



976-2016 ADDENDUM 1

SOUTH END SEWAGE TREATMENT PLANT (SEWPCC) UPGRADING / EXPANSION PROJECT - CONTRACT 4 – SITEWIDE MECHANICAL, ELECTRICAL, CONCRETE AND SITE WORKS

URGENT

**PLEASE FORWARD THIS DOCUMENT TO
WHOEVER IS IN POSSESSION OF THE BID
OPPORTUNITY**

ISSUED: May 29, 2017
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**THIS ADDENDUM SHALL BE INCORPORATED
INTO THE BID OPPORTUNITY AND SHALL
FORM A PART OF THE CONTRACT
DOCUMENTS**

Template Version: A20150806

Please note the following and attached changes, corrections, additions, deletions, information and/or instructions in connection with the Bid Opportunity, and be governed accordingly. Failure to acknowledge receipt of this Addendum in Paragraph 10 of Form A: Bid may render your Bid non-responsive.

GENERAL

1. The 3D model presented at the Bidders' Conference on May 8, 2017 will be made available to the Bidders upon request. Requests for a copy of the 3D model shall be made via email to the Contract Administrator identified in D8.1. The Bidder is advised that the 3D model is for reference only and is not a true interpretation of the drawings and specifications and is only being provided to help the Bidders visualize the information shown in the drawings and specifications.
2. Included in this addendum are the following excel spreadsheets:
 - Valve Schedule
 - Instrument List
 - Cable List
 - PLC Module List
 - Automation Equipment List

These excel spreadsheets are being provided to the Bidders for reference only. Use of these spreadsheets is at the Bidders' own risk.

PART E - SPECIFICATIONS

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 11 00

SUMMARY OF WORK

- Add:
- | | |
|-------------|--|
| 1.1 F. 23. | Temporary PLC and HMI programming to accommodate the construction sequence. |
| 1.2 B. 3.i. | Supply and install new 12.47 kV electrical distribution equipment within Electrical Building |
| 1.6 H | In all cases the installation of systems must be coordinated between trades and installed in accordance with code requirements. The requirement to relocate systems that do not meet basic code requirements will be done at the Contractor's cost, and will not be deemed an extra to the Contract. |

Revise:

- 1.2 B. 3.e. to read Re-feed the existing main switchgear (SGR-S701 and SGR-S702) in the Secondary Clarifier main electrical room.
- 1.2 B. 3.g. to read Supply and install diesel standby generators, fuel systems, and associated controls . Contactor to completely fill all fuel tanks with diesel fuel prior to turn over to the City. This includes the interior tank, as well as the exterior bulk fuel storage tank. The diesel fuel located exterior to the facility shall be treated with anti-gel additives.
- 1.2 B.7. to read Facility Area M – Administration Building
- a. Supply and installation of control system servers and network equipment as shown on the Drawings and Specifications.
 - b. Modifications to existing Administration Building including reconfiguring Control Room / Server Rooms as shown on the Drawings and Specifications.
 - c. Supply and install building mechanical upgrades as indicated, including new and upgraded heating, ventilating, and air conditioning (HVAC).
 - d. Upgrade existing distributed control system (DCS) to PLC based system (DCS migration)
 - e. Modify and expand the existing intercom systems. Run new cabling in conduit from the head-end equipment located in the Administration Building, to all the new Facility Areas.
 - f. Expand and modify the intercom head-end equipment located in the Administration Building electrical room.
 - g. Supply and install Systems Integration Work
 - h. Asbestos abatement as shown on the Drawings and Specifications
- 1.2 B.12.f to read Modify existing UV electrical room to accommodate the new electrical equipment.
- 1.2 B.12.h to read Supply and install new UV electrical service and ground system
- 1.2 B.13.e to read Supply and install concrete encased duct banks with manholes to convey power and communication feeders to new and existing plant areas from the new Electrical Building as shown on the Drawings and Specifications.
- 1.2 B.14.j to read Supply and install all breakers, VFDs, starters, MCC sections, panels, battery banks, disconnect switches, and all other devices as specified and shown on the Drawings.
- 1.2 B.14.l to read Replace all existing exit signs within the existing SEWPCC Facility. Provide new running man style exit signs throughout all existing buildings to match exit signage in new Facility Areas. Confirm voltage levels and all other requirements prior to ordering exit signs.
- 1.2 B.14.m to read Replace existing exterior lights with new LED fixtures as shown on the Drawings.
- 1.2 B.14.o to read All existing tagged equipment within the facility shall be re-identified with the new tag numbers shown on the drawings, and to conform to the City's WWD Identification Standard document. Supply and install rigid lamacoid tags for all equipment (either plastic or metal).

