



## RETURN BIDS TO:

## RETOURNER LES SOUMISSIONS À:

Réception des soumissions - TPSGC / Bid Receiving  
- PWGSC

1550, Avenue d'Estimauville

1550, D'Estimauville Avenue

Québec

Québec

G1J 0C7

FAX pour soumissions: (418) 648-2209

## REQUEST FOR PROPOSAL DEMANDE DE PROPOSITION

### Proposal To: Public Works and Government Services Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

### Proposition aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

### Comments - Commentaires

### Vendor/Firm Name and Address

### Raison sociale et adresse du

### fournisseur/de l'entrepreneur

### Issuing Office - Bureau de distribution

TPSGC/PWGSC

601-1550, Avenue d'Estimauville

Québec

Québec

G1J 0C7

<b>Title - Sujet</b> Leading lights	
<b>Solicitation No. - N° de l'invitation</b> F3051-170041/A	<b>Date</b> 2017-09-05
<b>Client Reference No. - N° de référence du client</b> F3051-170041	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$QCN-032-17196	
<b>File No. - N° de dossier</b> QCN-7-40088 (032)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2017-10-16</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Heure Avancée de l'Est HAE
<b>F.O.B. - F.A.B.</b> Specified Herein - Précisé dans les présentes <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input checked="" type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Fortin, MC	<b>Buyer Id - Id de l'acheteur</b> qcn032
<b>Telephone No. - N° de téléphone</b> (418) 649-2764 ( )	<b>FAX No. - N° de FAX</b> (418) 648-2209
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> MINISTERE DES PECHEES ET DES OCEANS 101 BLVD CHAMPLAIN QUEBEC Québec G1K7Y7 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

<b>Delivery Required - Livraison exigée</b> Voir doc	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

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## **PART 1 - GENERAL INFORMATION**

### **1.1 Requirement**

The requirement is detailed at article 6.2 of the Resulting Contract Clauses section.

### **1.2 Debriefings**

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

### **1.3 Trade Agreements**

The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), and the Canadian Free Trade Agreement (CFTA).

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## PART 2 - BIDDER INSTRUCTIONS

### 2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2017-04-27) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

#### 2.1.1 SACC Manual Clauses

B1000T (2014-06-26) Condition of material – Bid

#### 2.1.2 Prices - Items

Bidders must submit firm prices for one or multiple groups of items. However, bidders must submit firm prices for all items listed in the group(s) of items for which they submit prices. The groups of items are as follows:

- a. Group A: All items listed under "1. Group A – Ile-Mermette" in Annex B - Basis of Payment. "
- b. Group B: All items listed under "2. Group B – Ile Ste-Thérèse (Beacon) " in Annex B - Basis of Payment. "
- c. Group C: All items listed under '3. Group C - Saint-Anne-des-Monts" in Annex B - Basis of payment."
- d. Group D: All items listed under "4. Group D - Pointe-Penouille" in Annex B - Basis of Payment. "
- e. Group E: All items listed under "5. Group E - Ste-Thérèse (Range)" in Annex B - Basis of Payment. "
- f. Group F: All items listed under "6. Group F - Rimouski" in Annex B - Basis of Payment."
- g. Group G: All items listed under "7. Group G – Traverse Longue Pointe' in Annex B - Basis of Payment."
- h. Group H: All items listed under "8. Group H - Pointe du Lac in Annex B - Basis of payment."
- i. Group I: All items listed under "9. Group I – Ile du Moine" in Annex B - Basis of Payment. "

### 2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

Your proposal can be transmitted by fax to # 418-648-2209 or by mail to the following address:

Bid Receiving Unit  
Public Works and  
Government Services Canada (PWGSC)  
1550 D'Estimauville Avenue  
Quebec City, Quebec, Canada, G1J 0C7

### **2.3 Enquiries - Bid Solicitation**

All enquiries must be submitted in writing to the Contracting Authority [Marie-Claire.Fortin@tpsgc-pwgsc.gc.ca](mailto:Marie-Claire.Fortin@tpsgc-pwgsc.gc.ca) no later than seven (7) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

### **2.4 Applicable Laws**

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the Province of Quebec.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

## **PART 3 - BID PREPARATION INSTRUCTIONS**

### **3.1 Bid Preparation Instructions**

Canada requests that Bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (1 hard copy)

Section II: Financial Bid (1 hard copy)

Section III: Certifications (1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that Bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, Bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

#### **Section I: Technical Bid**

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

#### **Section II: Financial Bid**

Bidders must submit their financial bid in accordance with the Basis of Payment – Annex B. The total amount of Applicable Taxes must be shown separately.

##### **3.1.1 Exchange Rate Fluctuation**

SACC *Manuel* Clause [C3011T](#) (2013-11-06), Exchange Rate Fluctuation

##### **3.1.2 SACC *Manuel* Clause**

#### **Section III: Certifications**

Bidders must submit the certifications and additional information required under Part 5.

## PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

### 4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.
- (c) This bid solicitation is for the acquisition of nine (9) groups of items (see 2.1.2 Prices - Items). Nine (9) separate assessments will be conducted for each group. Any interested bidder may submit a bid for one (1) or more groups of items.

#### 4.1.1 Technical Evaluation

##### 4.1.1.1 Mandatory Technical Criteria

- a) The bidder must include with its proposal the datasheets of the products offered.
- b) Although the bidders must proposed products that meet all the specifications described in the Annex A, at the closure date, bids will be evaluated on the following technical requirements at Annex C – Technical Compliance Form, Section A – Mandatory Technical Criteria

**IMPORTANT:** The bidder should indicate, for each mandatory criteria of the Annex C, whether the proposed equipment complies or not by filling the appropriate box. **The bidder must clearly demonstrate how the proposed equipment complies to each mandatory technical criteria at Annex C. Simply stating that the criteria are met is not sufficient.** Where it is necessary to refer to other documentation that is included in the proposal, bidders should include the precise location of the reference material including the title of the document, and the page and paragraph numbers. It is the bidder's responsibility to provide enough details to permit a complete evaluation.

Any proposal that does not clearly demonstrate compliance with each of the technical requirements listed in the "Mandatory Technical Criteria" tables for each site for which the bidder wishes to bid (Annex C Section A) will be considered non-responsive.

##### 4.1.1.2 Point Rated Technical Criteria (Assets)

Each bid meeting all of the mandatory technical criteria, will be evaluated and noted in accordance with the point rated evaluation criteria, as assets and detailed in Annex C - Technical Compliance Form, Section B – Pointe rated technical Criteria.

This table includes eight (8) point rated criteria and will be used for each site.

The maximum score of the rated evaluation will be eighty-five (85).

##### 4.1.1.3 Evaluated Criteria for Group of Items per Site

Each site is associated with a group of items. The bidder who makes a proposal for a single site, so for one group of items, or for multiple sites, so for several groups of products, must demonstrate product compliance in the Technical Compliance Form of corresponding sites.

##### Example 1:

##### Proposal for Site 1: Ile Mermette

A proposal for this site should include:

Annex C: Section A - Mandatory Technical Criteria - Table 1 Ile Mermette  
Section B - Technical Criteria - Table 10 for Ile Mermette

##### Example 2:

##### Proposal for Site 1: Ile Mermette and Site 7: Traverse Longue Pointe

A proposal for these sites should include:

Annex C:     Section A - Mandatory Technical Criteria - Table 1 Ile Mermette  
                  Section A - Mandatory Technical Criteria - Table 7 Traverse Longue Pointe  
                  Section B - Technical Criteria - Table 10 for Ile Mermette  
                  Section B - Rated Technical Criteria - Table 10 for Traverse Longue Pointe

#### **4.1.2 Financial Evaluation**

The Total Bid Price (TBD) will be evaluated in Canadian dollars, Applicable Taxes excluded, DDP destination, Canadian customs duties and excise taxes included.

The bid price is equivalent of the Total Bid Price (TBP) specified in Annex B - Basis of Payment. The TBP includes the following items: Lights (beacon or range), documentation and delivery charges.

A bid may be submitted for a site or multiple sites. Thus, the contract may be awarded in whole or in part to different bidders determined according to the selection method specified in point 4.2.

#### **4.2 Basis of Selection - Highest Combined Rating of Technical Merit and Price**

1. To be declared responsive, a bid must:
  - a. comply with all the requirements of the bid solicitation and
  - b. meet all mandatory criteria.
2. Bids not meeting the requirements a. and b. will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 40 % for the technical merit and 60 % for the price.
4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 40 %.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 60 %.
6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.
8. Bids will be evaluated for each group of items. Thus, a bidder may be awarded the contract for one or more sites.



#### 4.2.1 Example of Calculation

The table below illustrates an example where three bids are responsive for one site and the selection of the contractor is determined by a 40/60 ratio of technical merit and price, respectively. The total available points equals 85 and the lowest evaluated price is \$45,000. Each site will be evaluated as follows:

		Bidder # 1	Bidder # 2	Bidder # 3
<b>Overall Technical Score</b>		85/85	75/85	80/85
<b>Bid Evaluated Price</b>		55,000\$	50,000\$	45,000\$
<b>Calculation</b>	<b>Technical Merit Score</b>	$85/85 \times 40 = 40$	$75/85 \times 40 = 35.29$	$80/85 \times 40 = 37.65$
	<b>Pricing Score</b>	$45000 / 55000 \times 60 = 49.09$	$45000 / 50000 \times 60 = 54$	$45000 / 45000 \times 60 = 60$
<b>Combined Rating</b>		89.09	89.29	97.65
<b>Overall Rating</b>		3e	2e	1er

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## PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

### 5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

#### 5.1.1 Integrity Provisions – Declaration of Convicted Offences

In accordance with the [Integrity and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide with its bid the required documentation, as applicable, to be given further consideration in the procurement process.

### 5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

#### 5.2.1 Integrity Provisions – Required Documentation

In accordance with the [Integrity and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

#### 5.2.2 Federal Contractors Program for Employment Equity – Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) – Labour's](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969) website ([http://www.esdc.gc.ca/en/jobs/workplace/human\\_rights/employment\\_equity/federal\\_contractor\\_program.page?&\\_ga=1.229006812.1158694905.1413548969](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969)).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

#### 5.2.3 Bidder certifies that All Equipment is "Off-the-Shelf"

Any equipment bid to meet this requirement must be "off-the-shelf" (unless otherwise stated in this bid solicitation), meaning that each item of equipment is commercially available and requires no further research or development and is part of an existing product line with a field-proven operational history (that is, it has not simply been tested in a laboratory or experimental environment). If any of the equipment bid is a fully compatible extension of a field-proven product line, it must have been publicly announced on or before the bid closing date. By submitting a bid, the Bidder is certifying that the entire equipment bid is off-the-shelf.

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#### 5.2.4 OEM Certification (Annex D)

- (a) Any Bidder that is not the Original Equipment Manufacturer (OEM) for every item of hardware proposed as part of its bid is required to submit the OEM's certification regarding the Bidder's authority to provide and maintain the OEM's hardware, which must be signed by the OEM (not the Bidder). **(Annex D)**
- (b) No Contract will be awarded to a Bidder who is not the OEM of the hardware it proposes to supply to Canada, unless the OEM certification has been provided to Canada. Bidders are requested to use the OEM Certification Form included with the bid solicitation. Although all the contents of the OEM Certification Form are required, using the form itself to provide this information is not mandatory. For Bidders/OEMs who use an alternate form, it is in Canada's sole discretion to determine whether all the required information has been provided. Alterations to the statements in the form may result in the bid being declared non-responsive.
- (c) If the hardware proposed by the Bidder originates with multiple OEMs, a separate OEM certification is required from each OEM.

For the purposes of this bid solicitation, EOM means the manufacturer of the hardware, as evidenced by the name appearing on the hardware and on all accompanying documentation.

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## PART 6 – RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

### 6.1 Security Requirements

There is no security requirement applicable to this contract.

### 6.2 Requirement

The Contractor must supply range lights and beacon light for aids to navigation in accordance with the Requirement described at Annex “A” and its technical submission entitled \_\_\_\_\_, dated \_\_\_\_\_.

The Contractor must provide material that is new production of current manufacture supplied by the principal manufacturer or its accredited agent. The material must conform to the latest issue of the applicable drawing, specification and part number, as applicable, that was in effect on the bid closing date.

### 6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

#### 6.3.1 General Conditions

2010A (2016-04-04), General Conditions – Goods (Medium Complexity), apply to and form part of the Contract.

##### 6.3.1.1 Warranty Period

1. Section 09 of general conditions 2010A (2016-04-04) is amended by replacing the period of 12 months by 60 months.  
All other provisions of the warranty section remain in effect.
2. Section 09 of general conditions 2010A (2016-04-04) is amended by deleting subsection 2 in its entirety and replacing it with the following:

The Contractor must pay the transportation cost associated with returning the Work or any part of the Work to the Contractor's plant for replacement, repair or making good. The Contractor must also pay the transportation cost associated with forwarding the replacement or returning the Work or part of the Work when rectified to the delivery point specified in the Contract or to another location as directed by Canada. If, in the opinion of Canada, it is not expedient to remove the Work from its location, the Contractor must carry out any necessary repair or making good of the Work at that location. In such cases, the Contractor will be responsible for all Costs (including travel and living expenses) incurred in so doing, Canada will not reimburse these Costs.

All other provisions of the warranty section remain in effect.

#### 6.3.2 Supplemental General Conditions

4001 (2015-04-01), Hardware Purchase, Lease and Maintenance apply to and form part of the Contract.

Section 14 of Supplemental general conditions 4001(2015-04-01) is amended by replacing the period of 12 months by 60 months.

All other provisions of the warranty section remain in effect.

## **6.4 Term of Contract**

### **6.4.1 Period of the Contract**

The contract period is from the date of contract award until the end of the warranty period inclusively.

### **6.4.2 Delivery Date**

All the deliverables must be received on or before eight (8) weeks after contract awarded.

## **6.5 Authorities**

### **6.5.1 Contracting Authority**

The Contracting Authority for the Contract is:

Name : Marie-Claire Fortin  
Title : Procurement Agent  
Public Services and Procurement Canada  
Supply and Compensation Directorate  
Address : 1550 D'Estimauville Avenue,  
Quebec City, Quebec, Canada  
G1J 0C7  
Telephone : 418-649-2764  
Facsimile : 418-648-2209  
E-mail : [Marie-Claire.Fortin@tpsgc-pwgsc.gc.ca](mailto:Marie-Claire.Fortin@tpsgc-pwgsc.gc.ca)

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

### **6.5.2 Project Authority**

The Project Authority for the Contract is: *(will be added to the contract)*

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_

Telephone: \_\_\_\_\_  
Facsimile: \_\_\_\_\_  
E-mail address: \_\_\_\_\_

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

### **6.5.3 Contractor's Representative**

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Facsimile: \_\_\_\_\_  
E-mail address: \_\_\_\_\_

## **6.6 Payment**

### **6.6.1 Basis of Payment**

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price, as specified in Annex B for a cost of \$ \_\_\_\_\_ (*insert the amount at contract award*). Customs duties are *included* and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

### **6.6.2 Terms of payment**

*SACC Manual* Clause H1001C, (2008-05-12) Multiple payments

## **6.7 Invoicing Instructions**

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.
2. Invoices must be distributed as follows:
  - a. The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.
  - b. One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

## **6.8 Certifications**

### **6.8.1 Compliance**

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

## **6.9 Applicable Laws**

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the Province of Quebec.

