



WATER & SEWER UTILITY

TENDER

**BIOSOLIDS RECEIVING, TRANSPORTATION,
STORAGE AND UTILIAZATION**

FEBRUARY 2017

SUBJECT

SECTION

BIDDING AND CONTRACT REQUIREMENTS

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	Charlottetown Pollution Control Plant, Estimated BioSolids Metal Value

1. General

- 1.1. This project includes for the supply of all equipment, labour and materials necessary to receive, transport, store and utilize biosolids from the Charlottetown Pollution Control Plant (CPCP) in Charlottetown, PEI, all in accordance with Prince Edward Island Department of Communities, Land and Environment (PEIDCLE) and other regulatory agency requirements.
- 1.2. The work generally includes the following:
 - 1.2.1. Obtaining all regulatory agency permits and approvals necessary to allow the proposed biosolids utilization procedures to proceed. The “Atlantic Canada Standards and Guidelines Manual for the Collection, Treatment, and Disposal of Sanitary Sewage, Appendix G – Sludge Utilization on Land”, will be the guiding document and is appended to this document.
 - 1.2.2. Receiving biosolids at the Charlottetown Pollution Control Center.
 - 1.2.3. Transporting the biosolids in approved covered hauling equipment, meeting environmental and highway transportation standards.
 - 1.2.4. Transporting on approved hauling routes.
 - 1.2.5. Storage and utilization of biosolids all in accordance with the current Atlantic Canada Standards and Guidelines Manual for the Collection, Treatment, and Disposal of Sanitary Sewage and other applicable legislation.
- 1.3. Transportation, storage and utilization of the material becomes the responsibility of the Contractor when it leaves the CPCP site.

PROJECT: BIOSOLIDS RECEIVING, TRANSPORTATION, STORAGE AND UTILIZATION

OWNER: CHARLOTTETOWN WATER AND SEWER UTILITY

1. Tender Submission

- 1.1. Submit completed Tender Form and Supplementary Tender Information for above project in a sealed opaque envelope marked as follows:

TENDER

Biosolids Receiving, Transportation, Storage and Utilization

Closing at 2:00:00 pm, local time, March 21, 2017.

Attention: City of Charlottetown
Controller
City Hall
3rd Floor, 199 Queen Street Charlottetown, PEI
C1A 7K2

2. Tender Opening

- 2.1. There will be a public opening on the second floor of City Hall at 2:05 pm on March 21, 2017.

3. Pre Tender Questions

- 3.1. In the event of questions, Contractors are to submit written questions no later than March 14, 2017, by email, to Stephen Wedlock, Controller - swedlock@charlottetown.ca

4. Inspection of the Works

- 4.1. Contractors are advised that there will not be a scheduled pre-tender meeting or site visit. Contractors are advised to independently schedule meetings during the normal hours of Utility work (Monday to Friday 8 AM to 4 PM) for a site visit or questions. Inspection of the works will be by appointment only. Appointments may be made by contacting Steven Stewart at (902) 628-6647.

5. Accuracy of Referencing

- 5.1. Indexing and cross-referencing are for convenience only.

6. Conditions of Tendering

- 6.1. Take full cognizance of content of all Contract Documents in preparation of Tender. Refer to Section 00330 - Form of Tender, Subsection 3.8 for a complete list of Contract Documents.

7. Tenderers to Investigate

- 7.1. Tenderers will be deemed to have familiarized themselves with existing site and conditions and all other conditions which may affect performance of the work. No plea of ignorance of such conditions as a result of failure to make all necessary examinations will be accepted as a basis for any claims for extra compensation or an extension of time.

8. Clarification and Addenda

- 8.1. Notify the Owner not less than five (5) working days before Tender Closing of omissions, errors or ambiguities found in Contract Documents. If the Owner considers that correction, explanation or interpretation is necessary; a written addendum will be issued. All addenda will form part of Contract Documents.

- 8.2. Confirm that all addenda have been received.

- 8.3.** Any addendums will be posted on the City of Charlottetown website (<http://www.city.charlottetown.pe.ca/tenders.php>). **Bidders are responsible for checking the website for quote/tender notices, documents, and addendums. The City is not responsible for ensuring bidders have obtained addendums.**

9. Preparation of Tender

- 9.1. Complete Tender Form provided with Project Documents in ink or by typewriter. Tender all items and fill in all blanks. Have corrections initialed by person signing Tender.

10. Taxes

- 10.1. Include all applicable taxes except Federal Goods and Services Tax in tender prices.
- 10.2. The Contractor will indicate on each application for payment, as a separate amount, the appropriate Federal Goods and Services Tax the Owner is legally obliged to pay. This amount will be paid to the Contractor in addition to the amount certified for payment under the Contract.

11. Tender Security

- 11.1. Provide Tender Security in amount of 2% of the sub-total amount identified for Option 1 in the Schedule of Quantities and Unit Prices in Section 00330 with Tender in the form of a Certified Cheque or Money Order payable to the Owner.

12. Contract Security

- 12.1. Refer to Section 00720 - General Conditions, subsection GC20 – PERFORMANCE SECURITY for form and amount of Contract Security

13. Insurance

- 13.1. Refer to Section 00720, General Conditions, subsection GC17 - INSURANCE, for insurance required.

14. Agreement

14.1. Agreement is attached for information purposes only.

15. Return of Tender Security

15.1. Tender Security will be returned to:

15.1.1. All except the three lowest acceptable Tenderers within seven (7) days of Tender Opening.

15.1.2. Two remaining unsuccessful Tenderers within fourteen (14) days of date of Award.

15.1.3. Successful Tenderer following receipt by Owner of executed Agreement, specified Contract Security, and Insurance documents.

16. Amendment or Withdrawal of Tender

16.1. Tenders may be amended or withdrawn by submitting amendment or withdrawal in sealed envelope.

16.2. Amendment of individual unit prices is the only acceptable price amendment. Amendments shall not disclose either original or revised total price.

16.3. Head amendment or withdrawal as follows: "[Amendment]/[Withdrawal] of Tender for Biosolids Receiving, Transportation, Storage and Utilization, Contract". Sign and seal as required for Tender, and submit at address given for receipt of Tenders prior to time of Tender Closing.

17. Informal or un-balanced Tenders

17.1. Tenders which in the opinion of the Owner are considered to be informal or unbalanced may be rejected.

18. Tender Validity

18.1. All Tenders shall be valid for acceptance for two (2) calendar months from the date set for their delivery to the Owner.

19. Right to Accept or Reject any Tender

19.1. The Owner reserves the right to accept or reject any Tender.

20. Biosolids Guarantee

20.1. The guaranteed minimum amount of biosolids is as stated in the Form of Tender, Subsection 4 – Schedule of Quantities and Unit Prices.

- 20.2. The guaranteed minimum yearly amount of biosolids is the minimum quantity of biosolids produced in each 12 month period of the Contract for which the Contractor will receive payment over the term of the Contract whether supplied by the Owner or not. Should the quantity of biosolids supplied by the Owner in a given 12 month period commencing at the time of award of the Contract, be less than the guaranteed amount, the Contractor will be paid for the guaranteed amount in the respective 12 month period.

21. Excess Biosolids

- 21.1. At the Owner's discretion, all biosolids in excess of the guaranteed minimum yearly amount must also be utilized by the Contractor under the terms and conditions of the Contract.
- 21.2. The estimated mass of excess biosolids generated on a yearly basis is in the order of 500 tonnes.

22. Supplementary Tender Information

- 22.1. Section 00400 must be completed and submitted with Tender Form provided.
- 22.2. The information requested in Section 00400 – Supplementary Tender Information forms part of the Contract Documents. This information will be evaluated and considered in the Award of Contract.
- 22.3. The information submitted in Section 00400 will be utilized to obtain approval in principle from with Prince Edward Island Department of Communities, Land and Environment (PEIDCLE) and any other regulatory agencies in support of the intended method of operation. The Contractor may wish to confirm that the proposed method of operation will be suitable with the regulatory agencies prior to tender submission. Utilizing a method of operation for which approval in principal is not forthcoming will be means for rejection.

23. Award of Contract

- 23.1. The tenderer's attention is drawn to the fact that there are three Options in the Contract as indicated in the Form of Tender.
- 23.2. Tenderers' attention is also drawn to, in the event biosolids at the time of receiving are classified as Class "A", that with each of the three options tenderers are to include an additional amount to be added to the Unit Price in the event biosolids are classified as Class "A".
- 23.3. The Owner reserves the right to award the Contract based on any Option

1. SALUTATION:

1.1 To: Charlottetown Water and Sewer Utility
 199 Queen Street
 Charlottetown, PEI, C1A 7K2

1.2 For: Biosolids Receiving, Transportation, Storage and Utilization

1.3 From: _____

2. TENDERER DECLARES:

- 2.1. That this tender was made without collusion or fraud.
- 2.2. That the proposed work was carefully examined.
- 2.3. That the Tenderer was familiar with local conditions.
- 2.4. That all the above were taken into consideration in preparation of this Tender.