- 1.2 B.14.p to read The instruments to re-tag are to include, but not be limited to those listed in A-0102-AELI-A012 – Existing Instruments to Re-Identify.
- 1.2 B.14.x to read Supply and install plant wide lightning protection for new and existing buildings. Lightning protection coverage shall be as shown on the drawings. The UV building, and the Secondary Clarifiers do not require lightning terminals.
- 1) Bond structural steel members to the ground system for the Secondary Clarifier 4 & 5 tanks, and the Bioreactors.
 - 2) Bond fencing to the ground system as indicated on the drawings.
- 1.2 B.14.y to read Supply and install fibre optic cabling and associated network equipment for a new plant-wide fibre optic system. Supply and install a new PLC based Process Control System (PCS) for the SEWPCC Facility.

SECTION 01 79 00 DEMONSTRATION AND TRAINING

Revise:

- 1.6A to read Provide Training for the equipment and systems listed in the following table, and as otherwise Specified.

| Equipment / System | Specification Reference | Minimum Number of Person Days for Training, per Shift |
|---|--------------------------------|--|
| Temporary Conveyor | 01 50 00 | 2 person days |
| SBS-Modified Bituminous Membrane Roofing | 07 52 16 | ½ person days |
| Wet-Pipe Sprinkler Systems | 21 13 13 | 1 person day |
| Generator Fuel Oil System | 23 11 10 | 1 ½ person days |
| HVAC Fans | 23 34 00 | 2 person days |
| Exhaust System and Stacks | 23 51 01 | 1 ½ person days |
| Heat Exchanger | 23 57 00 | 1 person day |
| Air Handling Units | 23 77 00 | 2 person days |
| Unitary Air Conditioning Equipment | 23 81 00 | 2 person days |
| Terminal Heating and Cooling Units | 23 82 00 | 2 person days |
| Primary Switchgear Assembly to 15 kV | 26 13 18 | 2 person days |
| Low Voltage Switchgear | 26 23 00 | 2 person days |
| Motor Control Centre | 26 24 19 | 3 person days |
| Ground Fault Protection | 26 28 18 | 2 person days |
| Variable Frequency Drives | 26 29 23 | 2 person days |
| Diesel, Electric Generating Units (Liquid Cooled) | 26 32 10 | 2 person days |
| Static Uninterruptible Power Supply | 26 33 53 | 4 hours/UPS system |
| Active Harmonic Filter Power Factory Correction | 26 35 33 | 2 person days |
| Central Emergency Lighting System | 26 52 02 | 2 person days |
| Multiplex Fire Alarm Systems | 28 31 02 | 1 person day |
| Fabricated Slide Gates and Stop Logs | 35 20 16.25 | 4 person days |
| Instrumentation and Control Components | 40 91 01 | 8 person days |
| Applications Software – Management Seminar | 40 96 00 | 1 person days |
| Applications Software – Operations | 40 96 00 | 16 person days |