## **6.10 Priority of Documents**

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 4001, (2015-04-01) Hardware Purchase, Lease and Maintenance, as amended in the Articles of this Convention;
- (c) the General Conditions 2010A (2016-04-04) Goods (Medium Complexity), as amended in the articles of this Convention;
- (d) Annex A, Requirement;
- (e) Annex B, Basis of payment;
- (f) Annex C, Technical Compliance Form
- (g) Annex D, OEM Certification Form
- (h) the Contractor's bid dated \_\_\_\_\_ (*insert date of bid*)

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#### 6.11 **SACC Manual Clauses**

G1005C	2016-01-28	Insurance
B7500C	2006-06-16	Excess Goods
D9002C	2007-11-30	Incomplete Assemblies
B1501C	2006-06-16	Electrical Equipment

#### 6.12 **Inspection and Acceptance**

The Project Authority is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to inspection by the Inspection Authority or representative. Should any report, document, good or service not be in accordance with the requirements of the Statement of Work and to the satisfaction of the Inspection Authority, as submitted, the Inspection Authority will have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

#### 6.13 **Shipping Instructions - Delivery at Destination**

Goods must be consigned to the destination specified in the Contract and delivered DDP Delivered Duty Paid; GCC, Fisheries and Oceans, 101, Boul. Champlain, (Québec), G1K 7Y7 Canada, Incoterms 2000 for shipments from commercial contractor.

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## ANNEX A – REQUIREMENT

### 1. BACKGROUND

This document outlines the Canadian Coast Guard's (CCG) specifications for the required light-emitting diode (LED) range lights and beacons which will be used on the following sites, Île Mermettes, Sainte-Anne-des-Monts, Pointe Penouille, Île Ste-Thérèse, Rimouski, Traverse Longue Pointe, Pointe du lac and Île du Moine. This project is part of the national aids to navigation modernization project. The objective is to reduce the operating cost and increase the reliability of the service.

The main goals of this modernisation project targets are:

- Revision of the current Aids to Navigation's Level of Service;
- Increase the reliability and the efficiency of the network by using the LED technology;
- Reduce downtime and response time;
- Reduce operating costs;
- Facilitate installation and alignment of lanterns;
- Reduce inventories by limiting the number of models;
- Standardize lantern bolting circles for ease of use across the network without modification of existing supports;
- Reduce the size and weight of lanterns and facilitate handling. The replacement of the lanterns is done regularly by helicopter and the cargo space is limited;
- Reduce environmental impacts and risks by reducing the amount of batteries required to operate LED lanterns compared to incandescent bulb technology.

### 2. REQUIREMENTS

The Canadian Coast Guard (CCG) wishes to enter into one or more contracts<sup>1</sup> for acquisition of the following :

Six (6) LED (light emitting diode) beacon lights for aids to navigation. Two (2) for each of these three (3) sites (one (1) installed and the second put in a storage as spare equipment) :

Site 1 : Île Mermettes (LDF1539.13)

Site 2 : Île Ste-Thérèse (LDF 2335.1)

Site 3 : Sainte-Anne-des-Monts (LDF 1683)

Eighteen (18) LED (light emitting diode) range lights for aids to navigation. Three (3) for each of these six (6) sites (two (2) installed and one (1) put in a storage as spare equipment) :

Site 4 : Pointe Penouille (LDF 1419.6 and 1419.7)

Site 5 : Île Ste-Thérèse (LDF 2335 and 2336)

Site 6 : Rimouski (1734 and 1735)

Site 7 : Traverse Longue Pointe (2361 and 2362)

Site 8 : Pointe du lac (2125 and 2126)

Site 9 : Île du Moine (2180 and 2181)

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<sup>1</sup> **Note: Several contracts may be awarded. See Part 4 - Evaluation Procedures and Basis of Selection**



### 3. MANDATORY TECHNICAL SPECIFICATIONS

Mandatory technical requirements consist of two components.

The first includes standards for navigation lights and the second the technical requirements to meet the level of service required by the Programs depending on the site specifications

In order to get the best possible product, some of these criteria will be rated. In addition, bonus points will be awarded to the best performing products

**Table 3.1- Technical specification – Île Mermettes**

ID	Specification Description		Requirement or Value
3.1.1.	Recommendation IALA, Guideline December 2008		E-200 series
3.1.2.	Recommendation IALA Guideline , Rhythmic Characters, June 2012		E-110
3.1.3.	Recommendation IHO, Standardization of list of lights and fog signals, June 2004		
3.1.4.	Lantern type	Beacon	An assembly of two lanterns and more, per site <b><u>will not be accepted.</u></b>
3.1.5.	Quantity		2
3.1.6.	System power consumption (Watt)	The bidder must provide the max power consumption of the proposed system (including all electronic components).	Power consumption will be compared to the other subjected products. The product offering the lowest ratio Watt/Candelas will have the best notes. See an example in Table section 3.1.6 Annex C
3.1.7.	Color		White
3.1.8.	Bulb type		LED
3.1.9.	Rhythmic Character	Time ON	1 sec
3.1.10.		Time OFF	1 sec
3.1.11.	Period of annual operation		Annual
3.1.12.	Period of daily operation		Night
3.1.13.	Input voltage		12 Vdc <b>or</b> 24Vdc
3.1.14.	GPS option		Yes
3.1.15.	Candelas (Cd) at night	Max	450
3.1.16.	Vertical divergence ( ° )	Min	2°
3.1.17.	Emergency Mode		Yes
3.1.18.	Candelas reduction in emergency mode		50% of the max candelas output, day or night
3.1.19.	Rhythmic Character in emergency mode		Quick 1s (.5)
3.1.20.	Emergency Mode if input voltage is <b><u>12 Vdc</u></b>	Start emergency mode	11.5 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	9 Vdc
		Lantern back to the operational mode	12 Vdc
		Start emergency mode	23 Vdc

ID	Specification Description		Requirement or Value
	Emergency Mode if input voltage is <b>24 Vdc</b>	Lantern turns in sleeping mode (LEDs turn off)	19 Vdc
		Lantern back to the operational mode	24 Vdc
3.1.21.	Communication port	Required	A communication port, such as a serial interface, infrared device or other, used for external diagnostics, programming, and alarm outputs is required. A system built into the lantern is preferred, i.e. no external hardware or components to install or maintain.
3.1.22.	Height	Maximum	600 mm (including base adaptor)
3.1.23.	Weight	Maximum	15 kg (including base adaptor)
3.1.24.	Markings	Required	The Lantern shall be identified with the following information, on a name plate and always visible. Permanently engraved or chemically printed: <ol style="list-style-type: none"> <li>1. Manufacturer Name</li> <li>2. Date of Manufacturing</li> <li>3. Model Number</li> <li>4. Serial number</li> <li>5. Rated Voltage/Amperage/Watt</li> </ol> All markings shall be legible for the entire lantern service life.
3.1.25.	Mounting	A bolting circle drawing must be provided as a proof of compliance. Provide a drawing.	The base of the unit shall either be equipped with the two bolting patterns, as follows (preferred option): <ol style="list-style-type: none"> <li>1. Four (4) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200mm diameter bolt circle</li> <li>2. Three (3) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200 mm diameter bolt circle.</li> </ol> Or, be supplied with an adapter plate with the requisite two bolting patterns described above (less desirable option). Note, bolt holes must be located directly in the base of the unit with an access to both sides.
3.1.26.	Bird deterrent	Required	The lantern shall have an effective means of restricting the ability of birds to roost on the lantern. Minimum 150 mm length.
3.1.27.	Sighting scope	Required on delivery	Sighting scope or any components for the horizontal adjustment of the light beam shall be provided
3.1.28.	Photometric curves	Required on delivery	The photometric curves shall be provided
3.1.29.	Service Life	Minimum	10 years, based on year-round operation
3.1.30.	Mean Time Between Failures (MTBF)	Minimum	5 years, based on year-round operation
3.1.31.	Warranty	Minimum	Full 5-year warranty including parts, labor and shipping

ID	Specification Description		Requirement or Value
3.1.32.	Operating Temperature	Minimum Range	-40°C to +55°C
3.1.33.	Wind	Speed	Up to 160 km/hour minimum
3.1.34.	Ice accumulation	Thickness	Up to 40 mm minimum
3.1.35.	Dry Heat		IEC 60945 Edition 4 – Section 8.2
3.1.36.	Damp Heat		IEC 60945 Edition 4 – Section 8.3
3.1.37.	Vibration		IEC 60945 Edition 4 – Section 8.7
3.1.38.	Rain and spray		IEC 60945 Edition 4 – Section 8.8
3.1.39.	Solar Radiation		IEC 60945 Edition 4 – Section 8.10
3.1.40.	Corrosive Conditions		IEC 60945 Edition 4 – Section 8.12
3.1.41.	Immersion	Minimum	IP 66
3.1.42.	Electromagnetic interference protection		From VHF radio, radar, static discharges and inducted, transient voltage from lightning strikes.
3.1.43.	Programming/hardware	Required on delivery	A software and hardware and remote control shall be provided with the lantern.
3.1.44.	User manuals	Required on delivery	User/programming and installation manuals shall be provided with the lantern.
3.1.45.	Maintenance schedule	Required on delivery	A maintenance schedule shall be provided
3.1.46.	Spare parts list	Required on delivery	A spare parts list shall be provided
3.1.47.	Original LED lantern design		The lantern must not be a previous lantern version with bulbs converted to LED.

**Table 3.2 Technical requirement – Île Ste-Thérèse (Beacon)**

ID	Item Description		Requirement or Value
3.2.1.	Recommendation IALA, Guideline December 2008		E-200 series
3.2.2.	Recommendation IALA Guideline , Rhythmic Characters, June 2012		E-110
3.2.3.	Recommendation IHO, Standardization of list of lights and fog signals, June 2004		
3.2.4.	Lantern Type	Beacon	An assembly of two lanterns and more, per site, <b><u>will not be accepted</u></b>
3.2.5.	Quantity		2
3.2.6.	System power consumption (Watt)	The bidder must provide the max power consumption of the proposed system (including all electronic components).	Power consumption will be compared to the other subjected products. The product offering the lowest power consumption will have the best notes. See an example in Table Section 3.2.6 Annex C
3.2.7.	Color		Green
3.2.8.	Bulb type		LED
3.2.9.	Rhythmic Character		Fixe
3.2.10.	Vertical divergence ( °)	Min	5°
3.2.11.	Period of annual operation		Annual
3.2.12.	Period of daily operation		Night

ID	Item Description		Requirement or Value
3.2.13.	Input voltage		12 Vdc <u>or</u> 24 Vdc
3.2.14.	GPS Option		Yes
3.2.15.	Candelas (Cd) at night	Max	60
3.2.16.	Emergency Mode		Yes
3.2.17.	Candelas reduction in emergency mode		50% of the max candelas, day or night
3.2.18.	Rhythmic Character in emergency mode		Quick 1s (.5)
3.2.19.	Emergency Mode <u>if</u> voltage input is <u>12 Vdc</u>	Start emergency mode	11.5 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	9 Vdc
		Lantern back to the operational mode	12 Vdc
	Emergency Mode <u>if</u> voltage input is <u>24 Vdc</u>	Start emergency mode	23 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	19 Vdc
		Lantern back to the operational mode	24 Vdc
3.2.20.	Communication port	Required	A communication port, such as a serial interface, infrared device or other, used for external diagnostics, programming, and alarm outputs is required. A system built into the lantern is preferred i.e. no external hardware or components to install or maintain.
3.2.21.	Height	Maximum	600 mm (including base adaptor)
3.2.22.	Weight	Maximum	15 kg (including base adaptor)
3.2.23.	Markings	Required	The Lantern shall be identified with the following information, on a name plate and always visible. Permanently engraved or chemically printed <ol style="list-style-type: none"> <li>1. Manufacturer Name</li> <li>2. Date of Manufacturer</li> <li>3. Model Number</li> <li>4. Serial number</li> <li>5. Rated Voltage/Amperage</li> </ol> All markings shall be legible for the entire lantern service life.
3.2.24.	Mounting	A bolting circle drawing must be provided as a proof on compliance. Provide a drawing.	The base of the unit shall either be equipped with the two bolting patterns, as follows (preferred option): <ol style="list-style-type: none"> <li>1. Four (4) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200mm diameter bolt circle</li> <li>2. Three (3) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200 mm diameter bolt circle.</li> </ol>

ID	Item Description	Requirement or Value	
			Or, be supplied with an adapter plate with the requisite two bolting patterns described above (less desirable option). Note, bolt holes must be located directly in the base of the unit with an access to both sides
3.2.25.	Bird deterrent	Required	The lantern shall have an effective means of restricting the ability of birds to roost on the lantern. Minimum 150 mm length
3.2.26.	Sighting scope	Required on delivery	Sighting scope or any components for the horizontal adjustment of the light beam shall be provided
3.2.27.	Photometric curves	Required on delivery	The photometric curves shall be provided
3.2.28.	Service Life	Minimum	10 years, based on year-round operation
3.2.29.	Mean Time Between Failures (MTBF)	Minimum	5 years, based on year-round operation
3.2.30.	Warranty	Minimum	Full 5-year warranty including parts, labor and shipping
3.2.31.	Operating Temperature	Minimum Range	-40°C to +55°C
3.2.32.	Wind	Speed	Up to 160 km/hour minimum
3.2.33.	Ice accumulation	Thickness	Up to 40 mm minimum
3.2.34.	Dry Heat		IEC 60945 Edition 4 – Section 8.2
3.2.35.	Damp Heat		IEC 60945 Edition 4 – Section 8.3
3.2.36.	Vibration		IEC 60945 Edition 4 – Section 8.7
3.2.37.	Rain and spray		IEC 60945 Edition 4 – Section 8.8
3.2.38.	Solar Radiation		IEC 60945 Edition 4 – Section 8.10
3.2.39.	Corrosive Conditions		IEC 60945 Edition 4 – Section 8.12
3.2.40.	Immersion	Minimum	IP 66 or better
3.2.41.	Electromagnetic interference protection		From VHF radio, radar, static discharges and inducted, transient voltage from lightning strikes
3.2.42.	Programming/hardware	Required on delivery	A software and hardware and remote control shall be provided with the lantern
3.2.43.	User manuals	Required on delivery	User/programming and installation manuals shall be provided
3.2.44.	Maintenance schedule	Required on delivery	A maintenance schedule shall be provided
3.2.45.	Spare parts list	Required on delivery	A spare parts list shall be provided
3.2.46.	Original LED lantern design		The lantern must not be a previous lantern version with bulbs converted to LED

**Table 3.3 Technical requirement – Sainte-Anne-des-Monts**

ID	Item Description	Requirement or Value
3.3.1.	Recommendation IALA, Guideline December 2008	E-200 series

ID	Item Description		Requirement or Value
3.3.2.	Recommendation IALA Guideline , Rhythmic Characters, June 2012		E-110
3.3.3.	Recommendation IHO, Standardization of list of lights and fog signals, June 2004		
3.3.4.	Lantern Type	Beacon	An assembly of two lanterns and more, per site <b><u>will not be accepted.</u></b>
3.3.5.	Quantity		2
3.3.6.	System power consumption (Watt)	The bidder must provide the max power consumption of the proposed system (including all electronic components).	Power consumption will be compared to the other subjected products. The product offering the lowest ratio Watt/Candelas will have the best notes. See an example in Table Section 3.3.6 Annex C
3.3.7.	Color		Red
3.3.8.	Bulb type		LED
3.3.9.	Rhythmic Character	Time ON	1 sec
3.3.10.		Time OFF	1 sec
3.3.11.	Vertical divergence ( ° )	Min	7°
3.3.12.	Period of annual operation		Annual
3.3.13.	Period of daily operation		Night
3.3.14.	Input voltage		12 Vdc <b><u>or</u></b> 24 Vdc
3.3.15.	GPS Option		Yes
3.3.16.	Candelas (Cd) at night	Max	275
3.3.17.	Emergency Mode		Yes
3.3.18.	Candelas reduction in emergency mode		50% of the max candelas, day or night
3.3.19.	Rhythmic Character in emergency mode		Quick 1s (.5)
3.3.20.	Emergency Mode <b><u>if</u></b> voltage input is <b><u>12 Vdc</u></b>	Start emergency mode	11.5 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	9 Vdc
		Lantern back to the operational mode	12 Vdc
	Emergency Mode <b><u>if</u></b> voltage input is <b><u>24 Vdc</u></b>	Start emergency mode	23 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	19 Vdc
		Lantern back to the operational mode	24 Vdc
3.3.21.	Communication port	Required	A communication port, such as a serial interface, infrared device or other, used for external diagnostics, programming, and alarm outputs is required. A system built into the lantern is preferred i.e. no external hardware or components to install or maintain.
3.3.22.	Height	Maximum	600 mm (including base adaptor)