3. TENDERER AGREES:

- 3.1. To enter into a contract to supply all labour, material and equipment and to do all work necessary to undertake the Work as described and specified herein for the unit prices stated in Subsection 4 hereunder, Schedule of Quantities and Unit Prices.
- 3.2. That this Tender is valid for acceptance for two (2) calendar months from the time of Tender Closing.
- 3.3. That measurement and payment for items listed in Subsection 4 hereunder shall be in accordance with corresponding items in Section 01100 Measurement and Payment.
- 3.4. To execute in triplicate, the Agreement and forward same together with the specified performance security and insurance documents to the Owner within 14 days of written notice of Award.

- 3.5. That failure to enter into a formal contract and give specified insurance documents and security within time required will constitute grounds for forfeiture of the Tender Security.
- 3.6. That if certified cheque is forfeited, the Owner will retain difference in money between amount of Tender and amount for which the Owner legally contracts with another party to perform the Work and will refund balance, if any, to Tenderer.
- 3.7. That the Contract Documents include:
 - 3.7.1. Project Documents
 - .1 Form of Tender – Unit Price
 - .2 Supplementary Tender Information
 - .3 Form of Agreement – Unit Price
 - .4 Definitions
 - .5 General Conditions
 - .6 Measurement and Payment
 - .7 Contract Requirements
 - .8 Addenda as issued and as confirmed in subsection 2.4 of this section.
 - .9 Appendices

4. SCHEDULE OF QUANTITIES AND UNIT PRICES

Description	Unit of Measurement	Guaranteed Yearly Min.	Term of Contract	Estimated Quantity	Unit Price	Total Price
OPTION 1						
Receive, Transport and Utilize Biosolids to the Guaranteed Yearly Minimum	tonne (t)	<u>2,500</u>	<u>4 years</u>	<u>10,000</u>		
				SUB-TOTAL AMOUNT OPTION 1	\$	
				ADD GST (5%)	\$	
				TOTAL	\$	
				Addition to Unit Price for Class "A" Biosolid		
<hr/>						
OPTION 2						
Receive, Transport and Utilize Biosolids to the Guaranteed Yearly Minimum	tonne (t)	<u>2,500</u>	<u>3years</u>	<u>7,500</u>		
				SUB-TOTAL AMOUNT OPTION 1	\$	
				ADD GST (5%)	\$	
				TOTAL	\$	
				Addition to Unit Price for Class "A" Biosolid		
<hr/>						
OPTION 3						
Receive, Transport and Utilize Biosolids to the Guaranteed Yearly Minimum	tonne (t)	<u>2,500</u>	<u>2 years</u>	<u>5,000</u>		
				SUB-TOTAL AMOUNT OPTION 1	\$	
				ADD GST (5%)	\$	
				TOTAL	\$	
				Addition to Unit Price for Class "A" Biosolid		

GST Registration Number _____

5. TERM OF CONTRACT

5.1. .1 The Contract will commence at the time of signing the Agreement and continue for a period of 3, 4 or 5 years at the Owner's discretion.

6. SIGNATURES*

DATED THIS _____ DAY OF _____, 2017

Name of Firm Tendering

Signature of Signing Officer

Witness

Name and Title (Printed)

Witness

Signature of Signing Officer

Company Address

[Affix Corporate Seal]

Telephone No

Fax No.

*NOTE: Tenders submitted by or on behalf of any Corporation must be signed and sealed in the name of such Corporation by a duly authorized officer or agent.

1. Referral as to Tenderer's financial status:

Name: _____

Address: _____
_____ Telephone _____

2. Name and address of Company who has agreed to underwrite the Performance Security.

Name: _____

Address: _____
_____ Telephone _____

3. Name and address of Company who has agreed to underwrite insurance on this Contract and the type and amount of insurance.

Name: _____

Address: _____
_____ Telephone _____

Type of Insurance	Amount
_____	_____
_____	_____
_____	_____
_____	_____

4. List of Equipment to be used for this Contract:

5. Tentative Program of the Work.

The Tenderer shall attach hereto or insert a brief outline of the proposed method of operation to ensure completion and efficient execution of the Contract as set forth in the Form of Tender. This outline should include treatment plant pick up; hauling routing and procedures; storage type and location; and utilization procedures.

a) Treatment Plant: _____

b) Transportation: _____

c) Storage: _____

d) Utilization: _____

6. Sub-Contracting:

The Tenderer shall enter the name and address and function of any sub-contractor engaged for services within this Contract.

After the Tender has been accepted by the Owner, the Contractor will not be allowed to substitute other sub-contractors in place of those named in this Tender without written approval from the Owner.

Services	Sub-Contractor Name & Address	Scope of Services	Value of the Work

7. Project Personnel:

The Tenderer shall include below, the names and positions of those people who will be directly involved with managing and engaged in contract activities.

Name	Responsibility

This Agreement made on the _____ day of _____ in the year 2017.

BY AND BETWEEN

CHARLOTTETOWN WATER AND SEWER UTILITY

hereinafter the "Owner"

and

hereinafter called the "Contractor"

Witnesses that the parties agree as follows:

1. THE WORK

The Contractor shall:

- .1 Perform the Work required by the Contract Documents for

Biosolids Receiving, Transporting, Storage and Utilization

and

- .2 do and fulfill everything indicated by this Agreement, and
.3 commence the Work by the _____ day of _____, 2017 and attain Completion of the work as certified by the Owner being ____ years from the date of Agreement.

2. CONTRACT DOCUMENTS

The following is an exact list of the Contract Documents referred to in subsection 1.1 of this Agreement and as defined in subsection 2 of Section 00705 DEFINITIONS. This list is subject to subsequent amendments in accordance with the provisions of the Contract Documents.

- .1 Project Documents
.1 Form of Tender – Unit Price
.2 Supplementary Tender Information
.3 Form of Agreement – Unit Price

- .4 Definitions
- .5 General Conditions
- .6 Measurement and Payment
- .7 Contract Requirements
- .8 Addenda
- .9 Appendices

3. MEASUREMENT

- .1 Measurement for the actual quantities used to determine payments shall be in accordance with Section 01100 - Measurement and Payment.

4. CONTRACT PRICE

- .1 The Contract Price shall be the sum of the products of the actual final quantities that are incorporated in, or made necessary by the Contract, as confirmed by count and measurement, multiplied by the appropriate Unit Prices from the Form of Tender together with any adjustments that are made in accordance with the provisions of the Contract Documents plus the amount of Harmonized Sales Tax.
- .2 The Estimated Contract Price is the sum of the products of the estimated quantities multiplied by the appropriate Unit Prices in the Form of Tender plus the amount of Harmonized Sales Tax.
- .3 The Estimated Contract Price for the ____ year contract period is \$_____.

5. PAYMENT

- .1 The Owner will pay the Contractor in Canadian funds for the performance of the Contract.
- .2 Payment of invoices will be held until the receipt of the following month's invoice, at which time the previous month's invoice will be paid within 30 days therefrom. If the Contractor fails to perform any of the items of the Contract, the Owner may order the work done by others and deduct any payment for the cost of doing so from this holdback of funds.

- .3 The amount of the monthly payments shall be calculated as follows:
 - .1 The quantity for each pay item on which actual work has been performed shall be measured.
 - .2 For each Unit Price item this quantity shall be multiplied by the applicable Unit Price as provided in the Form of Tender.
 - .3 The total value of work completed for the payment period shall be calculated by adding the total of the products for all pay items.
 - .4 To the amount calculated above, the Federal Goods and Services Tax will be added.
- .4 The last day of the payment period shall be the end of the month.
- .5 If the Owner fails to make payments to the Contractor as they become due under the terms of the Contract, interest shall be payable as follows:
 - .1 The annual interest rate applicable to the contract is 2% above the Bank of Canada prime rate compounded semiannually.
 - .2 Interest shall be calculated on the overdue balance from the due date.

6. RIGHTS AND REMEDIES

- .1 The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.
- .2 No action or failure to act by the Owner, or the Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

7. RECEIPT OF AND ADDRESSES FOR NOTICES

- .1 Communications in writing between the parties shall be considered to have been received by the addressee on the date of delivery if delivered by hand to the individual, or to a member of the firm, or to an officer of the corporation for whom they are intended, or if sent by post or by facsimile, to have been delivered within five (5) working days of the date of the mailing, dispatch or of delivery to the company when addressed as follows:

1. The Owner at _____

2. The Contractor at _____

8. SUCCESSION

The aforesaid Contract Documents are to be read into and form part of the Agreement and the whole shall constitute the Contract between the parties and subject to law and the provisions of the Contract Documents shall enure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors and assigns.

9. SIGNATURES

IN WITNESS WHEREOF the parties hereto have executed this Agreement under their respective corporate seals and by the hands of their proper officers thereunto duly authorized.

SIGNED, SEALED AND DELIVERED CONTRACTOR [Seal]
in the presence of:

_____ _____
Company name

_____ _____
witness signature of signing officer

_____ _____
Name and title (printed)

_____ _____
witness signature of signing officer

_____ _____
Name and title (printed)

OWNER [Seal]

CHARLOTTETOWN WATER
AND SEWER UTILITY

_____ _____
Name

_____ _____
witness signature of signing officer

_____ _____
Name and title (printed)

_____ _____
witness signature of signing officer

_____ _____
Name and title (printed)

(Where either the Owner or Contractor calls for proof of authority to execute this document, proof of such authority in the form of a certified copy of a resolution naming the person or persons in question as authorized to sign the Agreement for and on behalf of the corporation or partnership, parties to this Agreement, should be attached.)