| Equipment / System | Specification Reference | Minimum Number of Person Days for Training, per Shift |
|--|--------------------------------|--|
| Applications Software – Software Maintenance | 40 96 00 | 10 person days |
| Applications Software – Simulator | 40 96 00 | 4 person days |
| Overhead and Gantry Cranes | 41 22 13.13 | 2 person days |
| Monorail Hoists | 41 22 23.19 | 1 person day |
| Steel Platform Truck Weigh Scales | 41 24 40 | 2 person days |
| Multistage Centrifugal Blowers | 43 11 15.13 | 3 person days |
| High Speed Turbo Blowers | 43 11 15.15 | 3 person days |
| Rotary Lobe Air Blowers | 43 12 03 | 3 person days |
| Screw Induced Flow Centrifugal Pumps | 43 21 13.13 | 4 person days |
| Horizontal Split-Case Centrifugal Pumps | 43 21 13.16 | 2 person days |
| Non-Clog Dry-Pit Centrifugal Pumps | 43 21 13.19 | 6 person days |
| Horizontal End Suction Centrifugal Pumps | 43 21 13.23 | 4 person days |
| Induced Flow (Recessed Impeller) Centrifugal Pumps | 43 21 13.29 | 4 person days |
| Submersible Axial Flow Pumps | 43 21 38 | 1 person day |
| Submersible Pumps | 43 21 39.13 | 1 person day |
| Chopper Pumps | 43 21 39.16 | 1 person day |
| Process Electric Water Heater | 43 40 03 | 2 person days |
| Biofilter Odour Control System | 44 31 21 | 2 person days |
| Rotary Lobe Pumps | 44 42 56.14 | 4 person days |
| Motorized Automatic Strainers | 44 43 33 | 3 person days |
| Screening Equipment | 46 21 11 | 6 person days |
| Vortex Grit Chamber Equipment | 46 23 23 | 4 person days |
| Cyclone Separator and Grit Washer | 46 23 27 | 4 person days |
| Dry Polymer Make Down and Feed Systems | 46 33 33.03 | Two ½ person days/polymer system |
| Chemical Metering Diaphragm Pump Skids | 46 33 42 | 1 person-day/chemical system |
| Chemical Metering Gear Pump Skids | 46 33 42.13 | 1 person-day/chemical system |
| Submersible Mixers | 46 41 23 | 4 person days |
| Fermenter Mixers | 46 41 24 | 7 person days |
| Hydraulic Mixing Equipment | 46 41 48 | 1 person day |
| Secondary Clarifier Mechanism | 46 43 16.13 | 4 person days |
| Coarse Bubble Air Diffusers for Channels | 46 51 21.13 | 2 person days |
| Coarse Bubble Air Diffuser System for Tanks | 46 51 21.16 | 4 person days |
| UV Disinfection System | 46 66 20 | 4 person days |
| RDT Wash Water Boosting System | 46 70 01 | 3 person days |
| Rotary Drum Thickeners | 46 71 33 | 6 person days |
| Network Equipment | 40 95 53 | 4 person days |
| PROFIBUS Training | 40 95 33 | 4 person days |
| Modbus Training | 40 95 33 | 4 person days |

Add:

1.9 TRAINING FOR STANDARDIZED GOODS

- A. Coordinate the training to be provided by Standardized Goods vendors as specified in Section E5, E6, E7, and E8 of the Bid Opportunity.

DIVISION 23 – HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

SECTION 23 82 00.05 ELECTRIC BASEBOARD HEATERS SCHEDULE

Revise 23 82 00.05 Data Sheet - 3 to read:

| ELECTRIC BASEBOARD HEATERS | | | | 23 82 00.05 | | | |
|---|----------|--|----|--|--|--|--|
| SYMBOL | | | | HTR-C670 | | | |
| LOCATION | | | | CHEMICAL FILL STATION 2 | | | |
| TYPE | | | | BASEBOARD ELECTRIC HEATER, HEAVY DUTY | | | |
| UNIT ELECTRICAL DATA | CAPACITY | | kW | 0.5 | | | |
| | VOLTAGE | | V | 208 | | | |
| | PHASE | | - | 1 | | | |
| MAXIMUM DIMENSIONS | LENGTH | | mm | 381 | | | |
| | WIDTH | | mm | 178 | | | |
| | HEIGHT | | mm | 533 | | | |
| | WEIGHT | | kg | 17 | | | |
| MANUFACTURER | | | | INDEECO | | | |
| MODEL NO. | | | | CE 1-1/2 | | | |
| APPLICABLE REMARKS: | | | | B | | | |
| REMARKS: | | | | | | | |
| A: ROOM THERMOSTAT CONTROL B: BUILT-IN CONTROL INCLUDE ADJUSTABLE THERMOSTAT | | | | | | | |