ID	Item Description		Requirement or Value
3.3.23.	Weight	Maximum	15 kg (including base adaptor)
3.3.24.	Markings	Required	<p>The Lantern shall be identified with the following information, on a name plate and always visible. Permanently engraved or chemically printed</p> <ol style="list-style-type: none"> <li>1. Manufacturer Name</li> <li>2. Date of Manufacturer</li> <li>3. Model Number</li> <li>4. Serial number</li> <li>5. Rated Voltage/Amperage</li> </ol> <p>All markings shall be legible for the entire lantern service life.</p>
3.3.25.	Mounting	<p>A bolting circle drawing must be provided as a proof on compliance. Provide a drawing.</p>	<p>The base of the unit shall either be equipped with the two bolting patterns, as follows (preferred option):</p> <ol style="list-style-type: none"> <li>1. Four (4) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200mm diameter bolt circle</li> <li>2. Three (3) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200 mm diameter bolt circle.</li> </ol> <p>Or, be supplied with an adapter plate with the requisite two bolting patterns described above (less desirable option). Note, bolt holes must be located directly in the base of the unit with an access to both sides</p>
3.3.26.	Bird deterrent	Required	<p>The lantern shall have an effective means of restricting the ability of birds to roost on the lantern. Minimum 150 mm length</p>
3.3.27.	Sighting scope	Required on delivery	Sighting scope or any components for the horizontal adjustment of the light beam shall be provided
3.3.28.	Photometric curves	Required on delivery	The photometric curves shall be provided
3.3.29.	Service Life	Minimum	10 years, based on year-round operation
3.3.30.	Mean Time Between Failures (MTBF)	Minimum	5 years, based on year-round operation
3.3.31.	Warranty	Minimum	Full 5-year warranty including parts, labor and shipping
3.3.32.	Operating Temperature	Minimum Range	-40°C to +55°C
3.3.33.	Wind	Speed	Up to 160 km/hour minimum
3.3.34.	Ice accumulation	Thickness	Up to 40 mm minimum
3.3.35.	Dry Heat		IEC 60945 Edition 4 – Section 8.2
3.3.36.	Damp Heat		IEC 60945 Edition 4 – Section 8.3
3.3.37.	Vibration		IEC 60945 Edition 4 – Section 8.7
3.3.38.	Rain and spray		IEC 60945 Edition 4 – Section 8.8
3.3.39.	Solar Radiation		IEC 60945 Edition 4 – Section 8.10
3.3.40.	Corrosive Conditions		IEC 60945 Edition 4 – Section 8.12

ID	Item Description		Requirement or Value
3.3.41.	Immersion	Minimum	IP 66 or better
3.3.42.	Electromagnetic interference protection		From VHF radio, radar, static discharges and inducted, transient voltage from lightning strikes
3.3.43.	Programming/hardware	Required on delivery	A software and hardware and remote control shall be provided with the lantern
3.3.44.	User manuals	Required on delivery	User/programing and installation manuals shall be provided
3.3.45.	Maintenance schedule	Required on delivery	A maintenance schedule shall be provided
3.3.46.	Spare parts list	Required on delivery	A spare parts list shall be provided
3.3.47.	Original LED lantern design		The lantern must not be a previous lantern version with bulbs converted to LED

**Table 3.4- Technical specification – Pointe Penouille**

ID	Specification Description		Requirement or Value
3.4.1.	Recommendation IALA, Guideline December 2008		E-200 series
3.4.2.	Recommendation IALA Guideline , Rhythmic Characters, June 2012		E-110
3.4.3.	Recommendation IHO, Standardization of list of lights and fog signals, June 2004		
3.4.4.	Lantern Type	Range Light	An assembly of two lanterns and more per site <b><u>will not be accepted.</u></b>
3.4.5.	Quantity		3
3.4.6.	System power consumption (Watt)	The bidder must provide the max power consumption of the proposed system (including all electronic components).	Power consumption will be compared to the other subjected products. The product offering the lowest ratio Watt/Candelas will have the best notes. See an example in Table section 3.4.6 Annex C
3.4.7.	Color		White
3.4.8.	Bulb type		LED
3.4.9.	Rhythmic character		Fixe
3.4.10.	Period of annual operation		Annual
3.4.11.	Period of daily operation		24h / day
3.4.12.	Input voltage		12 Vdc <b><u>or</u></b> 24 Vdc
3.4.13.	Synchronisation	Any kind of synchronisation system	Yes
3.4.14.	Candelas reduction at night	Yes	The Candelas must be automatically adjusted to the setting point identified at the item 3.4.15, whenever the ambient illumination, measured on a horizontal plane, falls below 75 lux $\pm$ 25 lux.
3.4.15.	Candelas (Cd) at day	Min	15 000
3.4.16.	Candelas (Cd) at night	Max	225
3.4.17.	Vertical divergence ( ° )	Min	3°



ID	Specification Description		Requirement or Value
3.4.18.	Horizontal divergence ( ° )	Min @ 50% of max candelas	8°
3.4.19.	Horizontal divergence ( ° )	Min @ 10% of max candelas	11°
3.4.20.	Emergency Mode		Yes
3.4.21.	Candelas reduction in emergency mode		50% of the max candelas output, day or night
3.4.22.	Rhythmic Character in emergency mode		Quick 1s (.5)
3.4.23.	Emergency Mode if input voltage is <b>12 Vdc</b>	Start emergency mode	11.5 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	9 Vdc
		Lantern back to the operational mode	12 Vdc
	Emergency Mode if input voltage is <b>24 Vdc</b>	Start emergency mode	23 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	19 Vdc
		Lantern back to the operational mode	24 Vdc
3.4.24.	Communication port	Required	A communication port, such as a serial interface, infrared device or other, used for external diagnostics, programming, and alarm outputs is required. A system built into the lantern is preferred, i.e. no external hardware or components to install or maintain.
3.4.25.	Height	Maximum	600 mm (including base adaptor)
3.4.26.	Weight	Maximum	15 kg (including base adaptor)
3.4.27.	Markings	Required	The Lantern shall be identified with the following information, on a name plate and always visible. Permanently engraved or chemically printed <ol style="list-style-type: none"> <li>1. Manufacturer Name</li> <li>2. Date of Manufacturing</li> <li>3. Model Number</li> <li>4. Serial number</li> <li>5. Rated Voltage/Amperage</li> </ol> All markings shall be legible for the entire lantern service life.
3.4.28.	Mounting	A bolting circle drawing must be provided as a proof of compliance. Provide a drawing.	The base of the unit shall either be equipped with the two bolting patterns, as follows (preferred option): <ol style="list-style-type: none"> <li>1. Four (4) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200mm diameter bolt circle; and,</li> <li>2. Three (3) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200 mm diameter bolt circle.</li> </ol>

ID	Specification Description	Requirement or Value
		Or, be supplied with an adapter plate with the requisite two bolting patterns described above (less desirable option). Note, bolt holes must be located directly in the base of the unit with an access to both sides.
3.4.29.	Bird deterrent	Required  The lantern shall have an effective means of restricting the ability of birds to roost on the lantern. Minimum 150 mm length.
3.4.30.	Sighting scope	Required on delivery  Sighting scope or any components for the horizontal adjustment of the light beam shall be provided
3.4.31.	Photometric curves	Required on delivery  The photometric curves shall be provided
3.4.32.	Service Life	Minimum  10 years, based on year-round operation
3.4.33.	Mean Time Between Failures (MTBF)	Minimum  5 years, based on year-round operation
3.4.34.	Warranty	Minimum  Full 5-year warranty including parts, labor and shipping
3.4.35.	Operating Temperature	Minimum Range  -40°C to +55°C
3.4.36.	Wind	Speed  Up to 160 km/hour minimum
3.4.37.	Ice accumulation	Thickness  Up to 40 mm minimum
3.4.38.	Dry Heat	  IEC 60945 Edition 4 – Section 8.2
3.4.39.	Damp Heat	  IEC 60945 Edition 4 – Section 8.3
3.4.40.	Vibration	  IEC 60945 Edition 4 – Section 8.7
3.4.41.	Rain and spray	  IEC 60945 Edition 4 – Section 8.8
3.4.42.	Solar Radiation	  IEC 60945 Edition 4 – Section 8.10
3.4.43.	Corrosive Conditions	  IEC 60945 Edition 4 – Section 8.12
3.4.44.	Immersion	Minimum  IP 66
3.4.45.	Electromagnetic interference protection	  From VHF radio, radar, static discharges and inducted, transient voltage from lightning strikes.
3.4.46.	Programming/hardware	Required on delivery  A software and hardware and remote control shall be provided with the lantern.
3.4.47.	User manuals	Required on delivery  User/programming and installation manuals shall be provided with the lantern.
3.4.48.	Maintenance schedule	Required on delivery  A maintenance schedule shall be provided
3.4.49.	Spare parts list	Required on delivery  A spare parts list shall be provided
3.4.50.	Original LED lantern design	  The lantern must not be a previous lantern version with bulbs converted to LED.

**Table 3.5- Technical specification – Île Ste-Thérèse (Range)**

ID	Specification Description	Requirement or Value
3.5.1.	Recommendation IALA, Guideline December 2008	E-200 series

ID	Specification Description		Requirement or Value
3.5.2.	Recommendation IALA Guideline , Rhythmic Characters, June 2012		E-110
3.5.3.	Recommendation IHO, Standardization of list of lights and fog signals, June 2004		
3.5.4.	Lantern Type	Range Light	The assembly of two lanterns and more per site <b><u>will not be accepted.</u></b>
3.5.5.	Quantity		3
3.5.6.	System power consumption (Watt)	The bidder must provide the max power consumption of the proposed system (including all electronic components).	Power consumption will be compared to the other subjected products. The product offering the lowest ratio Watt/Candelas will have the best notes. See an example in Table section 3.5.6 Annex C
3.5.7.	Color		Green
3.5.8.	Bulb type		LED
3.5.9.	Rhythmic character		Fixe
3.5.10.	Period of annual operation		Annual
3.5.11.	Period of daily operation		24 h/day
3.5.12.	Input voltage		12 Vdc <b><u>or</u></b> 24Vdc
3.5.13.	Synchronisation	Any kind of synchronisation system	Yes
3.5.14.	Candelas (Cd) at Day	Min	6000
3.5.15.	Candelas (Cd) at Night	Max	6000
3.5.16.	Vertical divergence ( ° )	Min	3°
3.5.17.	Horizontal divergence ( ° )	Min @ 50% of max candelas	12°
3.5.18.	Horizontal divergence ( ° )	Min @ 10% of max candelas	20°
3.5.19.	Emergency Mode		Yes
3.5.20.	Candelas reduction in emergency mode		50% of the max candelas output, day or night
3.5.21.	Rhythmic Character in emergency mode		Quick 1s (.5)
3.5.22.	Emergency Mode if input voltage is <b><u>12 Vdc</u></b>	Start emergency mode	11.5 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	9 Vdc
		Lantern back to the operational mode	12 Vdc
	Emergency Mode if input voltage is <b><u>24 Vdc</u></b>	Start emergency mode	23 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	19 Vdc
		Lantern back to the operational mode	24 Vdc
3.5.23.	Communication port	Required	A communication port, such as a serial interface, infrared device or other, used for

ID	Specification Description		Requirement or Value
			external diagnostics, programming, and alarm outputs is required. A system built into the lantern is preferred, i.e. no external hardware or components to install or maintain.
3.5.24.	Height	Maximum	600 mm (including base adaptor)
3.5.25.	Weight	Maximum	15 kg (including base adaptor)
3.5.26.	Markings	Required	The Lantern shall be identified with the following information, on a name plate and always visible. Permanently engraved or chemically printed <ol style="list-style-type: none"> <li>1. Manufacturer Name</li> <li>2. Date of Manufacturing</li> <li>3. Model Number</li> <li>4. Serial number</li> <li>5. Rated Voltage/Amperage</li> </ol> All markings shall be legible for the entire lantern service life.
3.5.27.	Mounting	A bolting circle drawing must be provided as a proof of compliance. Provide a drawing.	The base of the unit shall either be equipped with the two bolting patterns, as follows (preferred option): <ol style="list-style-type: none"> <li>1. Four (4) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200mm diameter bolt circle</li> <li>2. Three (3) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200 mm diameter bolt circle.</li> </ol> Or, be supplied with an adapter plate with the requisite two bolting patterns described above (less desirable option). Note, bolt holes must be located directly in the base of the unit with an access to both sides.
3.5.28.	Bird deterrent	Required	The lantern shall have an effective means of restricting the ability of birds to roost on the lantern. Minimum 150 mm length.
3.5.29.	Sighting scope	Required on delivery	Sighting scope or any components for the horizontal adjustment of the light beam shall be provided
3.5.30.	Photometric curves	Required on delivery	The photometric curves shall be provided
3.5.31.	Service Life	Minimum	10 years, based on year-round operation
3.5.32.	Mean Time Between Failures (MTBF)	Minimum	5 years, based on year-round operation
3.5.33.	Warranty	Minimum	Full 5-year warranty including parts, labor and shipping
3.5.34.	Operating Temperature	Minimum Range	-40°C to +55°C
3.5.35.	Wind	Speed	Up to 160 km/hour minimum
3.5.36.	Ice accumulation	Thickness	Up to 40 mm minimum
3.5.37.	Dry Heat		IEC 60945 Edition 4 – Section 8.2

ID	Specification Description		Requirement or Value
3.5.38.	Damp Heat		IEC 60945 Edition 4 – Section 8.3
3.5.39.	Vibration		IEC 60945 Edition 4 – Section 8.7
3.5.40.	Rain and spray		IEC 60945 Edition 4 – Section 8.8
3.5.41.	Solar Radiation		IEC 60945 Edition 4 – Section 8.10
3.5.42.	Corrosive Conditions		IEC 60945 Edition 4 – Section 8.12
3.5.43.	Immersion	Minimum	IP 66
3.5.44.	Electromagnetic interference protection		From VHF radio, radar, static discharges and inducted, transient voltage from lightning strikes.
3.5.45.	Programming/hardware	Required on delivery	A software and hardware and remote control shall be provided with the lantern.
3.5.46.	User manuals	Required on delivery	User/programing and installation manuals shall be provided with the lantern.
3.5.47.	Maintenance schedule	Required on delivery	A maintenance schedule shall be provided
3.5.48.	Spare parts list	Required on delivery	A spare parts list shall be provided
3.5.49.	Original LED lantern design		The lantern must not be a previous lantern version with bulbs converted to LED.

