

APPENDIX Q - Training Requirements

SECTION A. TRAINING PROGRAM

A.1 General Requirements

- A.1.1 Contractor shall develop, implement, continuously update and provide to the City a training program (the "**Training Program**").
- A.1.2 The Training Program shall:
- (a) be designed to comprehensively train plant staff to competently operate and maintain the Infrastructure in accordance with Good Industry Practice;
 - (b) be tailored for the specific audience in each course;
 - (c) ensure that each course accommodates plant staff shift schedules by providing multiple sessions covering the same content if necessary;
 - (d) be focused on field training, organized in a format to most effectively train plant staff including;
 - (i) implement the training using the Infrastructure, and
 - (ii) arrange for and require plant staff to perform the demonstrated procedures, as part of the Training Participant evaluation requirements identified in Section A.9;
 - (e) if classroom training is required it should comprise no more than 20 percent of the training time and the field portion at least 80 percent of the training time;
 - (i) the classroom training shall be completed within the same day as the field training;
 - (f) include ample opportunities for Training Participants to ask questions and have their questions answered;
 - (g) be based upon the Operation and Maintenance Manuals with complete consistency between the training and the Operation and Maintenance Manuals, including Standard Operating Procedures, Safe Work Procedures and LOTO;
 - (i) incorporate feedback from the training into the Operation and Maintenance Manuals in accordance with Operation and Maintenance Information;
 - (h) include the provision of the services of factory trained specialists and equipment manufacturers to instruct plant staff in the operation and maintenance of all equipment and system components during field and classroom training;

- (i) be scheduled and coordinated to not interfere with the operation and maintenance of the existing NEWPCC facility;
- (j) ensure that all training courses are submitted to the Province of Manitoba to be evaluated for possibility of gaining continuing education credits for wastewater treatment operators certification;
- (k) ensure that all operations personnel have completed the required training, as set out in this Appendix, not later than the commencement of Performance Testing; and
- (l) ensures that all other plant staff have completed the required training, as set out in this Appendix, not later than Substantial Completion.
- (m) ensure training covers all aspects of the Infrastructure, including:
 - (i) changing the modes of operation of the systems,
 - (ii) operating the system locally,
 - (iii) operating the system remotely (from the HMI),
 - (iv) operation of the Infrastructure during fault or upset conditions, such as:
 - (A) the identification of, and appropriate responses to, potential faults and errors; and
 - (B) the restoration of the system(s) to normal operating conditions; and
 - (v) any areas requested by staff.

A.1.3 In addition to the requirements of this Section, include and integrate training requirements identified in Part E of Tender Document.

A.1.4 Portions of the training may be provided by subcontractors and suppliers; however, this shall not in any way modify or reduce the Contractor's obligations.

A.2 Training Schedule

A.2.1 Contractor shall prepare, provide and update a schedule of all training activities to implement the Training Program (the "**Training Schedule**").

A.2.2 The Training Schedule shall:

- (a) include:
 - (i) Course name,
 - (ii) Course Lesson Plan submittal dates,

- (iii) Planned session dates and durations, and
 - (iv) planned Training Participant Groups;
 - (b) integrate with the Contractor's Project Schedule;
 - (c) be coordinated with the City in accordance with Section A.6;
 - (i) planned training session dates shall include sufficient flexibility to allow for availability of plant staff. Contractor shall plan for and acknowledge that plant staff training will be interspersed between the plant staffs' regular daily duties;
 - (d) group training topics as necessary to ensure training sessions are a minimum of 1 hour in duration;
 - (e) limit the maximum duration of a training session to 4 hours per day; and
 - (f) limit training to Business Days within the following windows of time:
 - (i) 8:00 am to 12:00 pm, with a 15 minute coffee break; and
 - (ii) 12:45 pm to 3:15 pm, with a 15 minute coffee break.
- A.2.3 Contractor shall submit the Training Schedule and incorporate changes to accommodate the schedule of plant staff. The Training Schedule shall be regularly updated such that the City continuously has the latest revision.
- A.2.4 Contractor shall complete training promptly after completion of a process area so as not to cause a backlog of training.
- A.3 Course Lesson Plans**
- A.3.1 Contractor shall develop, for each training course, a detailed description and plan of the training (the "**Course Lesson Plan**").
- A.3.2 Each Course Lesson Plan shall be consistent with the Training Plan and provide a detailed description that includes:
 - (a) the instructor(s), including qualifications;
 - (b) recommended and minimum number of training sessions;
 - (c) recommended and maximum number of Training Participants within each session;
 - (d) Training Participant evaluation methodology;
 - (e) Training Material in accordance with Section A.14;
 - (f) identification of any applicable resources in addition to the Training Material; and

(g) other supporting information as appropriate.