The following definitions shall apply to all Contract Documents:

1. The Contract

.1 The Contract is the undertaking by the parties to perform their respective duties, responsibilities and obligations as prescribed in the Contract Documents and represents the entire agreement between the parties. The Contract supercedes all prior negotiations, representations or agreements, either written or oral. The Contract may be amended only as provided in the General Conditions of the Contract.

2. Contract Documents

.1 Contract Documents consist of the executed Agreement – Unit Price between the Owner and Contractor, the General Conditions, duly completed Form of Tender – Unit Price, Supplementary Tender Information, and such other documents as are listed in Section 00530 - Form of Agreement – Unit Price, Subsection 2 including amendments thereto incorporated before the execution of the Agreement and subsequent amendments thereto made pursuant to the provisions of the Contract and agreed upon between the parties.

3. Contract Requirements

.1 Specifications for the performance of the work.

4. Owner

.1 The Owner is the Charlottetown Water and Sewer Utility and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Owner means the Charlottetown Water and Sewer Utility or its authorized agent or representative as designated to the Contractor in writing.

.2 The Owner Representative is the Utility Manager of the Charlottetown Water and Sewer Utility.

.3 CPCP is the Charlottetown Pollution Control Plant which is the treatment facility associated with the City of Charlottetown, Queens County, Prince Edward Island.

5. Contractor

.1 The Contractor is the person, firm or corporation identified as such in the Agreement and is referred to throughout the Contract as if singular in number and masculine in gender. The term Contractor means the Contractor or his authorized representative as designated to the Owner in writing.

6. Subcontractor

.1 A Subcontractor is a person, firm or corporation having a direct contract with the Contractor to perform a part or parts of the Work, or to supply products worked to a special design according to the Contract, but does not include one who merely supplies products not so worked. The term Subcontractor is referred to throughout the Contract as if singular in number and masculine in gender.

7. Project

.1 The Project means the total work as defined in Section 00050 – Description of Work.

8. The Work

.1 The Work means the supply of all products and related services required by the Contract.

9. Products and Equipment

.1 Products and equipment means materials, machinery, and fixtures required to perform the Work and complete the project.

10. Site

.1 Site means the lands and other places, on, under, in or through which the Contract is to be executed or carried out and any other lands or places required for the purposes of the Contract.

11. Law of the Contract

.1 The law of the Place of the Work governs the interpretation of the Contract.

12. Term of Contract

.1 The contract Term is the time from signing the Agreement for a period of 3, 4 or 5 years.

.2 The term of the Contract will be fixed by Owner following evaluation of Tender.

.3 Day means the calendar day.

.4 Working Day means days other than Saturdays, Sundays, and holidays which are observed in the area of the Place of the Work.

13. Total Performance of the Work

.1 Total Performance of the Work means completion of the entire Project.

14. Changes in the Work

.1 Changes in the Work means the deletion, extension, increase, or decrease of the Work or part thereof, within the description of the Work contemplated by the Contract.

15. Extra Work

.1 Extra work means any work or service, which is beyond the description of the Work contemplated by the Contract.

16. Contract Price

.1 Means the sum named in the Form of Tender- Unit Price for the execution of the Project subject to such additions thereto or deductions therefrom as may be made under the provisions contained in the Contract.

17. EQ Biosolids

.1 EQ biosolids means pasteurized sludge, which is a by-product resulting from wastewater treatment operations at CPCP.

.2 Characteristics of EQ biosolids are as described in the Atlantic Canada Standards and Guidelines Manual for the Collection, Treatment, and Disposal of Sanitary Sewage – Appendix G (attached as Appendix 1 of this document).

18. Class “A” Biosolids

.1 Class “A” biosolids means pasteurized sludge, which is a by-product resulting from wastewater treatment operations at CPCP.

.2 Characteristics of Class “A” biosolids are as described in the Atlantic Canada Standards and Guidelines Manual for the Collection, Treatment, and Disposal of Sanitary Sewage – Appendix G (attached as Appendix 1 of this document).

GC 1 DOCUMENTS

- .1 The Contract Documents shall be signed in duplicate by Owner and the Contractor.
- .2 The intent of the Contract Documents is to include the labour, products and services necessary for the performance of the Work in accordance with these documents. It is not intended, however, that the Contractor shall supply products or perform work not consistent with, covered by or properly inferable from the Contract.
- .3 Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.
- .4 References to the masculine or the singular shall be considered to include the feminine and the plural as the context requires.
- .5 The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all.
- .6 The order of precedence of the Contract Documents is as follows:
 - .1 Documents of later date shall govern.
 - .2 The General Conditions shall govern over Contract Requirements.
 - .3 The executed Agreement between Owner and the Contractor shall govern over all documents.
- .7 The Contractor will be provided without charge with as many copies of the Contract Documents or parts thereof as are reasonably necessary for the performance of the Work.

GC 2 ADDITIONAL INSTRUCTIONS

- .1 During the progress of the Work, Owner will furnish to the Contractor such additional instructions to supplement the Contract as may be necessary for the performance of the Work. Such instructions shall be consistent with the intent of the Contract.
- .2 Additional instructions will be in the form of written instructions.
- .3 Additional instructions will be issued with reasonable promptness and in accordance with a schedule agreed upon for such instructions.

GC 3 DELAYS

- .1 If the Contractor is delayed in the performance of the Work by an act or omission of Owner, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the Contract, then the Contract Time shall be extended for such reasonable time as the Owner may decide in consultation with the Contractor. The Contractor shall be reimbursed by the Owner for reasonable costs incurred by the Contractor as the result of such delay.
- .2 If the Contractor is delayed in the performance of the Work by a stop work order issued by a court or other public authority, and providing that such order was not issued as the result of an act or fault of the Contractor or anyone employed or engaged by him directly or indirectly, then the Contract Time shall be extended for such reasonable time as the Owner may decide in consultation with the Contractor. The Contractor shall be reimbursed by Owner for reasonable costs incurred by the Contractor as the result of such delay.
- .3 If the Contractor is delayed in the performance of the Work by labour disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized Contractors' Association, of which the Contractor is a member or to which the Contractor is otherwise bound), fire, unusual delay by common carriers or unavoidable casualties or, without limit to any of the foregoing, by a cause beyond the Contractor's control, then the Contract Time shall be extended for such reasonable time as Owner may decide in consultation with the Contractor, but in no case shall the extension of time be less than the time lost as the result of the event causing the delay unless such shorter extension be agreed to by the Contractor. The Contractor shall not be entitled to payment for costs incurred as the result of such delays unless such delays are as the result of actions by Owner.
- .4 No extension shall be made for delay unless written notice of claim is given to Owner not later than fourteen (14) days after the commencement of delay, providing however, that in the case of a continuing cause of delay only one notice of claim shall be necessary.
- .5 If no schedule is made under GC 2 - ADDITIONAL INSTRUCTIONS, no claim for delay shall be allowed because of failure to furnish instructions until fourteen (14) days after a demand for such instructions has been made and not then unless such claim is reasonable.
- .6 Owner will not, except by written notice to the Contractor, stop or delay the Work pending instructions or proposed changes in the Work.
- .7 Any delay of less than one day will not be reimbursed by the Owner.

GC 4 OWNER'S RIGHT TO PERFORM WORK OR STOP THE WORK OR TERMINATE CONTRACT

- .1 If the Contractor should be adjudged bankrupt, or makes a general assignment for the benefit of creditors because of his insolvency or if a receiver is appointed because of his insolvency, Owner may, without prejudice to any other right or remedy he may have, by giving the Contractor or receiver or trustee in bankruptcy written notice, terminate the Contract.
- .2 If the Contractor should neglect to prosecute the Work properly or otherwise fails to comply with the requirements of the Contract to a substantial degree and if the Owner has given a written statement that sufficient cause exists, Owner may notify the Contractor that he is in default of his contractual obligations and instruct him to correct the default in the five (5) working days immediately following the receipt of such notice.
- .3 If the correction of the default cannot be completed in the five (5) working days specified, the Contractor shall be in compliance with Owner instructions if he:
 - .1 commences the correction of the default within the specified time, and
 - .2 provides Owner with an acceptable schedule for such correction, and
 - .3 completes the correction in accordance with such schedule.
- .4 If the Contractor fails to correct the default in the time specified or subsequently agreed upon, Owner, without prejudice to any other right or remedy he may have, may:
 - .1 terminate the Contractor's right to continue with the Work in whole or in part or terminate the contract.
- .5 If Owner terminates the Contractor's right to continue with the Work under the conditions set out in this General Condition, he shall:
 - .1 be entitled to take possession of the work and utilize the equipment, the whole subject to the rights of third parties, and finish the Work by whatever method he may consider expedient but without undue delay or expense, and
 - .2 withhold further payments to the Contractor until the Work is finished, and
 - .3 upon Total Performance of the Work, charge the Contractor the amount by which the full cost of finishing the Work exceeds the unpaid balance of the Contract Price; however, if such cost of finishing the Work is less than the unpaid balance of the Contract Price, he shall pay the Contractor the difference.
- .6 If performance security has been provided by the Contractor, the provisions of this General Condition shall be exercised in accordance with the conditions of such performance security.