**Table 3.6- Technical specification – Rimouski**

ID	Specification Description		Requirement or Value
3.6.1.	Recommendation IALA, Guideline December 2008		E-200 series
3.6.2.	Recommendation IALA Guideline , Rhythmic Characters, June 2012		E-110
3.6.3.	Recommendation IHO, Standardization of list of lights and fog signals, June 2004		
3.6.4.	Lantern Type	Range Light	An assembly of two lanterns and more per site <b><u>will not be accepted.</u></b>
3.6.5.	Quantity		3
3.6.6.	System power consumption (Watt)	The bidder must provide the max power consumption of the proposed system (including all electronic components).	Power consumption will be compared to the other subjected products. The product offering the lowest ratio Watt/Candelas will have the best notes. See an example in Table section 3.6.6 Annex C
3.6.7.	Color		Red
3.6.8.	Bulb type		LED
3.6.9.	Rhythmic Character	Time ON	1 sec
3.6.10.		Time OFF	1 sec
3.6.11.	Period of daily operation		24h / day
3.6.12.	Period of annual operation		Annual
3.6.13.	Input voltage		12 Vdc <b>or</b> 24Vdc
3.6.14.	Synchronisation	Any kind of synchronisation system	Yes

ID	Specification Description		Requirement or Value
3.6.15.	Candelas reduction at night	Yes	The Candelas must be automatically adjusted to the setting point identified at the item 3.6.16, whenever the ambient illumination, measured on a horizontal plane, falls below 75 lux $\pm$ 25 lux.
3.6.16.	Candelas (Cd) at day	Min	160 000
3.6.17.	Candelas (Cd) at night	Max	13 800
3.6.18.	Vertical divergence ( ° )	Min	3°
3.6.19.	Horizontal divergence ( ° )	Min @ 50% of max candelas	8°
3.6.20.	Horizontal divergence ( ° )	Min @ 10% of max candelas	12°
3.6.21.	Emergency Mode		Yes
3.6.22.	Candelas reduction in emergency mode		50% of the max candelas output, day or night
3.6.23.	Rhythmic Character in emergency mode		Quick 1s (.5)
3.6.24.	Emergency Mode if input voltage is <b>12 Vdc</b>	Start emergency mode	11.5 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	9 Vdc
		Lantern back to the operational mode	12 Vdc
	Emergency Mode if input voltage is <b>24 Vdc</b>	Start emergency mode	23 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	19 Vdc
		Lantern back to the operational mode	24 Vdc
3.6.25.	Communication port	Required	A communication port, such as a serial interface, infrared device or other, used for external diagnostics, programming, and alarm outputs is required. A system built into the lantern is preferred, i.e. no external hardware or components to install or maintain.
3.6.26.	Height	Maximum	600 mm (including base adaptor)
3.6.27.	Weight	Maximum	15 kg (including base adaptor)
3.6.28.	Markings	Required	The Lantern shall be identified with the following information, on a name plate and always visible. Permanently engraved or chemically printed <ol style="list-style-type: none"> <li>1. Manufacturer Name</li> <li>2. Date of Manufacturing</li> <li>3. Model Number</li> <li>4. Serial number</li> <li>5. Rated Voltage/Amperage</li> </ol> All markings shall be legible for the entire lantern service life.

ID	Specification Description		Requirement or Value
3.6.29.	Mounting	A bolting circle drawing must be provided as a proof of compliance. Provide a drawing.	The base of the unit shall either be equipped with the two bolting patterns, as follows (preferred option): <ol style="list-style-type: none"> <li>Four (4) x 16mm <math>\pm</math> 1mm diameter bolt holes, equally spaced on a 200mm diameter bolt circle</li> <li>Three (3) x 16mm <math>\pm</math> 1mm diameter bolt holes, equally spaced on a 200 mm diameter bolt circle.</li> </ol> Or, be supplied with an adapter plate with the requisite two bolting patterns described above (less desirable option). Note, bolt holes must be located directly in the base of the unit with an access to both sides.
3.6.30.	Bird deterrent	Required	The lantern shall have an effective means of restricting the ability of birds to roost on the lantern. Minimum 150 mm length.
3.6.31.	Sighting scope	Required on delivery	Sighting scope or any components for the horizontal adjustment of the light beam shall be provided
3.6.32.	Photometric curves	Required on delivery	The photometric curves shall be provided
3.6.33.	Service Life	Minimum	10 years, based on year-round operation
3.6.34.	Mean Time Between Failures (MTBF)	Minimum	5 years, based on year-round operation
3.6.35.	Warranty	Minimum	Full 5-year warranty including parts, labor and shipping
3.6.36.	Operating Temperature	Minimum Range	-40°C to +55°C
3.6.37.	Wind	Speed	Up to 160 km/hour minimum
3.6.38.	Ice accumulation	Thickness	Up to 40 mm minimum
3.6.39.	Dry Heat		IEC 60945 Edition 4 – Section 8.2
3.6.40.	Damp Heat		IEC 60945 Edition 4 – Section 8.3
3.6.41.	Vibration		IEC 60945 Edition 4 – Section 8.7
3.6.42.	Rain and spray		IEC 60945 Edition 4 – Section 8.8
3.6.43.	Solar Radiation		IEC 60945 Edition 4 – Section 8.10
3.6.44.	Corrosive Conditions		IEC 60945 Edition 4 – Section 8.12
3.6.45.	Immersion	Minimum	IP 66
3.6.46.	Electromagnetic interference protection		From VHF radio, radar, static discharges and inducted, transient voltage from lightning strikes.
3.6.47.	Programming/hardware	Required on delivery	A software and hardware and remote control shall be provided with the lantern.
3.6.48.	User manuals	Required on delivery	User/programming and installation manuals shall be provided with the lantern.
3.6.49.	Maintenance schedule	Required on delivery	A maintenance schedule shall be provided
3.6.50.	Spare parts list	Required on delivery	A spare parts list shall be provided

ID	Specification Description	Requirement or Value
3.6.51.	Original LED lantern design	The lantern must not be a previous lantern version with bulbs converted to LED.

**Table 3.7- Technical specification – Traverse Longue Pointe**

ID	Specification Description	Requirement or Value
3.7.1.	Recommendation IALA, Guideline December 2008	E-200 series
3.7.2.	Recommendation IALA Guideline , Rhythmic Characters, June 2012	E-110
3.7.3.	Recommendation IHO, Standardization of list of lights and fog signals, June 2004	
3.7.4.	Lantern Type	Range Light
3.7.5.	Quantity	3
3.7.6.	System power consumption (Watt)	The bidder must provide the max power consumption of the proposed system (including all electronic components). Power consumption will be compared to the other subjected products. The product offering the lowest ratio Watt/Candelas will have the best notes. See an example in Table section 3.7.6 Annex C
3.7.7.	Color	Green
3.7.8.	Bulb type	LED
3.7.9.	Rhythmic Character	Time ON
3.7.10.		Time OFF
3.7.11.	Period of annual operation	Annual
3.7.12.	Period of daily operation	24h / day
3.7.13.	Input voltage	12 Vdc <u>or</u> 24Vdc
3.7.14.	Synchronisation	Any kind of synchronisation system
3.7.15.	Candelas reduction at night	Yes
3.7.16.	Candelas (Cd) at day	Min
3.7.17.	Candelas (Cd) at night	Max
3.7.18.	Vertical divergence ( ° )	Min
3.7.19.	Horizontal divergence ( ° )	Min @ 50% of max candelas
3.7.20.	Horizontal divergence ( ° )	Min @ 10% of max candelas
3.7.21.	Emergency Mode	Yes
3.7.22.	Candelas reduction in emergency mode	50% of the max candelas output, day or night
3.7.23.	Rhythmic Character in emergency mode	Quick 1s (.5)



ID	Specification Description		Requirement or Value
3.7.24.	Emergency Mode if input voltage is <b>12 Vdc</b>	Start emergency mode	11.5 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	9 Vdc
		Lantern back to the operational mode	12 Vdc
	Emergency Mode if input voltage is <b>24 Vdc</b>	Start emergency mode	23 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	19 Vdc
		Lantern back to the operational mode	24 Vdc
3.7.25.	Communication port	Required	A communication port, such as a serial interface, infrared device or other, used for external diagnostics, programming, and alarm outputs is required. A system built into the lantern is preferred, i.e. no external hardware or components to install or maintain.
3.7.26.	Height	Maximum	600 mm (including base adaptor)
3.7.27.	Weight	Maximum	15 kg (including base adaptor)
3.7.28.	Markings	Required	The Lantern shall be identified with the following information, on a name plate and always visible. Permanently engraved or chemically printed <ol style="list-style-type: none"> <li>1. Manufacturer Name</li> <li>2. Date of Manufacturing</li> <li>3. Model Number</li> <li>4. Serial number</li> <li>5. Rated Voltage/Amperage</li> </ol> All markings shall be legible for the entire lantern service life.
3.7.29.	Mounting	A bolting circle drawing must be provided as a proof of compliance. Provide a drawing.	The base of the unit shall either be equipped with the two bolting patterns, as follows (preferred option): <ol style="list-style-type: none"> <li>1. Four (4) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200mm diameter bolt circle;</li> <li>2. Three (3) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200 mm diameter bolt circle.</li> </ol> Or, be supplied with an adapter plate with the requisite two bolting patterns described above (less desirable option). Note, bolt holes must be located directly in the base of the unit with an access to both sides.
3.7.30.	Bird deterrent	Required	The lantern shall have an effective means of restricting the ability of birds to roost on the lantern. Minimum 150 mm length.
3.7.31.	Sighting scope	Required on delivery	Sighting scope or any components for the horizontal adjustment of the light beam shall be provided

ID	Specification Description		Requirement or Value
3.7.32.	Photometric curves	Required on delivery	The photometric curves shall be provided
3.7.33.	Service Life	Minimum	10 years, based on year-round operation
3.7.34.	Mean Time Between Failures (MTBF)	Minimum	5 years, based on year-round operation
3.7.35.	Warranty	Minimum	Full 5-year warranty including parts, labor and shipping
3.7.36.	Operating Temperature	Minimum Range	-40°C to +55°C
3.7.37.	Wind	Speed	Up to 160 km/hour minimum
3.7.38.	Ice accumulation	Thickness	Up to 40 mm minimum
3.7.39.	Dry Heat		IEC 60945 Edition 4 – Section 8.2
3.7.40.	Damp Heat		IEC 60945 Edition 4 – Section 8.3
3.7.41.	Vibration		IEC 60945 Edition 4 – Section 8.7
3.7.42.	Rain and spray		IEC 60945 Edition 4 – Section 8.8
3.7.43.	Solar Radiation		IEC 60945 Edition 4 – Section 8.10
3.7.44.	Corrosive Conditions		IEC 60945 Edition 4 – Section 8.12
3.7.45.	Immersion	Minimum	IP 66
3.7.46.	Electromagnetic interference protection		From VHF radio, radar, static discharges and inducted, transient voltage from lightning strikes.
3.7.47.	Programming/hardware	Required on delivery	A software and hardware and remote control shall be provided with the lantern.
3.7.48.	User manuals	Required on delivery	User/programming and installation manuals shall be provided with the lantern.
3.7.49.	Maintenance schedule	Required on delivery	A maintenance schedule shall be provided
3.7.50.	Spare parts list	Required on delivery	A spare parts list shall be provided
3.7.51.	Original LED lantern design		The lantern must not be a previous lantern version with bulbs converted to LED.

**Table 3.8- Technical specification – Pointe du Lac**

ID	Specification Description		Requirement or Value
3.8.1.	Recommendation IALA, Guideline December 2008		E-200 series
3.8.2.	Recommendation IALA Guideline , Rhythmic Characters, June 2012		E-110
3.8.3.	Recommendation IHO, Standardization of list of lights and fog signals, June 2004		
3.8.4.	Lantern Type	Range Light	An assembly of two lanterns and more per site <b><u>will not be accepted</u></b>
3.8.5.	Quantity		3
3.8.6.	System power consumption (Watt)	The bidder must provide the max power consumption of the proposed system (including all electronic components).	Power consumption will be compared to the other subjected products. The product offering the lowest ratio Watt/Candelas will have the best notes. See an example in Table section 3.8.6 Annex C

ID	Specification Description		Requirement or Value
3.8.7.	Color		Green
3.8.8.	Bulb type		LED
3.8.9.	Rhythmic Character		Fixe
3.8.10.	Period of annual operation		Annual
3.8.11.	Period of daily operation		Night
3.8.12.	Input voltage		12 Vdc <u>or</u> 24Vdc
3.8.13.	Synchronisation	Any kind of synchronisation system	Yes
3.8.14.	Candelas (Cd) at night	Max	12 500
3.8.15.	Vertical divergence ( ° )	Min	3°
3.8.16.	Horizontal divergence ( ° )	Min @ 50% of max candelas	20°
3.8.17.	Horizontal divergence ( ° )	Min @ 10% of max candelas	24°
3.8.18.	Emergency Mode		Yes
3.8.19.	Candelas reduction in emergency mode		50% of the max candelas output, day or night
3.8.20.	Rhythmic Character in emergency mode		Quick 1s (.5)
3.8.21.	Emergency Mode if input voltage is <u>12 Vdc</u>	Start emergency mode	11.5 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	9 Vdc
		Lantern back to the operational mode	12 Vdc
	Emergency Mode if input voltage is <u>24 Vdc</u>	Start emergency mode	23 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	19 Vdc
		Lantern back to the operational mode	24 Vdc
3.8.22.	Communication port	Required	A communication port, such as a serial interface, infrared device or other, used for external diagnostics, programming, and alarm outputs is required.  A system built into the lantern is preferred, i.e. no external hardware or components to install or maintain.
3.8.23.	Height	Maximum	600 mm (including base adaptor)
3.8.24.	Weight	Maximum	15 kg (including base adaptor)
3.8.25.	Markings	Required	The Lantern shall be identified with the following information, on a name plate and always visible. Permanently engraved or chemically printed <ol style="list-style-type: none"> <li>1. Manufacturer Name</li> <li>2. Date of Manufacturing</li> <li>3. Model Number</li> <li>4. Serial number</li> </ol>

ID	Specification Description		Requirement or Value
			5. Rated Voltage/Amperage All markings shall be legible for the entire lantern service life.
3.8.26.	Mounting	A bolting circle drawing must be provided as a proof of compliance. Provide a drawing.	The base of the unit shall either be equipped with the two bolting patterns, as follows (preferred option): <ol style="list-style-type: none"> <li>Four (4) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200mm diameter bolt circle; and,</li> <li>Three (3) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200 mm diameter bolt circle.</li> </ol> Or, be supplied with an adapter plate with the requisite two bolting patterns described above (less desirable option). Note, bolt holes must be located directly in the base of the unit with an access to both sides.
3.8.27.	Bird deterrent	Required	The lantern shall have an effective means of restricting the ability of birds to roost on the lantern. Minimum 150 mm length.
3.8.28.	Sighting scope	Required on delivery	Sighting scope or any components for the horizontal adjustment of the light beam shall be provided
3.8.29.	Photometric curves	Required on delivery	The photometric curves shall be provided
3.8.30.	Service Life	Minimum	10 years, based on year-round operation
3.8.31.	Mean Time Between Failures (MTBF)	Minimum	5 years, based on year-round operation
3.8.32.	Warranty	Minimum	Full 5-year warranty including parts, labor and shipping
3.8.33.	Operating Temperature	Minimum Range	-40°C to +55°C
3.8.34.	Wind	Speed	Up to 160 km/hour minimum
3.8.35.	Ice accumulation	Thickness	Up to 40 mm minimum
3.8.36.	Dry Heat		IEC 60945 Edition 4 – Section 8.2
3.8.37.	Damp Heat		IEC 60945 Edition 4 – Section 8.3
3.8.38.	Vibration		IEC 60945 Edition 4 – Section 8.7
3.8.39.	Rain and spray		IEC 60945 Edition 4 – Section 8.8
3.8.40.	Solar Radiation		IEC 60945 Edition 4 – Section 8.10
3.8.41.	Corrosive Conditions		IEC 60945 Edition 4 – Section 8.12
3.8.42.	Immersion	Minimum	IP 66
3.8.43.	Electromagnetic interference protection		From VHF radio, radar, static discharges and inducted, transient voltage from lightning strikes.
3.8.44.	Programming/hardware	Required on delivery	A software and hardware and remote control shall be provided with the lantern.
3.8.45.	User manuals	Required on delivery	User/programming and installation manuals shall be provided with the lantern.

ID	Specification Description	Requirement or Value
3.8.46.	Maintenance schedule	Required on delivery A maintenance schedule shall be provided
3.8.47.	Spare parts list	Required on delivery A spare parts list shall be provided
3.8.48.	Original LED lantern design	The lantern must not be a previous lantern version with bulbs converted to LED.