A.3.3 For each training course, Contractor shall submit the Course Lesson Plan and have received an endorsement of "Received" a minimum of 60 Calendar Days prior to the scheduled start of training.

(a) as part of the City's review process, the City will assess the Contractor's proposed Training Participant Groups for each course, to ensure appropriate training for plant staff.

A.3.4 Contractor shall not proceed with a training course until the corresponding Course Lesson Plan has been endorsed as "Received".

A.3.5 Contractor shall update each Course Lesson Plan based upon the completed training and incorporate any changes made to the training. The revised Course Lesson Plan shall be included with the Training Material, as per Section A.14.

A.4 Training Lead

A.4.1 Contractor shall designate a person (the "**Training Lead**") who shall:

(a) be responsible for updating the:

- (i) Training Program;
- (ii) Training Schedule; and
- (iii) Course Lesson Plans;

(b) be the primary contact for the Contract Administrator and coordinate with the City per Section A.6; and

(c) ensure that training sessions are proceeding according to the Training Schedule.

A.5 Training Participants and Groups

A.5.1 Contractor shall provide and implement the Training Program for the plant staff who will or may be required to operate and maintain the Infrastructure (the "**Training Participants**").

A.5.2 The Training Participants will include the following groups of plant staff (the "**Training Participant Groups**"):

(a) the plant staff responsible for operation of the NEWPCC facility wastewater treatment process and the associated building mechanical systems (the "**Operations Personnel**"); and

(b) the plant staff responsible for maintenance of the NEWPCC facility (the "**Maintenance Personnel**"), who are further grouped as follows;

- (i) Mechanical Maintenance; and

(ii) Electrical and Instrumentation Maintenance.

A.5.3 In addition to the Training Participants, other City staff may attend and observe the training.

A.6 Training Coordination with City

A.6.1 Contractor shall:

- (a) coordinate with the Contract Administrator, or designated representative, regarding dates and times for training sessions. All dates and times are subject to availability of plant staff;
- (b) provide all requests to schedule a training session a minimum of 25 Business Days prior to the planned session along with the course name and proposed Training Participant Groups such that the training session date can be confirmed 20 Business Days ahead of the planned session;
- (c) hold all training sessions at the NEWPCC facility;
- (d) repeat the training session(s) for each group to allow for training of all plant staff. The minimum number of sessions for each group and associated constraints are identified in Table 1.
- (e) coordinate with the City as required to ensure all applicable plant staff are trained.

Table 1 : Training Requirements

Training Participant Groups	Approximate Number of Personnel	Minimum Number of Sessions	Constraints
Operations and Maintenance Personnel	30	2	Crew and shift schedules
		<i>(Note: the training sessions must be held on two separate days.)</i>	

A.6.2 Contractor shall avoid unnecessary modifications to the Training Schedule once established.

A.7 Coordination between Contract Administrator & Contractor

A.7.1 Contract Administrator shall oversee and coordinate between Contract Administrator and Contractor, including suppliers, to provide a comprehensive, cohesive Training Program.

A.8 Instructor Qualification

- A.8.1 Contractor shall provide instructor(s) for each course who:
- (a) are experienced and qualified for the specific training course;
 - (b) have demonstrated prior experience in performing similar training; and
 - (c) have the appropriate instructional and articulate public speaking skills to communicate clearly to the Training Participants.
- A.8.2 Contractor shall ensure that instructors are familiar with the Works, including the Operation and Maintenance Manuals.
- A.8.3 The qualifications of the proposed instructors shall be submitted for review and approval minimum four (4) weeks prior to training.