DIVISION 35 – WATERWAY AND MARINE CONSTRUCTION

SECTION 35 20 16.25 FABRICATED SLIDE GATES AND STOP LOGS

Delete:

- 2.6 E.1.p. Provide minimum of six independently configurable latching relays for remote

indication as follows:

- 1) Relay 1 shall make when gate is fully CLOSED.
- 2) Relay 2 shall make when gate is fully OPEN.
- 3) Relay 3 shall break when gate is fully CLOSED.
- 4) Relay 4 shall break when gate is fully OPEN.
- 5) Relay 5 for collective FAULT (torque fault and other electrical faults).
- 6) Relay 6 shall indicate when REMOTE is selected

2.6 E.5.c. Externally operable power disconnect switch.

DIVISION 40 – PROCESS INTEGRATION

SECTION 40 27 02 PROCESS VALVES AND OPERATORS

Delete:

2.6 C.5.c. Externally operable power disconnect switch.

SECTION 40 95 13 CONTROL PANELS

Add:

2.6 CC. DCS Migration Cables

1. As part of the DCS migration, provide pre-manufactured cables from Schneider Electric for connection of the existing DCS termination units to the new Remote IO racks.
2. These products were standardized by the City via RFP 449-2014.
3. No alternates or substitutes will be accepted.
4. All requests for purchase or quotation shall reference RFP 449-2014 to receive standardized pricing that the City has negotiated with the vendor.
5. Refer to the drawings and the DCS Migration Plan S0926-01CA-PLA-0001 for further details.
6. The City will supply to the Contractor “free issue” a total of 78 DCS Migration Cables broken out as follows:
 - a. Qty 10, Schneider Model No. 990ADBLYX80103, Discrete Input Migration Cable 5.0 meter length
 - b. Qty 20, Schneider Model No. 990ADBLYX80103, Discrete Input Migration Cable 4.5 meter length
 - c. Qty 20, Schneider Model No. 990ADBLYX80103, Discrete Input Migration Cable 4.2 meter length
 - d. Qty 10, Schneider Model No. 990ADBLYX80103, Discrete Input Migration Cable 4.0 meter length
 - e. Qty 15, Schneider Model No. 990ADBLYX80104, Discrete Output Migration Cable 4.2 meter length
 - f. Qty 3, Schneider Model No. 990ADBLYX80104, Discrete Output Migration Cable 4.0 meter length
7. The cables identified in 6. are not exhaustive of the scope of supply and additional DCS Migration Cables will be required. The Contractor shall supply additional DCS Migration Cables in accordance with D5 Standardized Goods.

DIVISION 43 – PROCESS GAS AND LIQUID HANDLING, PURIFICATION AND STORAGE EQUIPMENT

SECTION 43 21 13.23 Horizontal End Suction Centrifugal Pumps

Revise:

EQUIPMENT AND COMPONENT NUMBERS to read

Equipment and component numbers are as indicated on the Pump Data Sheets at end of section.

SECTION 43 21 39.16 CHOPPER PUMPS

Add to:

PUMP DATA SHEET NO. 1

SECONDARY CLARIFIERS SCUM PUMPS

Manufacturer and Model: (3) WSP Chop-Flow 6x4 CF4

PUMP DATA SHEET NO. 2

FERMENTER RECIRCULATION PUMPS

Manufacturer and Model: (3) WSP Chop-Flow 6x4 CF4 impeller diameter 187 mm

Revise:

PUMP DATA SHEET NO. 2

FERMENTER RECIRCULATION PUMPS

Equipment Tag Number(s): P-D321, P-D322, P-D-D323 Equipment Tag Number(s): P-D321, P-D322, P-D323
to read:

DIVISION 46 – WATER AND WASTEWATER EQUIPMENT

SECTION 46 01 01 INSTALLATION OF CITY SUPPLIED EQUIPMENT

Revise:

1.1 A. to read: The Contractor shall provide all services to install the City Supplied Equipment (High Rate Clarification (HRC) Equipment, and Free-Moving Media Screens and Aeration System (IFAS) Equipment) as shown in the Drawings and in Appendices E through L.