**Table 3.9- Technical specification – Île du Moine**

ID	Specification Description	Requirement or Value
3.9.1.	Recommendation IALA, Guideline December 2008	E-200 series
3.9.2.	Recommendation IALA Guideline , Rhythmic Characters, June 2012	E-110
3.9.3.	Recommendation IHO, Standardization of list of lights and fog signals, June 2004	
3.9.4.	Lantern Type	Range Light An assembly of two lanterns and more per site <b><u>will not be accepted.</u></b>
3.9.5.	Quantity	3
3.9.6.	System power consumption (Watt)	The bidder must provide the max power consumption of the proposed system (including all electronic components). Power consumption will be compared to the other subjected products. The product offering the ratio Watt/Candelas will have the best notes. See an example in Table section 3.9.6 Annex C
3.9.7.	Color	Green
3.9.8.	Bulb type	LED
3.9.9.	Rhythmic Character	Fixe
3.9.10.	Period of annual operation	Annual
3.9.11.	Period of daily operation	Night
3.9.12.	Input voltage	12 Vdc <b><u>or</u></b> 24Vdc
3.9.13.	Synchronisation	Any kind of synchronisation system Yes
3.9.14.	Candelas (Cd) at night	Max 12 000
3.9.15.	Vertical divergence ( ° )	Min 2°
3.9.16.	Horizontal divergence ( ° )	Min @ 50% of max candelas 6°
3.9.17.	Horizontal divergence ( ° )	Min @ 10% of max candelas 12°
3.9.18.	Emergency Mode	Yes
3.9.19.	Candelas reduction in emergency mode	50% of the max candelas output, day or night
3.9.20.	Rhythmic Character in emergency mode	Quick 1s (.5)
3.9.21.	Emergency Mode if input voltage is <b><u>12 Vdc</u></b>	Start emergency mode 11.5 Vdc
		Lantern turns in sleeping mode (LEDs turn off) 9 Vdc

ID	Specification Description		Requirement or Value
	Emergency Mode if input voltage is <b>24 Vdc</b>	Lantern back to the operational mode	12 Vdc
		Start emergency mode	23 Vdc
		Lantern turns in sleeping mode (LEDs turn off)	19 Vdc
		Lantern back to the operational mode	24 Vdc
3.9.22.	Communication port	Required	A communication port, such as a serial interface, infrared device or other, used for external diagnostics, programming, and alarm outputs is required. A system built into the lantern is preferred, i.e. no external hardware or components to install or maintain.
3.9.23.	Height	Maximum	600 mm (including base adaptor)
3.9.24.	Weight	Maximum	15 kg (including base adaptor)
3.9.25.	Markings	Required	The Lantern shall be identified with the following information, on a name plate and always visible. Permanently engraved or chemically printed <ol style="list-style-type: none"> <li>1. Manufacturer Name</li> <li>2. Date of Manufacturing</li> <li>3. Model Number</li> <li>4. Serial number</li> <li>5. Rated Voltage/Amperage</li> </ol> All markings shall be legible for the entire lantern service life.
3.9.26.	Mounting	A bolting circle drawing must be provided as a proof of compliance. Provide a drawing.	The base of the unit shall either be equipped with the two bolting patterns, as follows (preferred option): <ol style="list-style-type: none"> <li>1. Four (4) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200mm diameter bolt circle</li> <li>2. Three (3) x 16mm ± 1mm diameter bolt holes, equally spaced on a 200 mm diameter bolt circle.</li> </ol> Or, be supplied with an adapter plate with the requisite two bolting patterns described above (less desirable option). Note, bolt holes must be located directly in the base of the unit with an access to both sides.
3.9.27.	Bird deterrent	Required	The lantern shall have an effective means of restricting the ability of birds to roost on the lantern. Minimum 150 mm length.
3.9.28.	Sighting scope	Required on delivery	Sighting scope or any components for the horizontal adjustment of the light beam shall be provided
3.9.29.	Photometric curves	Required on delivery	The photometric curves shall be provided
3.9.30.	Service Life	Minimum	10 years, based on year-round operation

ID	Specification Description		Requirement or Value
3.9.31.	Mean Time Between Failures (MTBF)	Minimum	5 years, based on year-round operation
3.9.32.	Warranty	Minimum	Full 5-year warranty including parts, labor and shipping
3.9.33.	Operating Temperature	Minimum Range	-40°C to +55°C
3.9.34.	Wind	Speed	Up to 160 km/hour minimum
3.9.35.	Ice accumulation	Thickness	Up to 40 mm minimum
3.9.36.	Dry Heat		IEC 60945 Edition 4 – Section 8.2
3.9.37.	Damp Heat		IEC 60945 Edition 4 – Section 8.3
3.9.38.	Vibration		IEC 60945 Edition 4 – Section 8.7
3.9.39.	Rain and spray		IEC 60945 Edition 4 – Section 8.8
3.9.40.	Solar Radiation		IEC 60945 Edition 4 – Section 8.10
3.9.41.	Corrosive Conditions		IEC 60945 Edition 4 – Section 8.12
3.9.42.	Immersion	Minimum	IP 66
3.9.43.	Electromagnetic interference protection		From VHF radio, radar, static discharges and inducted, transient voltage from lightning strikes.
3.9.44.	Programming/hardware	Required on delivery	A software and hardware and remote control shall be provided with the lantern.
3.9.45.	User manuals	Required on delivery	User/programming and installation manuals shall be provided with the lantern.
3.9.46.	Maintenance schedule	Required on delivery	A maintenance schedule shall be provided
3.9.47.	Spare parts list	Required on delivery	A spare parts list shall be provided
3.9.48.	Original LED lantern design		The lantern must not be a previous lantern version with bulbs converted to LED.

#### 4. SITES INFORMATION

Table 4-1 : Site Information Île Mermettes

ID	Site Description		Requirement or Value
4.1.1	Site Name	Île Mermettes	LDF 1539.13
4.1.2	Latitude		45° 41' 6.8233" N
4.1.3	Longitude		73° 27' 32.68" W
4.1.4	Region	C&A	St-Lawrence area (Quebec)

**Table 4-2: Site Information Île Ste-Thérèse**

ID	Site Description		Requirement or Value
4.2.1	Site Name	Île Ste-Thérèse	LDF 2335.1
4.2.2	Latitude		46° 16' 16,496" N
4.2.3	Longitude		72° 37' 10,896" W
4.2.4	Region	C&A	St-Lawrence area (Quebec)

**Table 4-3: Site Information Sainte-Anne-des-Monts**

ID	Site Description		Requirement or Value
4.3.1	Site Name	Sainte-Anne-des-Monts	LDF 1683
4.3.2	Latitude		49° 08' 6,076" N
4.3.3	Longitude		66° 29' 4,945" W
4.3.4	Region	C&A	St-Lawrence area (Quebec)

**Table 4-4: Site Information Pointe Penouille**

ID	Site Description		Requirement or Value
4.4.1	Site Name	Pointe Penouille	LDF 1419.6 and 1419.7
4.4.2	Latitude		48° 51' 7,339" N
4.4.3	Longitude		64° 25' 27,381" W
4.4.4	Region	C&A	St-Lawrence area (Quebec)

**Table 4-5: Site Information Île Ste-Thérèse**

ID	Site Description		Requirement or Value
4.5.1	Site Name	Range Île Ste-Thérèse	LDF 2335 and 2336
4.5.2	Latitude		45° 41' 6,8233" N
4.5.3	Longitude		73° 27' 32,68" W
4.5.4	Region	C&A	St-Lawrence area (Quebec)



**Table 4-6: Site Information Rimouski**

ID	Site Description		Requirement or Value
4.6.1	Site Name	Rimouski	LDF 1734 and 1735
4.6.2	Latitude		48° 28' 5,9690" N
4.6.3	Longitude		68° 31' 6,0910" W
4.6.4	Region	C&A	St-Lawrence area (Quebec)

**Table 4-7: Site Information Longue Pointe**

ID	Site Description		Requirement or Value
4.7.1	Site Name	Longue Pointe	LDF 2361 and 2362
4.7.2	Latitude		45° 33' 42,5340" N
4.7.3	Longitude		73° 29' 41,2660" W
4.7.4	Region	C&A	St-Lawrence area (Quebec)

**Table 4-8: Site Information Pointe du lac**

ID	Site Description		Requirement or Value
4.8.1	Site Name	Pointe du lac	LDF 2125 and 2126
4.8.2	Latitude		46° 16' 5,4849" N
4.8.3	Longitude		72° 41' 43,2414" W
4.8.4	Region	C&A	St-Lawrence area (Quebec)

**Table 4-9: Site Information Île du Moine**

ID	Site Description		Requirement or Value
4.9.1	Site Name	Pointe du lac	LDF 2180 and 2181
4.9.2	Latitude		46° 3' 58,2940" N
4.9.3	Longitude		73° 1' 29,6690" W
4.9.4	Region	C&A	St-Lawrence area (Quebec)

## **5.1 Material**

All the lanterns for each sites chosen.

## **5.2 Documentation / Software**

The following requirements shall be met with respect to the format, quantity and frequency of the documents provided and the software used for that purpose. The documents must be of commercial quality.

CCG will not accept faxed documents. Manufacturers must provide the following information in French and English. Preferably, the software must be provided in its original language (English or French) accompanied with a translated document. Documents in electronic format must be provided in Microsoft Word or PDF format.

### **5.2.1 Instructions for Installation and Operation**

Quantity :	Three hard copies.
Frequency :	Upon delivery.
Data Support :	Disk (CD or DVD), USB key or hard copy (8,5 po x 11 po) The type of media will be chosen at contract award.

### **5.2.2 Manual and maintenance plan**

Quantity :	Three hard copies.
Frequency :	Upon delivery.
Data Support :	Disk (CD or DVD), USB key or hard copy (8,5 po x 11 po) The type of media will be chosen at contract award.

### **5.2.3 Bolting Circle Drawings**

A bolting circle drawing must be provided as requested in Annex A.

### **5.2.4 List of Spare Parts**

A list of spare parts shall be provided with upon delivery. It shall list all repairable items, consumables and the quantities required to maintain the lights throughout their life cycle.

### **5.2.5 Software**

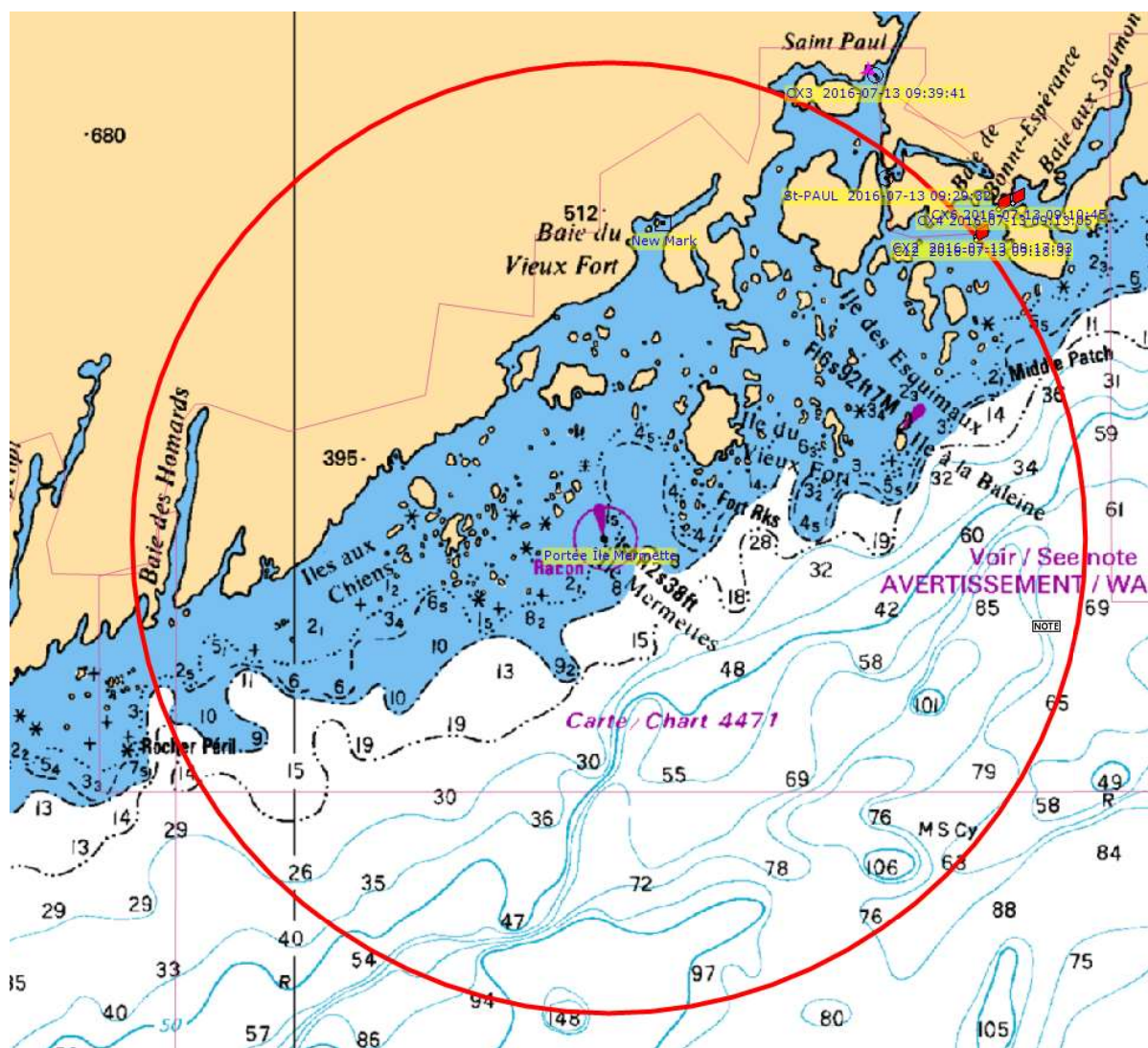
Software and instructional materials, as specified shall be included in the delivery of the navigation lights. One for each lantern.

### **5.2.6 Deliverables Acceptance**

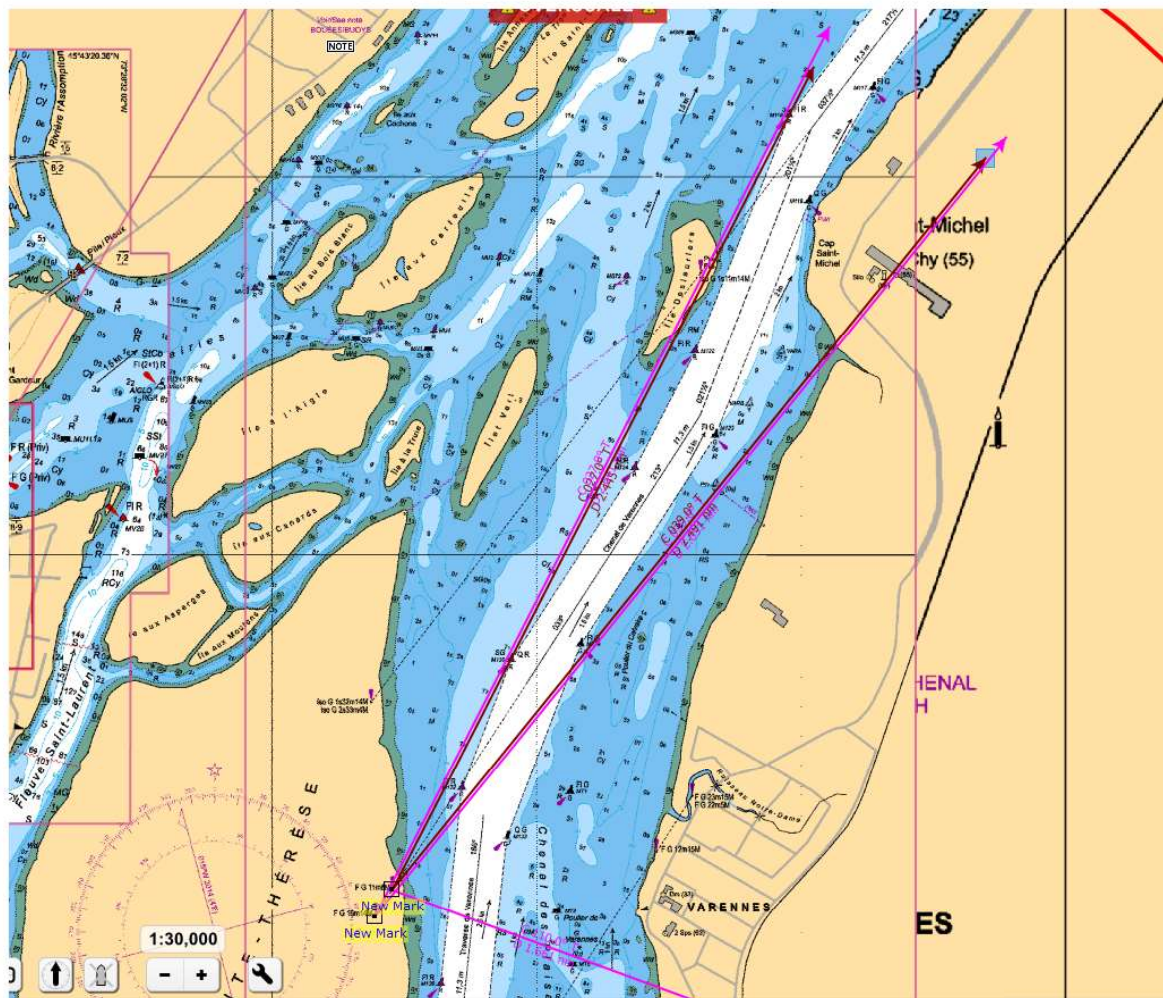
The CCG reserves the right to refuse, on delivery, any product that does not meet the required technical specifications.