A.9 Classroom Training Requirements

- A.9.1 Classroom training sessions will be held in a room provided by the City at the NEWPCC facility.
- A.9.2 Contractor shall:
- (a) use appropriate learning resource materials, including slides and drawings, to aid in training clarity and effectiveness;
 - (b) make available applicable reference materials where it will be beneficial for the Training Participants to reference the material covered during the training. For example, paper copies of SOPs and SWPs should be provided, if beneficial to the training objectives;
 - (c) ensure all practical components are provided to ensure that Training Participants are able to see and hear the training. Provide projectors and screens as required, easily viewable and readable by all Training Participants; and
 - (d) be responsible for any temporary networking or other associated computer and audio requirements to implement the training sessions.
- A.9.3 Contractor shall structure the training to provide an interactive environment that promotes active participation. The instructor shall use discussion, questions and activities as appropriate during each session to provide engagement, enhance learning and to verify that the information presented is being understood.
- A.9.4 Contractor shall record classroom training sessions in accordance with Section A.15.

A.10 Field Training Requirements

- A.10.1 For all field training sessions, Contractor shall:

- (a) implement the training using the constructed Project, unless otherwise approved by the Contract Administrator;
- (b) provide field training sessions in a manner that all Training Participants can see and hear all demonstrations provided;
- (c) arrange for and require plant staff to perform the demonstrated procedures, as part of the Training Participant evaluation requirements identified in Section A.11; and
- (d) ensure all training is in accordance with Safe Work Plans and Standard Operating Procedures and include training on their application and use.

A.11 Participant Evaluation Requirements

- A.11.1 As part of each field training session, Contractor shall provide and execute an evaluation method consisting of either written or practical demonstration components to test each Training Participant in their understanding of the learning objectives, course content and ability to perform the tasks addressed by the course.
- A.11.2 Approximately 180 Calendar Days after Substantial Completion, the Training Participants shall be re-evaluated by the instructor to determine if the Training Participants are carrying out tasks in accordance with the training received. If Training Participants fail the evaluation or have additional questions, Contractor shall provide additional training in those topics, in accordance with this Appendix.

A.12 Training Participant Feedback Requirements

- A.12.1 Contractor in coordination with the Contract Administrator shall:
 - (a) At the end of each training session, provide each Training Participant with a copy of the Training Participant Feedback Form, included in this Appendix as Template B;
 - (b) collect the forms and deliver to the City a copy of each Training Participant Feedback Form; and
 - (c) Utilize feedback provided to update the training material and improve the training for subsequent sessions.

A.13 Training Deliverables

- A.13.1 Contractor shall provide all material used in the training to the City;
- A.13.2 Contractor shall provide shareable content object reference model (SCORM) of Training Materials to be used for future City training;
 - (a) SCORM is a collection of standards and specifications for web-based electronic educational technology (also called e-learning). By using software like Adobe Captivate, Storyline etc. to create training modules which incorporate slide content information, edited videos, etc. and contain module

quizzes to test employees' knowledge in a single e-learning pack package for upload to a learning management system.

- (b) SCORM courses should include presentation slides from classroom training, embedded and edited videos and an end of module quiz including a minimum of 5 questions specific to the learning objectives. Each course should be customized for the specific training participants.
- (c) Training Videos may be embedded in the SCORM and shall meet the requirements of *Section A.15*.

A.14 Training Material

A.14.1 The Training Material shall be provided in electronic native, editable file format and include the following:

- (a) Course Lesson Plans;
- (b) a list of all course materials;
- (c) classroom slide presentations in Microsoft PowerPoint format;
- (d) other audio / visual material (videos, etc.);
- (e) handouts;
- (f) speaking notes (as applicable);
- (g) course Training Participant evaluation material (quizzes, tests, etc.); and
- (h) answer keys for the course Training Participant evaluations..

A.14.2 The Training Material shall be organized by course, with all material used and collected from Participant Groups during training systematically arranged in a consistent manner.