- .7 The Contractor's obligation under the Contract as to quality, correction and warranty of the work performed by him up to the time of termination shall continue in force after such termination.

GC 5 CONTRACTOR'S RIGHT TO STOP THE WORK OR TERMINATE THE CONTRACT

- .1 If Owner should be adjudged bankrupt or makes a general assignment for the benefit of creditors because of his insolvency or if a receiver is appointed because of his insolvency, the Contractor may, without prejudice to any other right or remedy he may have, by giving Owner or receiver or trustee in bankruptcy written notice, terminate the Contract.
- .2 If the Work should be stopped or otherwise delayed for a period of thirty (30) days or more under an order of a court or other public authority and providing that such order was not issued as the result of an act or fault of the Contractor or of anyone directly or indirectly employed or engaged by him, the Contractor may, without prejudice to any other right or remedy he may have, by giving Owner written notice, terminate the Contract.
- .3 If the Contractor terminates the Contract under the conditions set out above, he shall be entitled to be paid for all work performed in accordance with the Schedule of Quantities and Unit Prices to the date of the termination of the Contract.

GC 6 DISPUTES

- .1 Differences between the parties to the Contract as to the interpretation, application or administration of this Contract, or any failure to agree where agreement between the parties is called for, herein collectively called disputes, shall be settled in accordance with the requirements of this General Condition.
- .2 The claimant shall give written notice of such dispute to the other party no later than thirty (30) days after the receipt of notice. Such notice shall set forth the particulars of the matters in dispute, the probable extent and value of the damage and the relevant provisions of the Contract. The other party shall reply to such notice no later than fourteen (14) days after he receives or is considered to have received it, setting out in such reply his grounds and other relevant provisions of the Contract.
- .3 It is agreed that no act by either party shall be construed as a renunciation or waiver of any of his rights or recourses, provided he has given the notices in accordance with subsection 6.2.
- .4 All disputes shall be submitted to arbitration in accordance with the provisions of the Prince Edward Island, except that two arbitrators and one umpire shall be used. Each party shall pick an arbitrator and they shall both agree on an umpire.
- .5 In recognition of the obligation by the Contractor to perform the disputed work, it is agreed that settlement of dispute proceedings may be commenced immediately following the dispute in accordance with the foregoing settlement of dispute procedures.

GC 7 ASSIGNMENT

- .1 Neither party to the Contract shall assign the Contract or a portion thereof without the written consent of the other, which consent shall not be unreasonably withheld; provided however, either party, without such consent, may assign or sell the same in connection with the transfer or sale of substantially its entire business to which this contract pertains or in the event of its merger or consolidation with another company. Any permitted assignee shall assume all obligations of its assignor under this contract. No assignment shall relieve any party of responsibility for the performance of any accrued obligation that such party then has hereunder.

GC 8 SUBCONTRACTORS

- .1 The Contractor agrees to preserve and protect the rights of the parties under the Contract with respect to work to be performed under subcontract and to:
 - .1 enter into contracts or written agreements with his Subcontractors to require them to perform their work in accordance with and subject to the terms and conditions of the Contract, and
 - .2 be as fully responsible to Owner for acts and omissions of his Subcontractors and of persons directly or indirectly employed by him.

The Contractor therefore agrees that he will incorporate the terms and conditions of the Contract into all sub-contract agreements he enters into.

- .2 The Contractor agrees to employ those Subcontractors proposed by him in writing and accepted by Owner at the signing of the Contract.
- .3 Owner may, for reasonable cause, object to the use of a proposed Subcontractor and require the Contractor to employ another Subcontractor.
- .4 In the event that Owner requires a change from a proposed Subcontractor the Contract Price shall be adjusted by the difference in cost and mark-up occasioned by such required change.
- .5 The Contractor shall not be required to employ as a Subcontractor a person or firm to whom he may reasonably object.
- .6 Nothing contained in the Contract shall create a contractual relationship between a Subcontractor and Owner.

GC 9 CHANGES IN THE WORK AND EXTRA WORK

- .1 The Owner, without invalidating the Agreement, may make changes by altering, adding to, or deducting from the Work. All such work shall be executed in accordance with the Contract Documents. No change shall be made unless in pursuance of a written order from the Owner. No claim for an addition to or deduction from the Contract Price shall be valid unless so ordered and at the same time valued or agreed to be valued as provided in Article 10.

GC 10 VALUATION AND CERTIFICATION OF CHANGES IN THE WORK

- .1 The value of any change shall be determined in one or more of the following ways:
 - .1 By estimate and acceptance in a lump sum.
 - .2 By unit price.
 - .3 By net Cost to the Contractor plus 10% of the net cost for overhead plus 10% of the net cost for profit; or by cost and a fixed fee.
 - .4 If none of the above methods can be agreed upon, such value shall be determined in the manner set out in Clause GC6.

GC 11 APPLICATIONS FOR PAYMENT

- .1 Applications for payment on account may be made monthly as the Work progresses.
- .2 Applications for payment shall be dated the last day of the agreed monthly payment period and the amount claimed shall be for the value of work performed at that date.
- .3 No payment made to the Contractor by the Owner shall be construed as an acceptance of any work not in accordance with this Contract.

GC 12 TAXES AND DUTIES

- .1 Unless otherwise stated the Contractor shall pay all applicable taxes with respect to the Contract.
- .2 Any increase or decrease in costs to the Contractor due to changes in such taxes after the date of tender closing shall increase or decrease the Contract Price accordingly.

GC 13 LAWS, NOTICES, PERMITS AND FEES

- .1 The laws of the Place of the Work shall govern the Work.
- .2 The Contractor shall obtain the permits, licenses and certificates and pay the fees required for the performance of the Work which are in force at the date of tender closing.
- .3 The Contractor shall give the required notices and comply with the laws, ordinances, rules, regulations, codes and orders of the authorities having jurisdiction, which are or become in force during the performance of the Work, and which relate to the Work, to the preservation of the public health, and to construction safety.
- .4 The Contractor shall not be responsible for verifying that the Contract Documents are in compliance with the applicable laws, ordinances, rules, regulations and codes relating to the Work. If the Contract Documents are at a variance therewith, or changes which require modification to the Contract are made to the laws, ordinances, rules, regulations or codes by the authorities having jurisdiction subsequent to the date of the tender closing, the Contractor shall notify Owner in

writing requesting direction immediately such variance or change becomes known to him. Owner will make the changes required to the Contract Document and the Contract Price and Contract Time will be adjusted in accordance with

- .5 If the Contractor fails to notify Owner in writing and obtain direction as required in subsection 13.4 and performs work knowing it to be contrary to any laws, ordinances, rules, regulations, codes and orders of the authorities having jurisdiction, the Contractor shall be responsible for and shall correct the violations thereof and shall bear the costs, expenses and damages attributable to his failure to comply with the provisions of such laws, ordinances, rules, regulations, codes and orders.

GC 14 PATENT FEES

- .1 The Contractor shall pay the royalties and patent license fees required for the performance of the Contract. He shall hold Owner harmless from and against claims, demands, losses, costs, damages, actions, suits or proceedings arising out of the Contractor's performance of the Contract which are attributable to an infringement or an alleged infringement of a patent or invention by the Contractor or anyone for whose acts he may be liable.
- .2 Owner shall hold the Contractor harmless against claims, demands, losses, costs, damages, actions, suits or proceedings arising out of the contractor's performance of the Contract which are attributable to an infringement or an alleged infringement of a patent or invention in executing anything for the purpose of the Contract, the model, plan or design which was supplied to the Contractor as part of the Contract.

GC 15 WORKERS' COMPENSATION INSURANCE AND PRINCE EDWARD ISLAND SALES TAX

- .1 Prior to commencing the Work and prior to receiving payment on Total Performance of the Work, the Contractor shall provide evidence of compliance with the requirements of the Province of Prince Edward Island with respect to Workers' Compensation Insurance.
- .2 The Contractor is responsible for paying all applicable Prince Edward Island Sales Tax.
- .3 At any time during the term of the Contract, when requested by Owner, the Contractor shall provide such evidence of compliance by himself and his Subcontractors.

GC 16 INDEMNIFICATION

- .1 The Contractor shall defend, indemnify and save harmless the Owner, its officers, agents, servants and employees against and from all suits, losses, demands, payments, actions, recoveries, judgments and costs of every kind and description and from all damages to which the Owner or any of its officers, agents, servants and employees may be subjected by reason of injury to the person or property of others resulting from the performance of the Agreement, or through any improper

or defective machinery, equipment, implements, or appliances used by the Contractor on the Agreement, or through any act or omission on the part of the Contractor or its agents, employees or servants, and the Contractor shall defend, indemnify and save harmless the Owner, its officers, or character whatsoever which may be brought or instituted by any sub-contractor, material supplier or labourer who has performed work or furnished materials in or about the work or by, or on account of, any claims or amount recovered for an infringement of patent, trademark or copyright.