The CCG also reserves the right to have the photometric performance of the products evaluated by an independent laboratory and refuse them if they do not correspond to the performances announced by the tenderer

Figure 1 - LAYOUT ÎLE MERMETTES

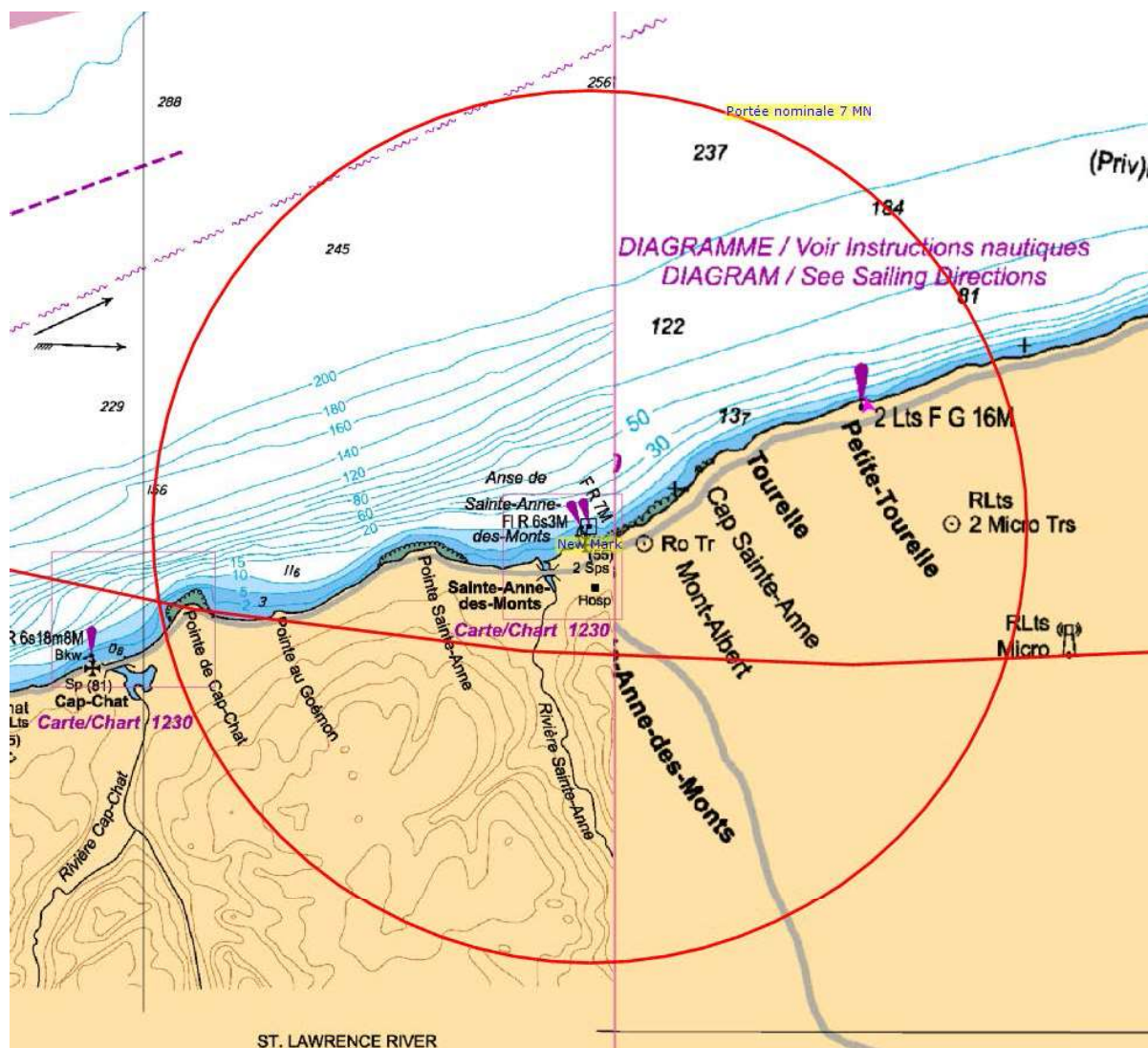


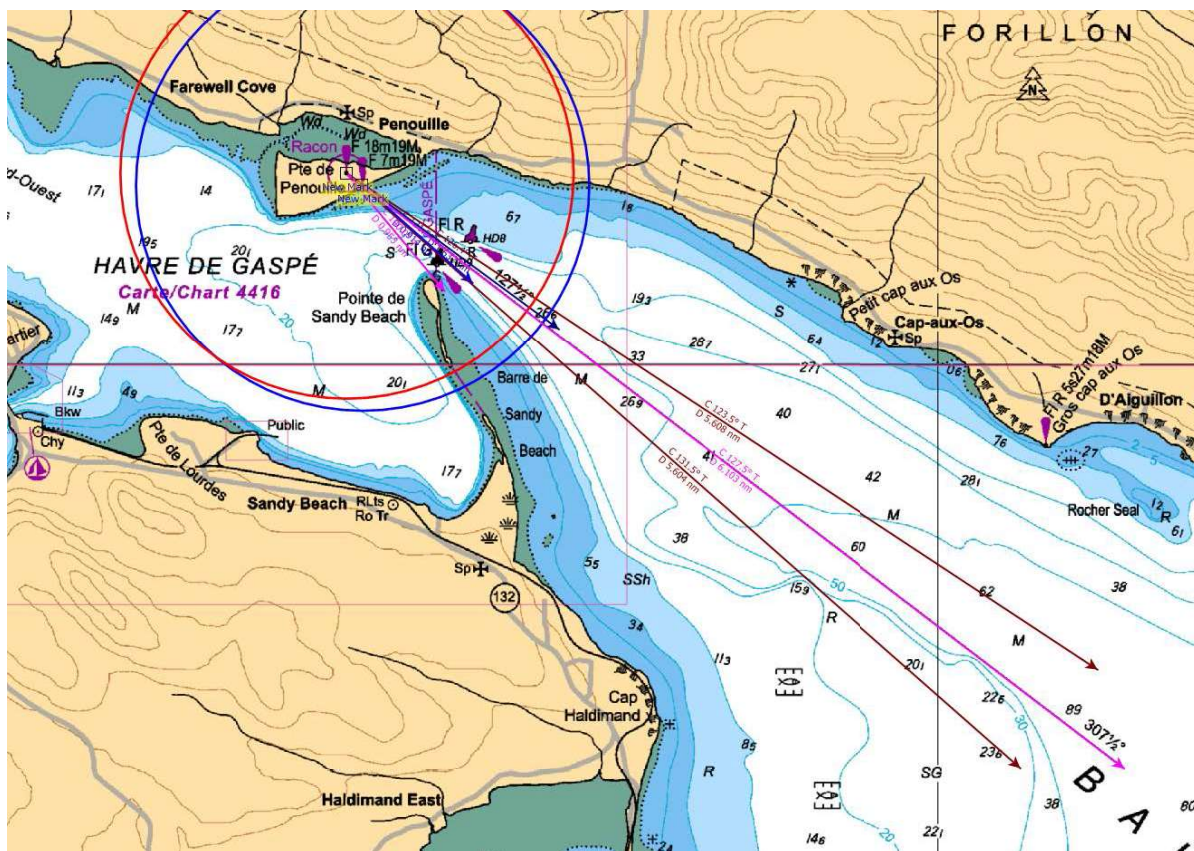
**Figure 2 - LAYOUT ÎLE STE-THÉRÈSE**

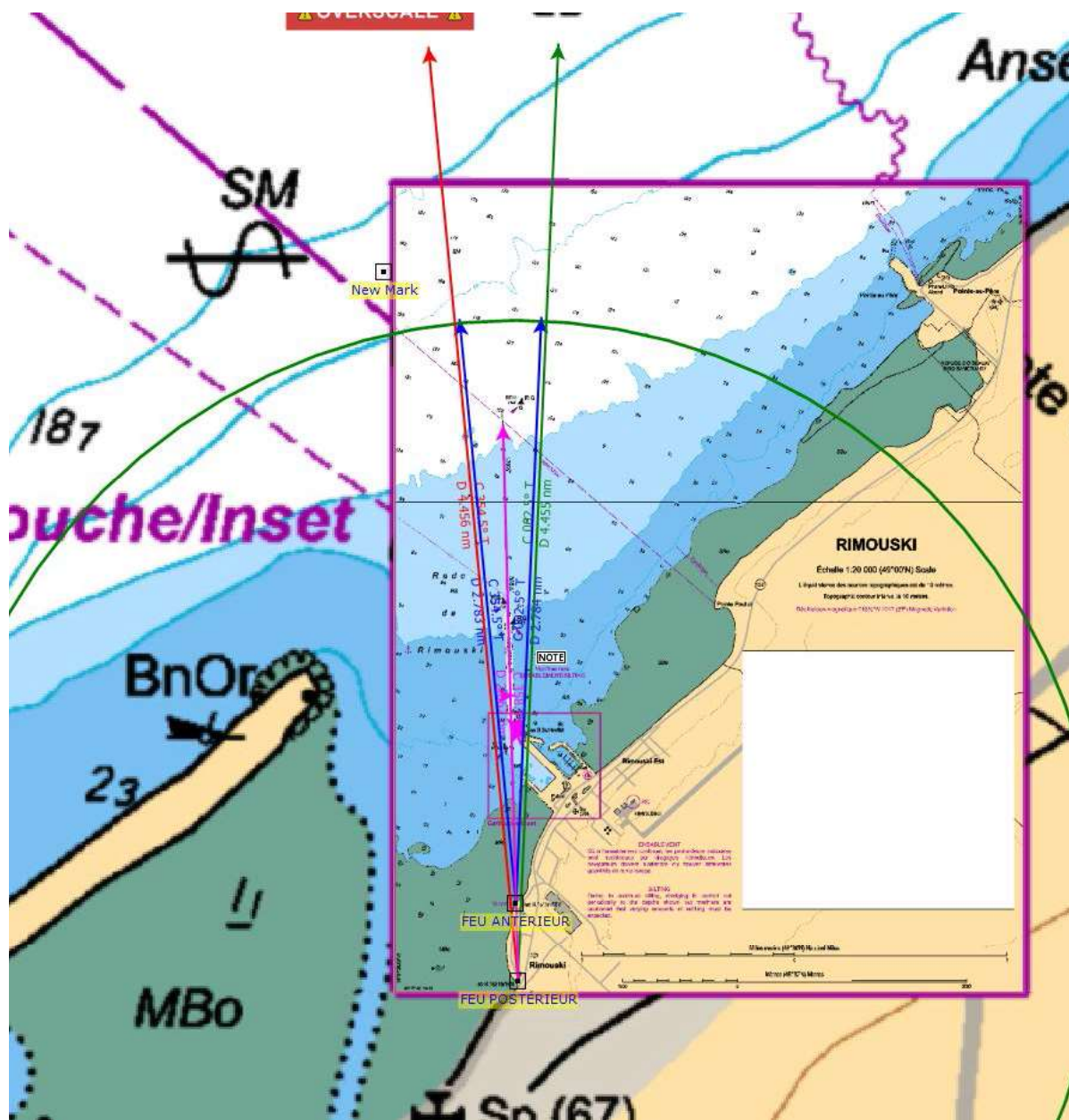




**Figure 3 – LAYOUT SAINT-ANNE-DES-MONTS**

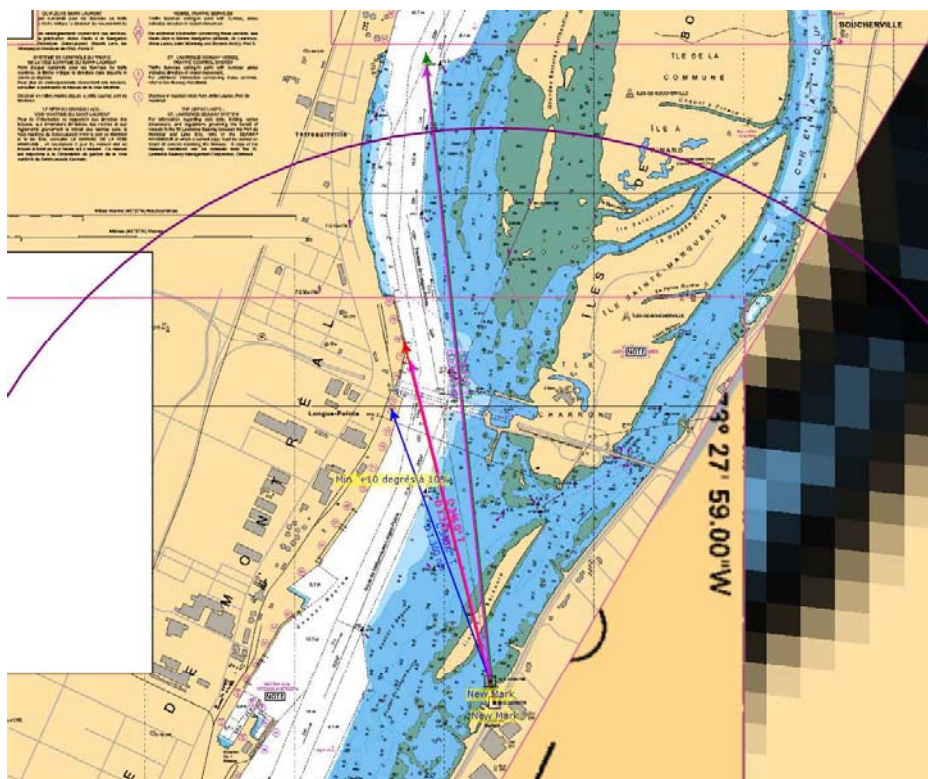






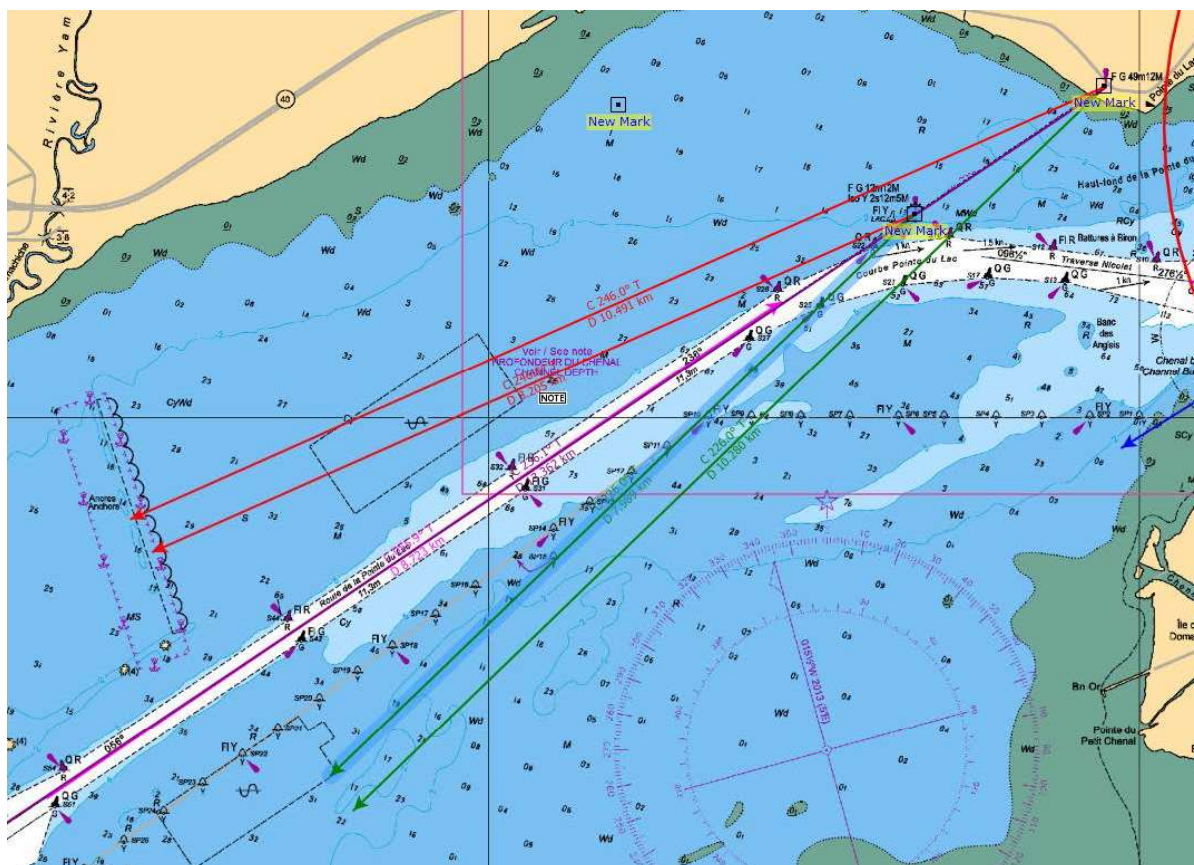


**Figure 6 - LAYOUT TRAVERSE LONGUE POINTE**

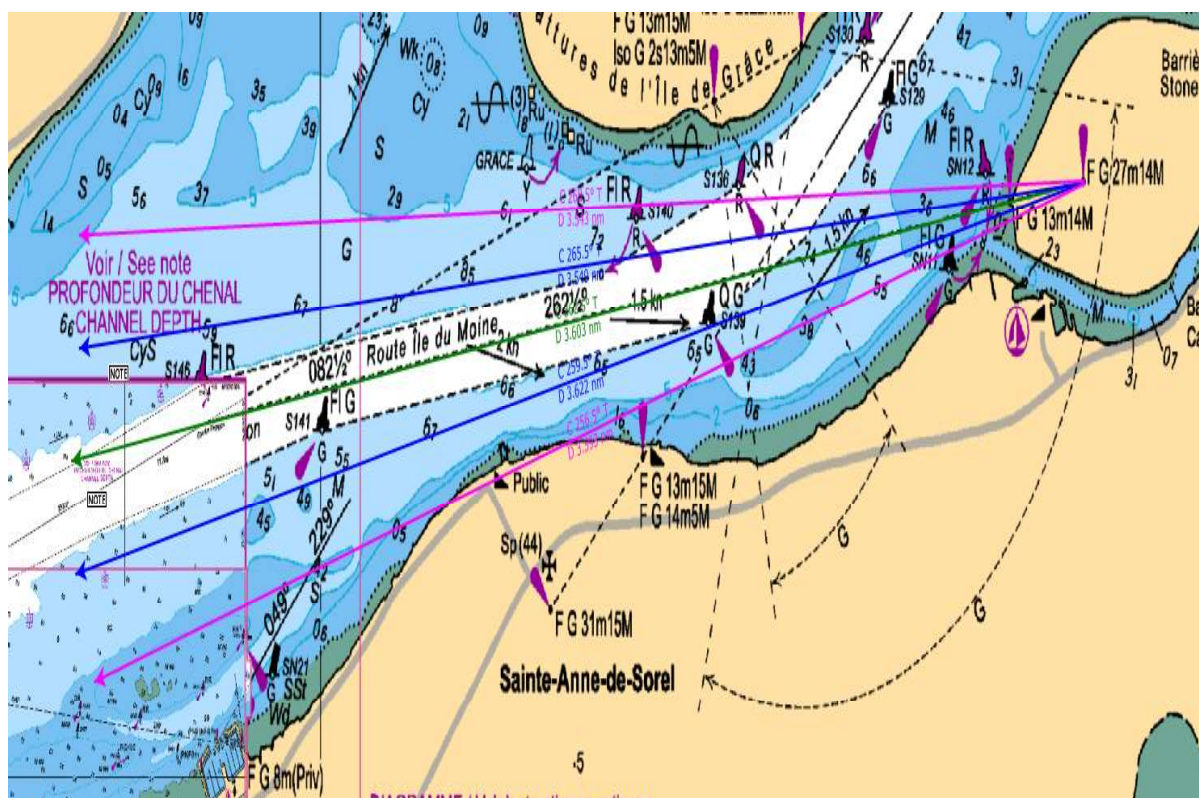




**Figure 7 - LAYOUT POINTE DU LAC**



**Figure 8 – LAYOUT ÎLE DU MOINE**



## ANNEX B – BASIS OF PAYMENT

### 1. Group A – Ile Mermettes

Art.	Description	Qty	Unit	Firm Unit Price	Total Firm Price
1.1	<b>Beacon lights</b> <b>In accordance with Annex A</b>  <b>Indicate the equipment Brand and Model :</b>  <b>Brand : _____</b>  <b>Model : _____</b>	2	EACH	_____ \$	_____ \$
1.2	<b>Documentation according to Annex A</b> <ul style="list-style-type: none"> <li>• Instruction for installation and operation</li> <li>• Manuel and maintenance plan</li> <li>• Bolting Circle Drawings</li> <li>• List of Spare Parts</li> <li>• Software</li> </ul>	1	LOT	_____ \$	_____ \$
1.3	<b>Delivery charges</b> DDP (Québec, Québec, Canada), including customs duties, handling and the delivery.	1	LOT	_____ \$	_____ \$
<b>TOTAL BID PRICE (TBP) =</b>					_____ \$
Note : Price including not Applicable Sales Taxes					
<i>* Bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes and the subsequent Contract award. The rate given by the Bank of Canada in effect on the bid solicitation closing date will be applied as a conversion factor to the bids submitted in foreign currency.</i> <b>The subsequent contract will be in Canadian dollars.</b>					

## 2. Group B – Ile Ste-Thérèse (Beacon)

Art.	Description	Qty	Unit	Firm Unit Price	Total Firm Price
2.1	<b>Beacon lights</b> <b>In accordance with Annex A</b>  <b>Indicate the equipment Brand and Model :</b>  <b>Brand :</b> _____  <b>Model :</b> _____	2	EACH	_____ \$	_____ \$
2.2	<b>Documentation according to Annex A</b> <ul style="list-style-type: none"> <li>• Instruction for installation and operation</li> <li>• Manuel and maintenance plan</li> <li>• Bolting Circle Drawings</li> <li>• List of Spare Parts</li> <li>• Software</li> </ul>	1	LOT	_____ \$	_____ \$
2.3	<b>Delivery charges</b> DDP (Québec, Québec, Canada), including customs duties, handling and the delivery.	1	LOT	_____ \$	_____ \$
<b>TOTAL BID PRICE (TBP) =</b>					_____ \$
Note : Price including not Applicable Sales Taxes					
<i>* Bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes and the subsequent Contract award. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.</i> <b>The subsequent contract will be in Canadian dollars.</b>					

### 3. Group C – Sainte-Anne-des-Monts

Art.	Description	Qty	Unit	Firm Unit Price	Total Firm Price
3.1	<b>Beacon lights</b> <b>In accordance with Annex A</b>  <b>Indicate the equipment Brand and Model :</b>  <b>Brand :</b> _____  <b>Model :</b> _____	2	EACH	_____ \$	_____ \$
3.2	<b>Documentation according to Annex A</b> <ul style="list-style-type: none"> <li>• Instruction for installation and operation</li> <li>• Manuel and maintenance plan</li> <li>• Bolting Circle Drawings</li> <li>• List of Spare Parts</li> <li>• Software</li> </ul>	1	LOT	_____ \$	_____ \$
3.3	<b>Delivery charges</b> DDP (Québec, Québec, Canada), including customs duties, handling and the delivery.	1	LOT	_____ \$	_____ \$
<b>TOTAL BID PRICE (TBP) =</b>					_____ \$
Note : Price including not Applicable Sales Taxes					
<i>* Bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes and the subsequent Contract award. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.</i> <b>The subsequent contract will be in Canadian dollars.</b>					

#### 4. Group D – Pointe Penouille

Art.	Description	Qty	Unit	Firm Unit Price	Total Firm Price
4.1	<b>Range lights</b> <b>In accordance with Annex A</b>  <b>Indicate the equipment Brand and Model :</b>  <b>Brand : _____</b>  <b>Model : _____</b>	3	EACH	_____ \$	_____ \$
4.2	<b>Documentation according to Annex A</b> <ul style="list-style-type: none"> <li>• Instruction for installation and operation</li> <li>• Manuel and maintenance plan</li> <li>• Bolting Circle Drawings</li> <li>• List of Spare Parts</li> <li>• Software</li> </ul>	1	LOT	_____ \$	_____ \$
4.3	<b>Delivery charges</b> DDP (Québec, Québec, Canada), including customs duties, handling and the delivery.	1	LOT	_____ \$	_____ \$
<b>TOTAL BID PRICE (TBP) =</b>					_____ \$
Note : Price including not Applicable Sales Taxes					
<i>* Bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes and the subsequent Contract award. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.</i> <b>The subsequent contract will be in Canadian dollars.</b>					

## 5. Group E – Ile Ste-Thérèse (Range)

Art.	Description	Qty	Unit	Firm Unit Price	Total Firm Price
5.1	<b>Range lights</b> <b>In accordance with Annex A</b>  <b>Indicate the equipment Brand and Model :</b>  <b>Brand : _____</b>  <b>Model : _____</b>	3	EACH	_____ \$	_____ \$
5.2	<b>Documentation according to Annex A</b> <ul style="list-style-type: none"> <li>• Instruction for installation and operation</li> <li>• Manuel and maintenance plan</li> <li>• Bolting Circle Drawings</li> <li>• List of Spare Parts</li> <li>• Software</li> </ul>	1	LOT	_____ \$	_____ \$