A.15 Training Videos

A.15.1 Contractor shall provide videos to augment the SCORM (the "**Training Videos**"). When Training Videos are embedded in the SCORM, Contractor shall:

- (a) provide a minimum of one set of videos for each classroom training course (Contractor to retain services of a qualified videographer as required for video recording/editing of training videos.);
- (b) select sessions to record to provide the most comprehensive and highest quality of video training; and
- (c) replace or amend videos as required in the event that the training content for a course is amended after recording a training session.

A.15.2 Training Videos shall:

- (a) be in a SCORM-compatible format;
- (b) have high definition audio (48 kHz, 16 bit) or better;
- (c) be separated and organized by course and into clips/segments on each topic, with each clip/segment limited to approximately 15 minutes;
- (d) be recorded with sufficient technical skill and recording quality to clearly illustrate the subject matter;
- (e) be structured to provide a logical sequence of learning;
- (f) be edited to remove distractions;
- (g) be edited to prevent embarrassment of Training Participants;
- (h) be edited to fill in any gaps in the live presentation, such that the recording completely addresses the learning objectives of the training; and
- (i) be recorded in adequate lighting to ensure a high quality of video. the Contractor shall provide additional lighting, if necessary.

A.16 Training Records

A.16.1 The Training Records shall include for each session:

- (a) Training Participant Registers; and
- (b) results of evaluations by individual and summarized by course (the **"Participant Evaluation Results"**).

A.16.2 Contractor shall record all Training Participants for each training session on a register (the **"Training Participant Register"**).

- (a) the Training Participant Registers shall be based upon the template included in this Appendix as Template A.

A.16.3 Contractor shall provide all Training Records in pdf file format.

A.16.4 Contractor shall submit all Training Records not later than 60 Calendar Days prior to Substantial Completion.

A.17 Declaration of Course Completion

A.17.1 Upon completion of the requirements for each course in the Training Schedule, Contractor shall provide a completed and signed Declaration of Course Completion form, included in this Appendix as Template B.

SECTION B. CERTIFICATES

B.1 General

B.1.1 Contractor shall perform the training in accordance with the Training Program and to the satisfaction of the Contract Administrator. The Contract Administrator may provide feedback, which shall be incorporated into subsequent training sessions or require repeat of one or more training sessions to address training quality issues.

B.2 Certificate of Training Completion

B.2.1 If the Contract Administrator determines that the Contractor has met the requirements of the criteria in Section B.2.2, the Contract Administrator shall issue to Contractor and the City a certificate certifying that the training has been completed (the "**Certificate of Training Completion**").

B.2.2 The criteria for the Certificate of Training Completion are:

- (a) plant staff have been fully trained, and such training is in accordance with the Training Plan, the Course Lesson Plans and this Appendix;
- (b) Contractor has submitted all associated Training Material and Training Records to the City; and
- (c) a Declaration of Course Completion has been issued by the Contractor for each corresponding course component within the Training Plan.

TEMPLATE A

TRAINING PARTICIPANT TEMPLATE

The existing template is attached as an image on the following page.

The City reserves the right to update the template at any time, including up until the time the template is required for training purposes.


The Microsoft Word format template will be made available after the Effective Date at request of Contractor.

TEMPLATE B
DECLARATION OF COURSE COMPLETION

The template is attached as an image on the following.

The City reserves the right to update the template at any time, including up until the time the template is required for training purposes.

The Microsoft Word format template will be made available after the Effective Date at request of Contractor.

	<h2>Declaration Of Course Completion</h2>	Document Code:
		Date: yyyy-mm-dd
Project:	NEWPCC Upgrade	
Course:	Name of course	
Organization:	Name of organization providing the training	
Trainer(s):	First and last names of all trainers	

Session	Supporting Documents (Provide Document Numbers)		
	Attendance Register	Attendee Evaluation (Quizzes, etc.)	Post-Course Evaluation Feedback Forms
1			
2			
3			
4			

We have completed the indicated course and the attendees have been adequately trained in the operation and maintenance of the specific Infrastructure, in accordance with the Training Plan, the specific Course Lesson Plan and Appendix 18G of the Design Build Agreement.

 Print Name
 (Trainer)

 Signature

 Date (yyyy/mm/dd)

 Print Name (Authorized Representative of
 Design Builder)

 Signature

 Date (yyyy/mm/dd)