1.2 B. to read Contractor shall unload and install the City-Supplied Products and accessories at the Site according to the Manufacturer's written instructions, Shop Drawing Submittals, and Contract Drawings. City-Supplied Products Shop Drawings and Bills of Material are included in Appendices E through L.

2.1 C. to read Connection hardware such as anchor bolts, washers, nuts, etc. are provided with the City-Supplied Products by the Supply Contractor. Supply any additional hardware and pipes not specifically stated in the manufacturer's bill of materials (Appendix E and Appendix J). Additional hardware shall be Type 316 stainless steel in accordance with

Section 05 50 00, Metal Fabrications (Basic). Number and size as recommended by the Supply Contractor.

SECTION 46 66 20

UV DISINFECTION SYSTEM

Revise:

- 1.1 A 2. to read: Section 40 99 90, Package Control Systems
- 1.3 B.7. to read All requirements from specification section 40 99 90, Package Control Systems must be met.
- 1.3 B. 16. to read Submittals conforming to the requirements of Section 40 99 90, Package Control Systems.
- 1.4 A. to read Meet with the City's PCS programming team to discuss aspects of the machine and process control strategies, network functions and OI graphics, and the Section 40 99 90, Package Control Systems to discuss the City's standards and levels of control (LOCAL, PLTMAN, PLT-AUTO, etc.). Propose, discuss, and explain alternative methods, styles, hierarchy, modules and other considerations.
 - 1. Meet for one-day each at approximately 0 percent and again at 50 percent complete of software development.
 - 2. Meet at the Project Site for two sessions, five hours each.
- 2.20 A. to read Control panels shall be in accordance with the requirements of Section 40 99 90, Package Control Systems. Provide all items, including items not specifically called out, that are required to implement the specified performance and functions and the functions required for proper system operation.

APPENDICES

Replace: 976-2016 Appendix-U-Cable List with 976-2016 Appendix-U-Cable List_R01

Add: Appendix FF The City of Winnipeg, Water and Waste Department, Wastewater Treatment Facilities Automation Design Guide

DRAWINGS

C – Chemical / Electrical Building

- Replace: 976-2016_Drawing_1-0102-ACBD-C017_Sht002-R00 with 976-2016_Addendum_1-Drawing_1-0102-ACBD-C017_Sht002-R01
- Replace: 976-2016_Drawing_1-0102-ACBD-C079-R00 with 976-2016_Addendum_1-Drawing_1-0102-ACBD-C079_Sht001-R01
- Replace: 976-2016_Drawing_1-0102-ESLD-C001-R00 with 976-2016_Addendum_1-Drawing_1-0102-ESLD-C001_Sht001-R01
- Replace: 976-2016_Drawing_1-0102-ESLD-C002-R00 with 976-2016_Addendum_1-Drawing_1-0102-ESLD-C002_Sht001-R01

D – Fermenters and Thickeners

- Replace: 976-2016_Drawing_1-0102-ACBD-D068-R00 with 976-2016_Addendum_1-Drawing_1-0102-ACBD-D068_Sht001-R01

G – Headworks

Replace: 976-2016_Drawing_1-0102-ACBD-G023_Sht002-R00 with 976-2016_Addendum_1-Drawing_1-0102-ACBD-G023_Sht002-R01

Replace: 976-2016_Drawing_1-0102-ACBD-G024_Sht001-R00 with 976-2016_Addendum_1-Drawing_1-0102-ACBD-G024_Sht001-R01

Replace: 976-2016_Drawing_1-0102-ACBD-G025-R00 with 976-2016_Addendum_1-Drawing_1-0102-ACBD-G025_Sht001-R01

Replace: 976-2016_Drawing_1-0102-ACBD-G066-R00 with 976-2016_Addendum_1-Drawing_1-0102-ACBD-G066_Sht001-R01

Replace: 976-2016_Drawing_1-0102-EGAD-G002-R00 with 976-2016_Addendum_1-Drawing_1-0102-EGAD-G002_Sht001-R01