5.3	<b>Delivery charges</b> DDP (Québec, Québec, Canada), including customs duties, handling and the delivery.	1	LOT	_____ \$	_____ \$
<b>TOTAL BID PRICE (TBP) =</b>					_____ \$
Note : Price including not Applicable Sales Taxes					
<i>* Bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes and the subsequent Contract award. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.</i> <b>The subsequent contract will be in Canadian dollars.</b>					

## 6. Group F – Rimouski

Art.	Description	Qty	Unit	Firm Unit Price	Total Firm Price
6.1	<b>Range lights</b> <b>In accordance with Annex A</b>  <b>Indicate the equipment Brand and Model :</b>  <b>Brand :</b> _____  <b>Model :</b> _____	3	EACH	_____ \$	_____ \$
6.2	<b>Documentation according to Annex A</b> <ul style="list-style-type: none"> <li>• Instruction for installation and operation</li> <li>• Manuel and maintenance plan</li> <li>• Bolting Circle Drawings</li> <li>• List of Spare Parts</li> <li>• Software</li> </ul>	1	LOT	_____ \$	_____ \$
6.3	<b>Delivery charges</b> DDP (Québec, Québec, Canada), including customs duties, handling and the delivery.	1	LOT	_____ \$	_____ \$
<b>TOTAL BID PRICE (TBP) =</b>					_____ \$
Note : Price including not Applicable Sales Taxes					
<i>* Bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes and the subsequent Contract award. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.</i> <b>The subsequent contract will be in Canadian dollars.</b>					



## 7. Group G – Traverse Longue Pointe

Art.	Description	Qty	Unit	Firm Unit Price	Total Firm Price
7.1	<b>Range lights</b> <b>In accordance with Annex A</b>  <b>Indicate the equipment Brand and Model :</b>  <b>Brand : _____</b>  <b>Model : _____</b>	3	EACH	_____ \$	_____ \$
7.2	<b>Documentation according to Annex A</b> <ul style="list-style-type: none"> <li>• Instruction for installation and operation</li> <li>• Manuel and maintenance plan</li> <li>• Bolting Circle Drawings</li> <li>• List of Spare Parts</li> <li>• Software</li> </ul>	1	LOT	_____ \$	_____ \$
7.3	<b>Delivery charges</b> DDP (Québec, Québec, Canada), including customs duties, handling and the delivery.	1	LOT	_____ \$	_____ \$
<b>TOTAL BID PRICE (TBP) =</b>					_____ \$
Note : Price including not Applicable Sales Taxes					
<i>* Bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes and the subsequent Contract award. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.</i> <b>The subsequent contract will be in Canadian dollars.</b>					

## 8. Group H – Pointe du Lac

Art.	Description	Qty	Unit	Firm Unit Price	Total Firm Price
8.1	<b>Range lights</b> <b>In accordance with Annex A</b>  <b>Indicate the equipment Brand and Model :</b>  <b>Brand : _____</b>  <b>Model : _____</b>	3	EACH	_____ \$	_____ \$
8.2	<b>Documentation according to Annex A</b> <ul style="list-style-type: none"> <li>• Instruction for installation and operation</li> <li>• Manuel and maintenance plan</li> <li>• Bolting Circle Drawings</li> <li>• List of Spare Parts</li> <li>• Software</li> </ul>	1	LOT	_____ \$	_____ \$
8.3	<b>Delivery charges</b> DDP (Québec, Québec, Canada), including customs duties, handling and the delivery.	1	LOT	_____ \$	_____ \$
<b>TOTAL BID PRICE (TBP) =</b>					_____ \$
Note : Price including not Applicable Sales Taxes					
<i>* Bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes and the subsequent Contract award. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.</i> <b>The subsequent contract will be in Canadian dollars.</b>					

## 9. Group I – Ile du Moine

Art.	Description	Qty	Unit	Firm Unit Price	Total Firm Price
9.1	<b>Range lights</b> <b>In accordance with Annex A</b>  <b>Indicate the equipment Brand and Model :</b>  <b>Brand : _____</b>  <b>Model : _____</b>	3	EACH	_____ \$	_____ \$
9.2	<b>Documentation according to Annex A</b> <ul style="list-style-type: none"> <li>• Instruction for installation and operation</li> <li>• Manuel and maintenance plan</li> <li>• Bolting Circle Drawings</li> <li>• List of Spare Parts</li> <li>• Software</li> </ul>	1	LOT	_____ \$	_____ \$
9.3	<b>Delivery charges</b> DDP (Québec, Québec, Canada), including customs duties, handling and the delivery.	1	LOT	_____ \$	_____ \$
<b>TOTAL BID PRICE (TBP) =</b>					_____ \$
Note : Price including not Applicable Sales Taxes					
<p><i>* Bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes and the subsequent Contract award. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.</i></p> <p><b>The subsequent contract will be in Canadian dollars.</b></p>					

## ANNEX C - Technical Compliance Form

### A. Mandatory Technical Criteria

Table 1: Île Mermettes

Ref	Criteria Description		Bidder's Specifications (The tenderer should indicate the reference to the technical documents included in the bid)
M1.01	Calendar	Capacity to turn on and off the lantern at a specific date. Submit data.	
M1.02	GPS option	Capacity to program period of annual operation	
M1.03	Candelas reduction	Capacity to reduce the intensity at night. Submit data.	
M1.04	Emergency mode	Capacity to change the flashing code and output candelas to the required specification in emergency mode. Submit data.	
M1.05	Vertical divergence	Submit data Minimum = 2°	
M1.06	Candelas @ night	Submit data Maximum = 450 Cd	
M1.07	Weight	Submit data Maximum = 15 kg (including base adaptor)	
M1.08	Height	Submit data Maximum = 600 mm (including base adaptor)	
M1.09	Operating temperature	Submit data Minimal Range = -40°C à +55°C	
M1.10	Bolting circle	Submit drawing, as per Section 3.1.25 of Annex A	