GC 17 INSURANCE

- .1 Without restricting the generality of GC 16, INDEMNIFICATION, the Contractor shall provide, maintain and pay for the insurance coverages listed in this General Condition unless otherwise stipulated:

.1 General Liability Insurance:

General Liability Insurance shall be in the joint names of the Contractor, and Owner with limits of not less than two million dollars (\$2,000,000) inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof, with property damage deductible of five hundred dollars (\$500). The form of this insurance shall be the latest edition of the CCDC Form 101, and shall be maintained continuously from commencement of the Work until the date of Total Performance of the Work as set out in the Certificate of Total Performance of the Work.

.2 Automobile Liability Insurance:

Automobile liability insurance in respect of licensed vehicles shall have limits of not less than two million dollars (\$2,000,000) inclusive per occurrence for bodily injury, death, and damage to property, in the following forms endorsed to provide the Owner with not less than fifteen (15) days written notice in advance of any cancellation, change or amendment restricting coverage:

1. Standard non-owner automobile policy including standard contractual liability endorsement.
2. Standard owner's form Automobile Policy providing third party liability and accident benefits insurance, and covering licensed vehicles owned or operated by or on behalf of the Contractor.

.3 Contractors' Equipment Insurance:

All risks contractors' equipment insurance covering construction machinery and equipment used by the Contractor for the performance of the Work, including boiler insurance on temporary boilers and pressure vessels, shall be in a form acceptable to Owner and shall not allow subrogation claims by the Insurer against Owner. The policies shall be endorsed to provide Owner

with not less than fifteen (15) days written notice in advance of a cancellation, change or amendment restricting coverage. Subject to satisfactory proof of financial capability by the Contractor for self-insurance of his equipment, Owner agrees to waive the equipment insurance requirement.

- .2 Unless specified otherwise, the duration of each insurance policy shall be from the date of commencement of the Work until the date of Total Performance of the Work as set out in the Certificate of Total Performance of the Work.
- .3 The Contractor shall provide Owner with proof of insurance prior to commencement of the Work and shall promptly provide Owner with a certified true copy of each insurance policy exclusive of information pertaining to premium or premium bases used by the Insurer to determine the cost of the insurance.
- .4 If the Contractor fails to provide or maintain insurance as required in this General Condition or elsewhere in the Contract Documents, then Owner shall have the right to provide and maintain such insurance and give evidence thereof to the Contractor. The cost thereof shall be payable by the Contractor to Owner on demand or Owner may deduct the costs thereof from monies which are due or may become due to the Contractor.
- .5 The Contractor will be covered under the Owner's policy, if the Owner's operations caused damage or injury to the Contractor's equipment or personnel.

GC 18 PROTECTION OF WORK AND PROPERTY

- .1 The Contractor shall protect the Work and the Owner property and property adjacent to the Places of the Work from damage, and shall be responsible for damage which may arise as the result of his operations under the Contract.
- .2 Should the Contractor in the performance of this Contract damage the Work, Owner property or property adjacent to the Place of the Work, the Contractor shall be responsible for the making good of such damage at his expense.

GC 19 DAMAGES AND MUTUAL RESPONSIBILITY

- .1 If either party to this Contract should suffer damage in any manner because of any wrongful act or neglect of the other party or of anyone for whom he is responsible by law, then he shall be reimbursed by the other party for such damage. The party reimbursing the other party shall be subrogated to the rights of the other party in respect of such wrongful act or neglect, if it be that of a third party.
- .2 Claims under this General Condition shall be made in writing to the party liable within reasonable time after the first observance of such damage and may be adjusted by agreement or in the manner set out in GC 6 - DISPUTES.

GC 20 PERFORMANCE SECURITY

- .1 The Contractor shall provide to Owner an irrevocable letter of credit in the amount of ten thousand dollars (\$10,000). The letter of credit will be issued for a 12 month period and will be renewed for the same value at the end of each 12 month period until the terms of the Contract are fulfilled. Failure to renew the letter of credit will constitute breach of Contract.
- .2 The letter of credit shall be issued by a chartered bank authorized to transact business in the province of Prince Edward Island and shall be maintained in good standing until the fulfillment of the Contract.

GC 21 CONTRACTOR'S RESPONSIBILITY AND CONTROL OF WORK

- .1 The Contractor shall have complete control of the Work and shall effectively direct and supervise the Work so as to ensure conformance with the Contract. He shall be solely responsible for means, methods, techniques, sequences and procedures and for coordinating the Work under the Contract.
- .2 The Contractor shall be solely responsible for construction safety at the Place of the Work and for compliance with the rules, regulations and practices required by the Prince Edward Island Occupational Health and Safety Act and other applicable legislation. See the City of Charlottetown's website under Tenders for a complete list of documentation required by contractors.
- .3 The Contractor shall review all aspects of the Contract and shall promptly report to Owner any error, inconsistency or omission he may discover. Such review by the Contractor shall be to the best of his knowledge, information and belief and in making such review, the Contractor does not assume any responsibility to Owner for the accuracy of the review. The Contractor shall not be liable for damage or costs resulting from such errors, inconsistencies or omissions in the Contract which he did not discover. If the Contractor does discover any error, inconsistency or omission in the Contract, he shall not proceed with the Work affected until he has received corrected or missing information from Owner.

GC 22 CONFLICT OF INTEREST

- .1 Any potential conflict of interest must be disclosed to the City in writing. Any conflict of interest identified will be considered and evaluated by the City. The City has the sole discretion to take the steps they deem necessary to resolve the conflict. If, during the term of the Contract, a conflict or risk of conflict of interest arises, the Contractor will notify the City immediately in writing of that conflict or risk and take any steps that the City reasonably requires to resolve the conflict or deal with the risk.

GC 23 GRATUITIES

- .1 The City of Charlottetown may, by written notice to a proponent, cancel any contract if it is found by the City of Charlottetown that gratuities, in the form of entertainment, gifts, or otherwise, were offered or given by the proponent, or the

agent or representative of the proponent, to any employee or agent of the project with a view toward securing favorable treatment with respect to the awarding or amending, or making any determinations with respect to performing of such contract.

GC 23 CONFIDENTIALITY

- .1 The successful proponent agrees not to release or, in any way, cause to release any confidential information of the City of Charlottetown unless an appropriate official of the City has specifically approved them to do so in writing.

PART 1 - GENERAL

1.1 Measurement

- .1 Unit Prices are full compensation for the work necessary to complete each item in the Contract and in combination for all work necessary to complete the work as a whole.
- .2 Measurement will be jointly made, and agreed to at the time by the Owner and the Contractor.
- .3 Quantities will be determined from weigh slips certified by Owner from the weigh scale at the Energy From Waste Plant site, Riverside Drive, Charlottetown. A fee for weighing will be charged at the Energy From Waste Plant. The Contractor is responsible to make all arrangements with the scale owner and to pay all fees related to its use.

PART 2 – ITEMS

2.1 Guaranteed Amount

- .1 The unit of measurement will be the metric tonne (t). The price shall include supply, pick-up, and return of roll-on bin as well as transportation, temporary storage and utilization of biosolids contained in the bin. The price will also include all the costs of biosolids and/or soils monitoring, testing and sampling required for transportation, storage and utilization of the biosolids; as well as the acquisition of all permits and approvals required by the various regulatory authorities for the utilization of biosolids in the method(s) described in Section 00400. The guaranteed yearly amount is the minimum quantity of biosolids for which the Contractor will receive payment over the term of the Contract, whether supplied by the Owner or not. Should the quantity of biosolids supplied by the Owner in a given 12-month period, commencing at the time of award of the Contract, be less than the guaranteed yearly amount, the Contractor will be paid for the guaranteed yearly amount in the respective 12-month period.

1. General

- .1 The CPCP wastewater treatment facility is an activated sludge treatment plant with a nominal capacity of 26,120 m³/d. Unit operations within the plant include grit extraction, mechanical screening, aeration, secondary clarification, and UV disinfection. Excess sludge from the primary clarifiers, secondary clarifiers, and external sources such as septage haulers is discharged to dual gravity thickeners prior to being processed in the Class A biosolids treatment process. The Class A treatment process includes pre-pasteurization and anaerobic digestion. Treated biosolids are mechanically dewatered using solid bowl centrifuges. Biosolids discharged from the process are expected to meet the Class A Exceptional Quality (EQ) designation as identified in the Atlantic Canada Standards and Guidelines Manual for the Collection, Treatment, and Disposal of Sanitary Sewage, Appendix G (attached as Appendix 1 to the contract documents).
- .2 Class A EQ biosolids contain inorganic nutrients and organic matter which are beneficial as a fertilizer and soil amendment. The dewatered Class A EQ biosolids are discharged from the dewatering centrifuges, through a screw conveyor, directly into a bay designed to hold a roll-on bin.
- .3 The Owner is interested in securing a contract with a private proponent for the transportation, storage and utilization of biosolids. The selected contractor will be required to provide an appropriately sized roll-on bin into which the treated biosolids will be placed. The biosolids treatment process must be able to continue uninterrupted while bins are being removed without any biosolids being discharged onto the floor where the bin would normally reside. It is expected that bin removal and replacement will be performed either before or after the day's biosolids processing is initiated.
- .4 This section specifies procedural and temporary requirements for the work

2. Permits and Approvals

- .1 The Contractor shall operate the site in accordance with the provisions of the:
 - .1 Environmental Protection Act.
 - .2 Regulations pursuant to the above Act.
 - .3 Atlantic Canada Standards and Guidelines Manual for the Collection, Treatment, and Disposal of Sanitary Sewage, Appendix G.
 - .4 Any other Provincial or Federal Act and Regulations.
 - .5 Local Municipal Environmental By-Laws and zoning restrictions.
- .2 The Contractor shall be responsible for obtaining all permits and approvals necessary to execute the work over the term of the agreement and for paying all costs for said permits and approvals.