R – BNR Facility (Bioreactors & Blower Bldg)

Replace: 976-2016_Drawing_1-0102-ACBD-R003_Sht002-R00 with 976-2016_Addendum_1-Drawing_1-0102-ACBD-R003_Sht002-R01

Replace: 976-2016_Drawing_1-0102-ACBD-R004_Sht002-R00 with 976-2016_Addendum_1-Drawing_1-0102-ACBD-R004_Sht002-R01

Replace: 976-2016_Drawing_1-0102-ACBD-R005-R00 with 976-2016_Addendum_1-Drawing_1-0102-ACBD-R005_Sht001-R01

Replace: 976-2016_Drawing_1-0102-MGAD-R607-R02 with 976-2016_Addendum_1-Drawing_1-0102-MGAD-R607-R03

Replace: 976-2016_Drawing_1-0102-MGAD-R608-R02 with 976-2016_Addendum_1-Drawing_1-0102-MGAD-R608-R03

Replace: 976-2016_Drawing_1-0102-MGAD-R609-R04 with 976-2016_Addendum_1-Drawing_1-0102-MGAD-R609-R05

Replace: 976-2016_Drawing_1-0102-MGAD-R610-R02 with 976-2016_Addendum_1-Drawing_1-0102-MGAD-R610-R03

Replace: 976-2016_Drawing_1-0102-MGAD-R621-R02 with 976-2016_Addendum_1-Drawing_1-0102-MGAD-R621-R03

Replace: 976-2016_Drawing_1-0102-MGAD-R622-R02 with 976-2016_Addendum_1-Drawing_1-0102-MGAD-R622-R03

S - Secondary Clarifiers

Replace: 976-2016_Drawing_1-0102-ABDG-S001-R00 with 976-2016_Addendum_1-Drawing_1-0102-ABDG-S001_Sht001-R01

Replace: 976-2016_Drawing_1-0102-ANET-S012_Sht001-R00 with 976-2016_Addendum_1-Drawing_1-0102-ANET-S012_Sht001-R01

Replace: 976-2016_Drawing_1-0102-MGAD-S502-R05 with 976-2016_Addendum_1-Drawing_1-0102-MGAD-S502-R06

QUESTIONS AND ANSWERS

- Q1: Section 47 27 02 – Valve Schedule appears to have been originally prepared on an Excel Document. It would be advantageous to our work flow to have this schedule on an Excel Document. We would like to request a copy of the Valve Schedule as editable Excel Document.
- A1: An excel copy of the valve schedule in Section 40 27 02 has been included in Addendum 1.
- Q2: Specification section 43 21 39.13 has pumps P-T261 & P-T262 defined as having 3 kW motors in the data sheets. Please clarify if this is the correct power rating for these pumps.
- A2: The motor size is 3 kW based on the first vendor listed in the specification.

- Q3: In spec section 23 51 02- Freestanding Stack 2.1 A it has- A. Factory welded cylindrical single wall freestanding stack of 72 inches' diameter by 33 of height. The sections of the stack shall be up to 50 feet in length. Please confirm what is meant by 33 of height? Please Clarify
- A3: The stack shall be designed, supplied and installed having a total height of 33 ft (10.058 m) and provided in one piece.
- Q4: As described in the Process Piping Schedule defined under pipe specification 40 27 00.03 there are different pipe schedules required for different pipe size ranges. In our initial discussion with suppliers it was communicated that while Sch. 20 & 30 pipe is available, fittings to match spec are not. We request the option to use Standard weight, min. 9.5 mm (3/8 in) wall thickness for pipe and fittings under this pipe section for the size range 65mm and larger. Please clarify?
- A4: Using Standard Weight (Schedule 40) fittings for thinner wall pipe (e.g. Schedule 20, 30) is acceptable.
- Q5: In spec section 23 82 00 Terminal Heating and Cooling Units, Electric Baseboard Heaters, Symbol HTRC670 in the Applicable Remarks line has a "C". Under this in the Remarks there is no "C". Only "A" & "B". Please Clarify the "C".
- A5: The remark should be a "B" and not a "C".