**Table 2: Île Ste-Thérèse**

Ref	Criteria Description		Bidder's Specifications (The tenderer should indicate the reference to the technical documents included in the bid)
<b>M2.01</b>	Calendar	Capacity to turn on and off the lantern at a specific date. Submit data.	
<b>M2.02</b>	GPS Option	Capacity to program period of annual operation	
<b>M2.03</b>	Candelas reduction	Capacity to reduce the intensity at night. Submit data.	
<b>M2.04</b>	Emergency mode	Capacity to change the flashing code and output candelas to the required specification in emergency mode. Submit data.	
<b>M2.05</b>	Vertical divergence	Minimum = 5°	
<b>M2.06</b>	Candelas @ night	Submit data Maximum = 60 Cd	
<b>M2.07</b>	Weight	Submit data Maximum = 15 kg (including base adaptor)	
<b>M2.08</b>	Height	Submit data Maximum = 600 mm (including base adaptor)	
<b>M2.09</b>	Operating temperature	Submit data Minimal Range = -40°C à +55°C	
<b>M2.10</b>	Bolting circle	Submit drawing, as per Section 3.2.24 of Annex A	

**Table 3: Sainte-Anne-des-Monts**

Ref	Criteria Description		Bidder's Specifications (The tenderer should indicate the reference to the technical documents included in the bid)
<b>M3.01</b>	Calendar	Capacity to turn on and off the lantern at a specific date. Submit data.	
<b>M3.02</b>	GPS Option	Capacity to program period of annual operation	
<b>M3.03</b>	Candelas reduction	Capacity to reduce the intensity at night. Submit data.	
<b>M3.04</b>	Emergency mode	Capacity to change the flashing code and output candelas to the required specification in emergency mode. Submit data.	
<b>M3.05</b>	Vertical divergence	Submit data Minimum = 7°	
<b>M3.06</b>	Candelas @ night	Submit data Maximum = 275 Cd	
<b>M3.07</b>	Weight	Submit data Maximum = 15 kg (including base adaptor)	
<b>M3.08</b>	Height	Submit data Maximum = 600 mm (including base adaptor)	
<b>M3.09</b>	Operating temperature	Submit data Minimal Range = -40°C à +55°C	
<b>M3.10</b>	Bolting circle	Submit drawing, as per Section 3.3.25 of Annex A	

**Table 4: Pointe Penouille**

Ref	Criteria Description		Bidder's Specifications (The tenderer should indicate the reference to the technical documents included in the bid)
M4.01	Calendar	Capacity to turn on and off the lantern at a specific date. Submit data.	
M4.02	Synchronisation	Capacity to synchronise the flashing of both lanterns. Submit data.	
M4.03	Candelas reduction	Capacity to reduce the intensity at night. Submit data.	
M4.04	Emergency mode	Capacity to change the flashing code and output candelas to the required specification in emergency mode. Submit data.	
M4.05	Vertical divergence	Submit data Minimum = 3°	
M4.06	Horizontal divergence	Submit data Min @ 50% of maximal candelas = 8°	
M4.07	Horizontal divergence	Submit data Min @ 10% of maximal candelas = 11°	
M4.08	Candelas @ day	Submit data Minimum = 15 000 Cd	
M4.09	Candelas @ night	Submit data Maximum = 225 Cd	
M4.10	Weight	Submit data Maximum = 15 kg (including base adaptor)	
M4.11	Height	Submit data Maximum = 600 mm (including base adaptor)	
M4.12	Operating temperature	Submit data Minimal Range = -40°C à +55°C	
M4.13	Bolting circle	Submit drawing, as per Section 3.4.28 of Annex A	

**Table 5: Range Île Ste-Thérèse**

Ref	Criteria Description		Bidder's Specifications (The tenderer should indicate the reference to the technical documents included in the bid)
<b>M5.01</b>	Calendar	Capacity to turn on and off the lantern at a specific date. Submit data.	
<b>M5.02</b>	Synchronisation	Capacity to synchronise the flashing of both lanterns. Submit data.	
<b>M5.03</b>	Candelas reduction	Capacity to reduce the intensity at night. Submit data.	
<b>M5.04</b>	Emergency mode	Capacity to change the flashing code and output candelas to the required specification in emergency mode. Submit data.	
<b>M5.05</b>	Vertical divergence	Submit data Minimum = 3°	
<b>M5.06</b>	Horizontal divergence	Submit data Min @ 50% of maximal candelas = 12°	
<b>M5.07</b>	Horizontal divergence	Submit data Min @ 10% of maximal candelas = 20°	
<b>M5.08</b>	Candelas @ Day	Submit data Maximum = 6000 Cd	
<b>M5.09</b>	Candelas @ night	Submit data Maximum = 6000 Cd	
<b>M5.10</b>	Weight	Submit data Maximum = 15 kg (including base adaptor)	
<b>M5.11</b>	Height	Submit data Maximum = 600 mm (including base adaptor)	
<b>M5.12</b>	Operating temperature	Submit data Minimal Range = -40°C à +55°C	
<b>M5.13</b>	Bolting circle	Submit drawing, as per Section 3.5.27 of Annex A	



**Table 6: Rimouski**

Ref	Criteria Description		Bidder's Specifications (The tenderer should indicate the reference to the technical documents included in the bid)
<b>M6.01</b>	Calendar	Capacity to turn on and off the lantern at a specific date. Submit data.	
<b>M6.02</b>	Synchronisation	Capacity to synchronise the flashing of both lanterns. Submit data.	
<b>M6.03</b>	Candelas reduction	Capacity to reduce the intensity at night. Submit data.	
<b>M6.04</b>	Emergency mode	Capacity to change the flashing code and output candelas to the required specification in emergency mode. Submit data.	
<b>M6.05</b>	Vertical divergence	Submit data Minimum = 3°	
<b>M6.06</b>	Horizontal divergence	Submit data Min @ 50% of maximal candelas = 8°	
<b>M6.07</b>	Horizontal divergence	Submit data Min @ 10% of maximal candelas = 12°	
<b>M6.08</b>	Candelas @ day	Submit data Minimum = 160 000 Cd	
<b>M6.09</b>	Candelas @ night	Submit data Maximum = 13 800 Cd	
<b>M6.10</b>	Weight	Submit data Maximum = 15 kg (including base adaptor)	
<b>M6.11</b>	Height	Submit data Maximum = 600 mm (including base adaptor)	
<b>M6.12</b>	Operating temperature	Submit data Minimal Range = -40°C à +55°C	
<b>M6.13</b>	Bolting circle	Submit drawing, as per Section 3.6.29 of Annex A	

**Table 7: Traverse Longue Pointe**

Ref	Criteria Description		Bidder's Specifications (The tenderer should indicate the reference to the technical documents included in the bid)
<b>M7.01</b>	Calendar	Capacity to turn on and off the lantern at a specific date. Submit data.	
<b>M7.02</b>	Synchronisation	Capacity to synchronise the flashing of both lanterns. Submit data.	
<b>M7.03</b>	Candelas reduction	Capacity to reduce the intensity at night. Submit data.	
<b>M7.04</b>	Emergency mode	Capacity to change the flashing code and output candelas to the required specification in emergency mode. Submit data.	
<b>M7.05</b>	Vertical divergence	Submit data Minimum = 2°	
<b>M7.06</b>	Horizontal divergence	Submit data Min @ 50% of maximal candelas = 8°	
<b>M7.07</b>	Horizontal divergence	Submit data Min @ 10% of maximal candelas = 20°	
<b>M7.08</b>	Candelas @ day	Submit data Minimum = 40 000 Cd	
<b>M7.09</b>	Candelas @ night	Submit data Maximum = 40 000 Cd	
<b>M7.10</b>	Weight	Submit data Maximum = 15 kg (including base adaptor)	
<b>M7.11</b>	Height	Submit data Maximum = 600 mm (including base adaptor)	
<b>M7.12</b>	Operating temperature	Submit data Minimal Range = -40°C à +55°C	
<b>M7.13</b>	Bolting circle	Submit drawing, as per Section 3.7.29 of Annex A	

**Table 8: Pointe du lac**

Ref	Criteria Description		Bidder's Specifications (The tenderer should indicate the reference to the technical documents included in the bid)
<b>M8.01</b>	Calendar	Capacity to turn on and off the lantern at a specific date. Submit data.	
<b>M8.02</b>	Synchronisation	Capacity to synchronise the flashing of both lanterns. Submit data.	
<b>M8.03</b>	Candelas reduction	Capacity to reduce the intensity at night. Submit data.	
<b>M8.04</b>	Emergency mode	Capacity to change the flashing code and output candelas to the required specification in emergency mode. Submit data.	
<b>M8.05</b>	Vertical divergence	Submit data Minimum = 3°	
<b>M8.06</b>	Horizontal divergence	Submit data Min @ 50% of maximal candelas = 20°	
<b>M8.07</b>	Horizontal divergence	Submit data Min @ 10% of maximal candelas = 24°	
<b>M8.08</b>	Candelas @ night	Submit data Maximum = 12 500 Cd	
<b>M8.09</b>	Weight	Submit data Maximum = 15 kg (including base adaptor)	
<b>M8.10</b>	Height	Submit data Maximum = 600 mm (including base adaptor)	
<b>M8.11</b>	Operating temperature	Submit data Minimal Range = -40°C à +55°C	
<b>M8.12</b>	Bolting circle	Submit drawing, as per Section 3.8.26 of Annex A	

**Table 9: Île du Moine**

Ref	Criteria Description		Bidder's Specifications (The tenderer should indicate the reference to the technical documents included in the bid)
<b>M9.01</b>	Calendar	Capacity to turn on and off the lantern at a specific date. Submit data.	
<b>M9.02</b>	Synchronisation	Capacity to synchronise the flashing of both lanterns. Submit data.	
<b>M9.03</b>	Candelas reduction	Capacity to reduce the intensity at night. Submit data.	
<b>M9.04</b>	Emergency mode	Capacity to change the flashing code and output candelas to the required specification in emergency mode. Submit data.	
<b>M9.05</b>	Vertical divergence	Submit data Minimum = 2°	
<b>M9.06</b>	Horizontal divergence	Submit data Min @ 50% of maximal candelas = 6°	
<b>M9.07</b>	Horizontal divergence	Submit data Min @ 10% of maximal candelas = 12°	
<b>M9.08</b>	Candelas @ night	Submit data Maximum = 12 000 Cd	
<b>M9.09</b>	Weight	Submit data Maximum = 15 kg (including base adaptor)	
<b>M9.10</b>	Height	Submit data Maximum = 600 mm (including base adaptor)	
<b>M9.11</b>	Operating temperature	Submit data Minimal Range = -40°C à +55°C	
<b>M9.12</b>	Bolting circle	Submit drawing, as per Section 3.9.26 of Annex A	

## B. Point Rated technical criteria

The number of rated technical criteria will be eight (8) per site. These include bonus points of up to fifteen (15) points for the best performing products. The maximum score of the rated assessment will be eighty-five (85) points, i.e. (70 for PR01 to PR07 +15 for PR08).

**Table 10**

Ref	Item	Description	Definition	Score	Bidder's Specifications (The tenderer should indicate the reference to the technical documents included in the bid)
PR 01	Communication port	A communication port, such as a serial interface, infrared device or other, used for external diagnostics, programming, and alarm outputs is required. A system built into the Range Lights is preferred i.e. no external hardware to install or maintain.	Built-in External	15 0	
PR 02	Height (H)	Maximum = 600mm including mounting adaptor (without Bird deterrent)	$H \leq 500$ mm 501 to 550 mm 551 to 600 mm	10 5 1	
PR 03	Weight (W)	Maximum = 15 kg including mounting adaptor. Smaller, more easily manoeuvrable models are preferred by the CCG	$W \leq 10$ kg 10.1 to 12 kg 12.1 to 15 kg	10 5 1	
PR 04	Mounting	The CCG prefers not to have to use a unit mounting adaptor plate	No adaptor Adaptor	15 0	
PR 05	Service Life (SL)	Minimum = 10 years Points are awarded for a longer service life.	$SL \geq 15$ yrs 12.1 to 14.9 yrs 11 to 12yrs	5 3 1	
PR 06	MTBF ( $T_F$ ) (Mean Time Between Failures)	Minimum = 5 years Points are awarded for a longer MTBF value.	$T_F \geq 10$ yrs 7.1 to 9.9 yrs 6 to 7 yrs	5 3 1	
PR 07	External components	The lantern having the least quantity of external electronic components will be preferred. (Flasher, GPS, timer/calendar, etc.). An external electronic component means a component not built into or not fixed onto the lantern	No external component	10	
PR 08 *	Bonus points for energy consumption	Ratio calculated as per the below table	1 <sup>st</sup> lowest Total Ratio (TR) 2 <sup>nd</sup> lowest TR 3 <sup>rd</sup> lowest TR Others	15 10 5 0	

**\* Point-Rated Criterion #8**

As detailed in Section 3.1.6, 3.2.6, 3.3.6, 3.4.6, 3.5.6, 3.6.6, 3.7.6, 3.8.6 and 3.9.6 of Annex A, the bidder should provide the maximum power consumption of the proposed system (including all electronic components). Power consumption will be compared to the other subjected products. The product offering the lowest power consumption will have the best notes.

Bonus points will be awarded to products demonstrating the lowest total of power ratio in Watt and power ratio in Candelas. Points will be awarded as follows: fifteen (15) points for the lowest total, ten (10) for the second and five (5) for the third. The allocation will be 50% of the mark for each item.

The three best scores will be rated. If two products or more have the same score, the same score will be awarded to each without altering the rank of the other products. See example in the following table.

These bonus points will be added to the rated criteria score.

#### Point-Rated Criterion #8

##### Example of calculation for bonus points Depending on the power in Watt and the Candelas

Bidders	#1	#2	#3	#4	#5
Consumption power of all components in Watt (W)	20	30	40	25	30
Lantern power in Candelas (Cd)	300	250	300	350	250
Calculation Watt (W)	$20/40 \times 50 = 25$	$30/40 \times 50 = 37.5$	$40/40 \times 50 = 50$	$25/40 \times 50 = 31.3$	$30/40 \times 50 = 37.5$
Calculation Candelas (Cd)	$300/350 \times 50 = 42.9$	$250/350 \times 50 = 41.67$	$300/350 \times 50 = 42.9$	$350/350 \times 50 = 50$	$250/350 \times 50 = 41.67$
Total Ratio (TR)	67.9	79.17	92.9	81.24	79.17
Ranking	1 <sup>st</sup>	2 <sup>nd</sup>	4 <sup>th</sup>	3 <sup>rd</sup>	2 <sup>nd</sup>
Score	15	10	0	5	10

N° de l'invitation - Solicitation No.  
F3051-170041/A  
N° de réf. du client - Client Ref. No.  
F3051-170041

N° de la modif - Amd. No.  
File No. - N° du dossier  
QCN-7-40088

Id de l'acheteur - Buyer ID  
QCN032  
N° CCC / CCC No./ N° VME - FMS

## ANNEX D - OEM CERTIFICATION FORM

This confirms that the original equipment manufacturer (OEM) identified below has authorized the Bidder named below to provide and maintain its products under any contract resulting from the bid solicitation identified below.

**Name of OEM**

\_\_\_\_\_

**Signature of authorized signatory of OEM**

\_\_\_\_\_

**Print Name of authorized signatory of OEM**

\_\_\_\_\_

**Print Title of authorized signatory of OEM**

\_\_\_\_\_

**Address for authorized signatory of OEM**

\_\_\_\_\_

**Telephone no. for authorized signatory of OEM**

\_\_\_\_\_

**Fax no. for authorized signatory of OEM**

\_\_\_\_\_

**Date signed**

\_\_\_\_\_

**Solicitation Number**

\_\_\_\_\_

**Name of Bidder**

\_\_\_\_\_