3. Biosolids Production and Characteristics

- .1 Annual biosolids production from the CPCP plant is expected to range from 2,500 to 3,300 tonnes per year on a wet weight basis. The dry solids concentration in the biosolids is expected to be in the range of 23% to 27% during that period with an average solids content of about 25%.
- .2 Metal concentrations, inorganic nutrient levels and pH have been monitored in the biosolids removed from the plant over a number of years. Characteristics of the current and projected biosolids are summarized in Appendix 2.
- .3 The Owner is responsible to provide biosolids that meet the requirements of the utilization method(s) described in Section 00400. Biosolids sampling requirements as defined in the CPCP Biosolids Management Plan will be provided to the Contractor on a monthly basis. If at any time biosolids do not meet the utilization requirements as defined in the Atlantic Canada Standards and Guidelines Manual for the Collection, Treatment, and Disposal of Sanitary Sewage, Appendix G – Sludge Utilization on Land, the Owner will contact the Contractor and take responsibility for utilization of the material

4. Scheduling and Coordination

- .1 As a minimum, Contractor shall remove dewatered biosolids from the CPCP site within twenty-four (24) hours of their being generated.
- .2 The CPCP is staffed from 8:00 a.m. to 4:00 p.m., Monday through Friday. Contractor to schedule and perform work on the treatment plant site within these hours or other times mutually agreed with the Owner.
- .3 Submit within 7 days of Date of Award detailed schedule for performance of the Work by the Completion Date. Revise, update and submit schedule as directed.
- .4 Schedule and perform work within hours and days established by other authorities having jurisdiction such as the Prince Edward Island Department of Transportation and Infrastructure Renewal.
- .5 Refrain from work on holidays, Saturdays and Sundays. Approval is required to work outside of regular hours or days of work.
- .6 Provide submittals and schedule delivery of products as required to meet Contract schedule.

5. Loading Operations

Roll on bins will be loaded during regular working hours by CPCP staff. The bins provided are to be of sufficient capacity to handle at least one day of biosolid production, approximately 23 m³. The Contractor is responsible for the positioning of the bins and hauling equipment at an approved location on the treatment plant site and for any damage to CPCP property or equipment as a

- .1 result of his operations while on the plant site.
- .2 The biosolids shall become the property of the Contractor when the bin is loaded onto the hauling equipment at the treatment plant site.
- .3 The Owner shall provide water and high pressure cleaning equipment to assure that hauling equipment can be washed down before entering the transportation route. Spillage resulting from the loading and hauling operation at the CPCP site shall be removed and the area left in a clean condition at all times by the Contractor.

6. Hauling Equipment

- .1 All trucks used for hauling and transportation of biosolids shall be approved by Owner. Trucks shall be kept clean and in good mechanical condition. The conveyance equipment shall be watertight and shall be covered with tarpaulins or equivalent barriers during transportation.
- .2 All trucks used for hauling and transporting biosolids must have a valid safety inspection issued by the Prince Edward Island Department of Transportation and Infrastructure Renewal.
- .3 Owner shall have the right to stop transportation vehicles at its discretion at the treatment plant site when leaving and returning to the site.

7. Traffic Control & Direction of Haul

- .1 Provide traffic control in accordance with Traffic Control Manual issued by Prince Edward Island Department of Transportation and Infrastructure Renewal.
- .2 In urban areas, consult with local authorities having jurisdiction for possible additional or special requirements.
- .3 Meet with local authorities having jurisdiction prior to start of hauling operations to determine allowable routing. Submit schedule of hauling with estimated load volume and indicating allowable routing.
- .4 Comply with all weight limitations imposed by the Prince Edward Island Department of Transportation and Infrastructure Renewal on designated transportation routes during restricted periods.
- .5 Provide traffic control personnel, signals, lights and other traffic control methods where required.
- .6 Provide and maintain signs, delineators, barricades, barriers, and miscellaneous warning devices to indicate operational activities or other temporary and unusual conditions when required.

.7 Weight Scales and Weighing Procedures

- .1 The Contractor shall be responsible for obtaining the weight of each load of biosolids transported from the CPCP treatment plant site. The truck weigh scales at the Energy From Waste site can be used for this purpose. The Contractor will provide weight slips, signed and issued by the Scale Operator, in support of each

monthly progress claim. A fee will be charged by the Scale Operator for the service for which the Contractor will be responsible.

- .2 Weighing procedures shall follow the procedures specified in the latest Prince Edward Island Department of Transportation and Infrastructure Renewal Standard Specifications.

.8 Storage Facilities

- .1 The Contractor shall demonstrate access to acceptable storage facilities for the purpose of storing the biosolids during periods when the material cannot be directly utilized. The storage facilities will be sized to hold accumulated biosolids for the maximum period of time anticipated between successive utilization operations.
- .2 The cost of constructing and maintaining the storage facilities is the responsibility of the Contractor.
- .3 Sludge storage facilities shall be constructed and operated in accordance with Atlantic Canada Standards and Guidelines Manual for the Collection, Treatment, and Disposal of Sanitary Sewage, Appendix G – Sludge Utilization on Land. For the purpose of this Contract, EQ biosolids storage is not exempt from these requirements. The requirement for covering the stored biosolids may be waived provided acceptable leachate and surface water control methods are demonstrated.

.9 Biosolids Utilization

- .1 The Contractor shall be responsible for all costs to fully utilize the biosolids.
- .2 Biosolids utilization shall be completed in accordance with the Atlantic Canada Standards and Guidelines for the Collection, Treatment, and Disposal of Sanitary Sewage – Appendix G.
- .3 The Contractor shall provide to the Owner and Prince Edward Island Department of Communities, Land and Environment a written agreement from all property owners upon whose land it is proposed to directly utilize biosolids.
- .4 Biosolids utilization sites to be selected in accordance with the Atlantic Canada Standards and Guidelines for the Collection, Treatment, and Disposal of Sanitary Sewage – Appendix G.
- .5 Biosolids application rate and methodology to be in accordance with the Atlantic Canada Standards and Guidelines for the Collection, Treatment, and Disposal of Sanitary Sewage – Appendix G.
- .6 Biosolids and application site monitoring, reporting and record keeping to be in accordance with the Atlantic Canada Standards and Guidelines for the Collection, Treatment, and Disposal of Sanitary Sewage – Appendix G.
- .7 All monitoring results shall be submitted by the Contractor to the Owner.
- .8 All monitoring results shall be submitted by the Contractor to the Owner no later

than the fifteenth day of the month following their collection.

- .9 All sampling techniques and sample analysis procedures shall be as described in the latest edition of Standard Methods for the Examination of Water and Wastewater, unless agreed upon in writing by the Owner and Prince Edward Island Department of Environment, Labour and Justice. The Owner and/or Prince Edward Island Department of Environment, Labour and Justice may from time to time submit split samples to an independent qualified laboratory to confirm the accuracy of sample results.
- .10 The Contractor shall ensure the development and implementation of an emergency response and contingency plan at the site. The plan shall include:
 - .1 Procedures to follow if equipment becomes inoperable.
 - .2 Procedures to follow to deal with any spill or release of a volume of biosolids that could cause an adverse effect.
 - .3 An emergency contact list of people and agencies to be contacted in the event of the release of a volume of biosolids that could cause an adverse effect.
- .11 At no time shall biosolids from storage areas be disposed of or utilized in any manner other than approved by Prince Edward Island Department of Environment, Labour and Justice unless prior approval has been received.

APPENDIX 1

The following guidelines were formulated to provide the minimum criteria of for municipal sludge utilization on land, where applicable. Sewage sludge can be useful to crop and soil by providing nutrients and organic matter. Proponents considering land application should discuss their plans in advance with provincial regulatory officials to determine whether their sludge quality is appropriate for land application. Please note that New Brunswick requires additional treatment for the reduction of pathogens in order for sludge to be acceptable for use on land. Therefore, this Appendix is not applicable in New Brunswick.

G.1 BIOSOLIDS QUALITY CRITERIA¹

G.1.1 General

Biosolids quality is determined by the pathogen and metal content and is dependent on the wastewater characteristics and the type of treatment. Biosolids acceptable for land application and/or storage fall in to one of three categories, depending on the metal and pathogen content: Exceptional Quality (EQ), Class A, or Class B. There are no restrictions for land application of EQ Biosolids or biosolids regulated under the Canadian Fertilizer Act, and no Approval is required. Land application of Class A or Class B biosolids requires an Approval, and restrictions pertaining to the use of these products will apply.

