 1,300 operators in the province, and roughly 580 of them have one or more levels of certification as of March 2004. The mandated certification program presents major challenges to some of the individuals currently employed in this occupation. Many water and wastewater workers have been employed in their positions or in the public utility field for a long time and as such have been out of the formal education setting. As a result there may be a need for refresher training and upgrading assistance in the essential skills in order for them to be successful in the certification training and successful in the certification exams.

Essential Skills provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change. The Government of Canada and other national and international agencies have identified and validated nine Essential Skills. These skills are used in nearly every occupation and throughout daily life in different ways and at different levels of complexity. While the commonly accepted list of essential skills includes Reading Text, Continuous Learning, Document Use, Working with Others, Writing, Numeracy (Math), Thinking Skills, Oral Communication and Computer Use, this project focused on the three that are often called literacy skills.

The Canadian Union of Public Employees (CUPE) took the lead for this Project in order to discover whether workers in the sector – unionized and non-unionized – needed assistance in workplace essential skills to help them gain their certification. CUPE Saskatchewan Division applied for funding from the Job Start/Future Skills Sector Partnership Program of

Saskatchewan Learning. Approval for funding was received in December 2002, and work on the project officially began in January 2003.

Stakeholders

An effort was made to create a “sector” committee with representation on it from all constituencies with a role or vested interest in the issue of certification for water and wastewater workers. To this end, correspondence and meetings were initiated with 15 organizations. In the end, the following organizations comprised the Steering Committee:

- Canadian Union of Public Employees
- City of Regina, Water/Wastewater Management
- Communications, Energy & Paper Workers Union
- Federation of Saskatchewan Indian Nations
- Saskatchewan Environment
- Saskatchewan Federation of Labour (Co-Chair, Labour)
- Saskatchewan Institute of Applied Science and Technology (Co-Chair, Education)
- Saskatchewan Labour Force Development Board
- Saskatchewan Learning
- Saskatchewan Regional Colleges
- Saskatchewan Urban Municipalities Association
- Saskatchewan Water and Wastewater Association

Learning Needs Assessment, Workplace Essential Skills

The project used a customized TOWES (Test of Workplace Essential Skills) to assess three workplace essential skills – Reading Text, Document Use, and Numeracy -- of a sample group of 44 water and wastewater workers. TOWES was contracted to develop an essential skills profile of the skills required for the job, have the profile validated by Saskatchewan industry experts, create a custom version of TOWES and mark the tests and provide test results reports.

The significant feature of the TOWES that distinguishes it from so many other tests and assessments is its use of authentic workplace documents such as instructions, diagrams, labels and flowcharts as source material. Workers who take the TOWES must search for information

contained in these documents in order to complete a task or solve a problem. All information required to solve the problem or complete the task is embedded in the document.

Representative sample group:

It was decided to deliver the TOWES only to workers with no certification or with certification up to Level Two. Water and wastewater workers with Levels Three and Four certification either have equivalent to post-secondary education through recognized substitutions of work experience or specialized technical training, or they have the actual formal post-secondary education. Workers with no certification or Levels One and Two certification may be found in all manner of facilities, though the complexity of the plant will be reflected in the higher certification levels of a portion of its workers. TOWES delivery sites were chosen from both urban and rural communities and from sites north of Prince Albert.

Results of the TOWES

The findings of the International Adult Literacy Survey (IALS) indicate that a score of at least 80% in the workplace essential skill being assessed indicates proficiency – an ability to transfer learning and knowledge to another situation in the home, workplace or community, the ability to learn new skills, and the ability to adapt to workplace changes such as new technology. As TOWES is based on the same methodology as IALS, TOWES consequently uses the same 80% score as the level that indicates proficiency.

The Summary Table, below, shows scores and percentages of correct answers in each of the three workplace essential skills surveyed.

Summary Table

Essential Skill		Location / Zone		
		Urban	North of Prince Albert	Other
	Number of Participants	23	9	12
Reading	*Number Passed	16	4	12
	% Pass	70%	44%	100%
Document Use	Number Passed	17	4	11
	% Pass	74%	44%	92%
Numeracy	Number Passed	16	3	10
	% Pass	70%	33%	
Average Percent Passing		71%	40%	92%

Comments, Questions and Concerns from Industry Partners

Participants and plant operators were a valuable source for understanding perspectives around the issue of the mandatory certification for water and wastewater workers. The Project includes this information alongside the hard data in acknowledgement of the impact the certification issue has on all aspects of the workers' lives. Questions and concerns that emerged during the course of the Project centred on issues such as:

- Relevance of Certification Exam to Workplace Culture and Workplace Knowledge
- Exam anxiety
- Personal anxiety and stress
- Fate of water and wastewater workers who will not attain certification

Conclusion

The results of the Water and Wastewater Workers Essential Skills Project indicate that there are significant essential skills issues in the existing workforce in the sector. Even in the relatively small sample group of 44 workers, there is significant evidence of a low level of essential skills.

The geographic and cultural issues as they pertain to the essential skills training needs particularly of northern and Aboriginal workers indicate the need for a variety of options for pilot projects and the development of best practices. Another need is to examine the relationship between the level of essential skills and the pass rate on certification exams administered by the Operator's Certification Board. This first look at the issue shows us that additional investigation is warranted and could be addressed in a second stage of this project.

To respond to the particular needs of the workers and of the industry in general, as ascertained by the Project, several recommendations are presented for consideration by the stakeholders. The recommendations, which are outlined more fully in the complete report, are as follows:

- appropriate models should be developed and piloted to assist workers to increase their proficiency in the essential skills surveyed in the Project and, particularly, in Numeracy and Text literacy;
- all water and wastewater workers in the province who will be writing examinations should be offered the opportunity to attend workshops in examination preparation and practice;
- industry (employer and labour), in partnership with other stakeholders, should undertake additional research into the technical training and essential skills needs of water and wastewater workers in a second stage of the project, through means such as literature reviews, pilot projects, anecdotal research and quantitative and qualitative data gathered on current initiatives that are showing signs of success;
- industry, in partnership with other stakeholders, should develop recommendations on developing a learning strategy, including Recognition of Prior Learning (RPL), and a communication plan around essential skills needs for workers who face challenging certification exams;
- further phases of this project, or a project that deals with matters within this sector, should be contracted to the Saskatchewan Water & Wastewater Association, with the project co-chaired by employer and labour representatives;
- in the North, as well as in other locations where significant essential skills needs exist, additional pilot project funding should be made available to target these needs in a timely and culturally appropriate manner;
- there should be an investigation of whether workers who are having difficulty passing certification-related exams could be given the opportunity of taking the exams by alternative methods;
- the workers, who make significant sacrifices of personal time, family time, and community involvement by preparing for certification exams should receive formal recognition of this by their employer after the parties are consulted about what recognition would be meaningful;
- the operators of water and wastewater treatment facilities should investigate how to best compensate workers for their certification-related work by use of initiatives that might include, but not limited to, providing work time for study, time off in lieu, a peer study opportunity within the workplace, or a monetary compensation;