G.1.2 Metals

All biosolids contain variable amounts of metals, some of which are essential plant nutrients (micronutrients). When applied to soils in excessive amounts, metals may accumulate in soils. Soil loadings of metals must therefore be controlled in biosolids application. The metal concentration in biosolids intended for land application (EQ or Class A/Class B) must not exceed the Maximum Acceptable Metal Concentrations in Table G-1. Some jurisdictions may have more stringent guidelines for disposal of biosolids^b.

Table G-1 Maximum Acceptable Metal Concentrations in Biosolids (mg/kg of dry weight) ^a		
Metal	Exceptional Quality	Class A/Class B
Arsenic	41	75
Cadmium	39	85
Chromium	1200	
Copper	1500	4300
Mercury	17	57
Molybdenum		75
Nickel	420	420
Lead	300	840
Selenium	100	100
Zinc	2800	7500

a - USEPA, Biosolids Applied to Land: Advancing Standards and Practices, 2002.

b - Nova Scotia Environment and Labour, “Guidelines For Land Application and Storage of Biosolids in Nova Scotia”, May 2004

G.1.3 Sludge Stabilization

Only stabilized sewage sludge (biosolids) should be applied to land. Biosolids are defined as

processed sludge in which the organic and bacterial contents of raw sludge are reduced to levels deemed necessary by the regulatory agency to reduce nuisance odours, pathogen concentration, vector attraction, and public health hazards.

Biosolids may be defined as stabilized if one of the following conditions can be met:

- a. volatile solids in the sludge have been reduced to at least 50%* of total solids;
 * Assume 80% volatile solids initially. Volatile solids in sewage sludge are reduced by at least 38% during treatment. Therefore:
 $(80\% - (80\% \times 38\%)) = 50\%$
- b. the specific oxygen uptake rate (SOUR) of the sludge is less than 1.5 mg O₂/h.g of total sludge on a dry weight basis corrected to 20 °C. This test is only applicable to liquid aerobic biosolids withdrawn from an aerobic process.
- c. Sludge meets the high pH stabilization criteria described in section 11.7.3.
- d. Any process which produces sludge equivalent in quality to the above in terms of public health factors and odour potential may be accepted. Additional treatment would be required to further reduce pathogens when the sludge is to be spread on dairy pastures and other crops which are in the human food chain. Biosolids generators are responsible for the stabilization and verification of any biosolids intended for land application. Proponents must provide sufficient information acceptable to demonstrate that the biosolids have been effectively stabilized to meet pathogen reduction requirements.

G.1.4 Pathogens

Pathogens are disease causing organisms, such as bacteria, viruses, and parasites that exist in all biosolids. The pathogen reduction requirements for each of the three categories of biosolids are listed in Table G-2.

Table G-2 Pathogen Reduction Requirements		
Exceptional Quality	Class A	Class B
Fecal Coliform: <1000 MPN*/g total solids (dry weight) OR Salmonella: <3 MPN*/4g Total solids (dry weight)	Fecal Coliform: <1000 MPN*/g total solids (dry weight) OR Salmonella: <3 MPN*/4g Total solids (dry weight)	Fecal Coliform: <2,000,000 MPN* per gram of total solids (dry weight)

Note: *MPN (most probable number)

G.1.5 Persistent Organic Chemicals

Sufficient information is not available to establish criteria of sludge spreading in regard to persistent organic chemicals, such as pesticides and polychlorinated biphenyls (PCB). However, if there is a known source in the sewer system service area which discharges or discharged in the past such chemicals, the sludge should be analyzed for such chemicals and the regulatory agency should be consulted for recommendations concerning sludge spreading.

G.2 SITE SELECTION

G.2.1 General

By proper selection of the biosolid application site, the nuisance potential and public health hazard should be minimized. The following items should be considered and the regulatory agency should be consulted for specific limits:

- a. land ownership information;
- b. groundwater table and bedrock location;
- c. location of dwellings, roads and public access;
- d. location of wells, springs, creeks, streams and flood plains;
- e. slope of land surface;
- f. soil characteristics;
- g. climatological information;
- h. land use plan; and
- i. road weight restrictions.

G.2.2 Site Location

The following restrictions should apply to the location of a proposed biosolid to land application site:

- a. The site should be remote from surface water courses. The minimum distance between the site and the high water mark of the surface water course should be determined by the land slope as follows:

TABLE G-3 - MINIMUM DISTANCE TO WATERCOURSE		
MAXIMUM SUSTAINED SLOPE	FOR BIOSOLID APPLICATION DURING MAY TO NOVEMBER	FOR BIOSOLID APPLICATION DURING DECEMBER TO APRIL
0 to 3%	100 m	360 m
3 to 6%	125 m	No Biosolid to be Applied
6 to 8%	180 m	No Biosolid to be Applied
Greater than 8%	No Biosolid to be Applied unless special conditions exist	No Biosolid to be Applied

- b. The site should be located a minimum distance from certain physical features, as specified in the following table:

For groundwater separation distances See section G.2.3.

- c. No processed organic waste should be applied to the site during any period in which conditions are such that surface runoff is likely to occur taking into account land slope, soil permeability and the climatic conditions of the area;

TABLE G-4 - MINIMUM DISTANCE TO PHYSICAL FEATURES	
TYPE OF FEATURE	MINIMUM SETBACK DISTANCE
Public Wells	150 m **
Private Wells	90 m **
Property Line	10 m *
Bedrock Outcrops	10 m *
Dwellings	90 m **
Institutional Buildings (i.e. schools and hospitals)	200 m **
Commercial Buildings	90 m
Uninhabited Buildings	30 m
Public Areas (i.e. parks and playgrounds)	90 m
Perennial Water Bodies & Watercourses	90 m
Intermittent Water Bodies & Watercourses	60 m
Swales and Man-Made Drainage Ditches	15 m
Primary & Secondary Roads	30 m *
Unimproved Dirt Roads	10 m *

NOTE * 100 m setback required for spray irrigation areas

** 300 m setback required for storage lagoons and spray irrigation areas

- e. Berms and dykes of low permeability should be constructed on the site where necessary to isolate the site and effectively prevent the egress of contaminants.
- f. No sewage sludge handling facility should be located on a flood plain, an area which is inundated by a flood that has a 1% or greater change in recurring in any year, or a flood of a magnitude equaled or exceeded once in 100 years on the average. Additional controls are required when biosolids are applied in flood risk areas. A flood risk area is a flat or gently sloping area beside a watercourse which may be subjected to flooding. The land application of both Class A and Class B biosolids in a flood risk area, which may experience flooding once in 20 years, must not occur before the risk of flood has passed, any flood waters have returned to their normal level, and the soil is adequately drained to support application equipment. Class A and Class B biosolids applied to land in flood risk areas must be directly injected into the soil or surface applied followed by incorporation (within 24 hours of spreading). The storage of Class A or Class B biosolids is not permitted in a flood risk area which may experience flooding once in 100 years.¹
- g. No sewage sludge handling facility should be installed within the area of any municipal watershed unless permission is granted by the regulatory agency having jurisdiction.

- h. A sewage sludge handling facility should not be located over land areas with a seasonal high water table at less than 450 mm below the ground surface, or with bedrock at less than 900 mm.

G.2.3 Land Characteristics

The following restrictions should apply to the land characteristics of a proposed sludge to land application site:

- a. The land slope and soil permeability will determine the time of year that sludge may be applied.

TABLE G-5- SLUDGE APPLICATION PERIODS		
MAXIMUM SUSTAINED	SOIL PERMEABILITY	ALLOWABLE DURATION OF APPLICATION
0 to 3%	any	12 mo./yr.
3 to 6%	rapid to moderately rapid ($>5 \times 10^{-5}$ to 8×10^{-6} m/s)	7 mo./yr. (May to November)
	(2×10^{-6} to 5×10^{-7} m/s) moderate to slow	6 mo./yr. (May to October)
6 to 8%	($>5 \times 10^{-5}$ to 8×10^{-6} m/s) rapid to moderately rapid	7 mo./yr. (May to November)
	(2×10^{-6} to 5×10^{-7} m/s) moderate to slow	6 mo./yr. (May to October)
Greater than 8%	any	No sludge applications unless warranted by special

- b. The ground water table during sludge application should be not less than 1 m from the surface for soils with moderate to slow permeability. For soils with rapid to moderately rapid permeability the groundwater table should be not less than 1.5 m from the surface; and
- c. Where sludge application is carried out by tank truck, untilled land should be given preference to tilled land. Where tilled land is used the sludge hauling contractor should request instructions from the landowner, with regards to minimizing the possibility of damage to the tile system.

G.2.4 Minimum pH

No biosolid should be applied on land if the soil pH is less than 6.0 at the time the biosolid is applied. Soils intended for biosolids application must have a pH between 6.0 and 8.0 to minimize metal leaching. Alkaline stabilized sludges may be applied to soils of lower pH, when they raise the soil pH to at least 6.0. The soil pH should be maintained between 6.0 and 8.0 for at least two years following the end of biosolids application.

G.2.5 Land Use Restrictions and Waiting Periods¹

Sludge should not be applied to land which is used for growing food crops to be eaten raw, such as leafed vegetables and root crops.

Land on which Class B biosolids have been applied must adhere to the waiting periods identified in Table G-6. Class A and Class B biosolids are not permitted for use on residential lawns or gardens.

TABLE G-6: MINIMUM WAITING PERIODS	
LAND USE	WAITING PERIOD
Pasture	Not in the same calendar year
Forage	2 months before harvest
Livestock Feed	2 months before harvest
Food crops (edible parts below soil surface)	38 months before harvest
Food crops (edible parts above soil surface)	18 months before harvest
Commercial sod	12 months before harvest

Application sites where Class A and Class B biosolids have been applied should have required appropriate signage to identify the site as having received biosolids. Signs must be placed at all four corners of the application site as well as on each access road or path to the site. For Class B biosolids signs must remain in place for 38 months following the most recent application. Application sites where Class A biosolids have been applied, temporary signage (2 months) is required. Typical signage should include the following wording:

Biosolids Application Site
 Proponent Name
 Identify Biosolids Source(s)
 Field No. 1; NE Corner

The signage must be maintained so that it remains in place and can be easily read for the required time period.

G.3 APPLICATION RATE AND METHODOLOGY

G.3.1 Nutrient and Land Management Plans¹

Land Application of biosolids, when pertaining to agricultural land, should follow a Nutrient Management Plan (NMP) or, when pertaining to land other than that used for agricultural purposes, i.e. reclamation sites, a Land Application Plan (LAP).

NMPs should be prepared by Nutrient Management Planners and should outline crop requirements and biosolids parameters. The NMP should determine the biosolids application rate based on the agronomic rate. Biosolids should be applied as close to the time of maximum nutrient uptake of crops as feasible. The application rate should ensure that metal concentrations in soils do not exceed the limits specified in Table G-8.

LAPs should be prepared by a professional engineer or agrologist. The LAP should outline crop/vegetation requirements and biosolids parameters, and should determine the biosolids application rate based on nutrient and organic matter requirements. The rate of application should ensure that the appropriate amount of nutrients is applied to the soil in order to prevent groundwater contamination. The application rate should ensure that metal concentrations in soils do not exceed the limits specified in G-8.

G.3.2 Acceptable Application Methods¹

With the exception of flood risk areas, Class A biosolids may be land applied by surface spreading as a top dressing or through incorporation, or by injection below the surface of the soil or as defined by the regulatory agency having jurisdictions. Class B biosolids may be surface spread followed by incorporation, or may be injected below the surface of the soil. For Class B biosolids, incorporation must take place within 24 hours of spreading.

For Class A and Class B biosolids, land application is not permitted when the ground is frozen, snow covered, or saturated. Biosolids must not be applied to land during or immediately following heavy rains or when heavy precipitation is forecasted, which may adversely affect the environment, through surface water run-off, and/or the ability to effectively spread and incorporate the biosolids on the field(s).

G.3.3 Additive Metal Loading Restrictions

Unrestricted addition of metals to agricultural soils will result in both elevated metal content of the crops and plant toxicity. The following restrictions (with a built in safety factor) are designed to control this potential problem.

The following table lists criteria for the metal content in soils:

TABLE G-8– CRITERIA FOR METAL CONTENT IN SOILS

METAL	MAXIMUM ACCEPTABLE METAL ADDITION TO SOIL (kg/ha)	MAXIMUM ACCEPTABLE METAL CONTENT IN SLUDGED SOILS (mg/kg)
As	14	14
Cd	1.6	1.6
Co	30	20
Cr	210	120
Cu	150	100
Hg	0.8	0.5
Mo	4	4
Ni	32	32
Pb	90	60
Se	2.4	1.6
Zn	330	220

G.4 SLUDGE APPLICATION ON FORESTED LAND

Disposal of sludge on forested land is considerably less hazardous than on cropland in terms of heavy metal toxicity unless the land is to be converted to cropland. For the allowable sludge loading the regulatory agency should be consulted.

G.5 MANAGEMENT OF SPREADING OPERATION

G.5.1 Hauling Equipment

The sludge hauling equipment should be designed to prevent spillage, odour and other public nuisance.

G.5.2 Valve Control

The spreading tank truck should be provided with a control so that the discharge valve can be opened and closed by the driver while the vehicle is in motion. The spreading valve should be of the "fail-safe" type (i.e., self-closing) or an additional manual stand-by valve should be employed to prevent uncontrolled spreading or spillage.

G.5.3 Sludge Storage

Sufficient sludge storage capacity should be provided for periods of inclement weather and equipment failure. The storage facilities should be designed, located and operated so as to avoid nuisance conditions. See Section 11.5.2 for more information regarding sludge storage.

G.5.4 Spreading methods

The selection of spreading methods depends on the sludge characteristics, environmental factors and others. When control of odour nuisance and runoff is required, immediate incorporation of sludge after spreading or subsurface injection should be considered. When such a method is utilized, an adjustment in the reduced rate of ammonia loss into the atmosphere should be considered in the computation for nitrogen balance.

The sludge should be spread uniformly over the surface when tank truck spreading, ridge and furrow irrigation or other methods are used. Sewage sludge application should not be made during or immediately after rainfall.

Proposals for subsurface application of sludge should include for review a description of the equipment program for application.

Spray systems, except for downward directed types, will not ordinarily be approved.

G.5.5 Monitoring Reporting, and Record Keeping

The requirements of the regulatory agency on the monitoring, reporting, and record keeping of the biosolids spreading operation should be followed. As a minimum, the producer of sludge should regularly collect and record information on the biosolids and soil characteristics and the volume of biosolids spread on a particular site.

G.6 BIOSOLIDS STORAGE

G.6.1 Biosolids Storage¹

The storage of biosolids may be required at times when land application is not possible and sufficient storage should be available to retain biosolids during these circumstances. The storage of Class A or Class B biosolids at land application sites must be approved in writing by the regulatory authority.

Class A and Class B biosolids with a minimum solids content of 20% may be stockpiled, or stored temporarily, at the application site prior to land applications, provided that the biosolids are intended for use at that location. Biosolids can be stockpiled without an impermeable surface for up to one week at the application site prior to land application, unless otherwise approved in writing by the regulatory authority. Stockpiled biosolids must be fully covered with an impermeable material, such as a tarp. Stockpiles must be located to minimize contact with surface water run-off and to prevent infiltration of precipitation and the generation of leachate. Class A and Class B biosolids with a minimum solids content of 20% may be stored for more than one week on top of an impermeable surface such as a concrete pad or clay liner at the application site prior to land application. The impermeable surface

should have curbed sidewalls or berms on all sides constructed of the same material. Clay liners should have a minimum thickness of 0.5 metres and an in-situ coefficient of permeability of 1.3×10^{-6} cm/s. Such biosolids storage areas should be fully covered with an impermeable material, such as a tarp. Stockpiled biosolids should be fully covered with an impermeable material, such as a tarp. In addition, such storage areas must be located to minimize contact with surface water run-off and to prevent infiltration of precipitation and the generation of leachate.

The storage of Class A and Class B biosolids with a solids content of less than 20% must be in lagoons only. Storage lagoons must be designed by a professional engineer. Biosolids may be stored temporarily (storage of less than 72 hours) in a tank approved by the regulatory authority on land application sites.

G.6.2 Volume

Rational calculations justifying the number of days of storage to be provided should be submitted and should be based on the total sludge handling and disposal system. Sludge production values for stabilization processes should be justified in the basis of design. If the land application method of sludge disposal is the only means of disposal utilized at a treatment plant, storage should be provided based on considerations including at least the following items:

- a. Inclement weather effects on access to the application land;
- b. Temperatures including frozen ground and stored sludge cake conditions;
- c. Haul road restrictions including spring thawing conditions;
- d. Area seasonal rainfall patterns;
- e. Cropping practices on available land;
- f. Potential for increased sludge volumes from industrial sources during the design life of the plant; and
- g. Available area for expanding sludge storage.

A minimum range of 120 to 180 days storage should be provided for the design life of the plant unless a different period is approved by the regulatory agency.

Footnote References

1. Nova Scotia Environment and Labour, "Guidelines For Land Application and Storage of Biosolids in Nova Scotia", May 2004.

APPENDIX 2

CPC Sludge Nutrients

<u>Parameter</u>	<u>units</u>	<u>Biosolid</u>
Carbon	%	8.6
Calcium	%	0.5
Dry Matter	%	22.4
Potassium	%	0.04
Magnesium	%	0.1
Nitrogen	%	1.1
Phosphorus	%	0.38

CPCP BIO-SOLIDS RESULTS 2016

Parameter	Units	EQ standard	Mean
Fecal	MPN/g	<1000	<u>1583</u>
Salmonella	MPN/4g	<3	ND
Mercury	mg/Kg	17	1
Arsenic	mg/Kg	41	5
Cadmium	mg/Kg	39	9
Chromium	mg/Kg	1200	18
Copper	mg/Kg	1500	645
Lead	mg/Kg	300	82
Nickel	mg/Kg	420	13
Selenium	mg/Kg	36	4
Zinc	mg/Kg	2800	597

Shaded Denotes Guideline Exceedance

Underlined Values note exceedance of Fecal, however Pathogen Guideline is met through Salmonella Value.

Pathogen Guideline

Fecal Coliform: <1000 MPN*/g total solids (dry weight)

OR

Salmonella: <3 MPN*/4g total solids (dry weight)