Nunavut

nwB3GJO

Government of Nunavut
Community Government and
Transportation, Kitikmeot Region
Box 2376
Cambridge Bay, NT
X0E 0C0

Thursday, August 3, 2000

INTERNAL
PD
SA Aug 9 cc
OM
A copy
CS
FO
CEO
DRO
Aug 9/00

FSC
Iqaluit, Nunavut
Fax: 867-979-5711

Attention: Terry Gray, P.Eng.

PLANNING STUDY - WATER SUPPLY SYSTEM
GJOA HAVEN

You are invited to submit a proposal to provide engineering services for a PLANNING STUDY to Select a Water Supply System for the Hamlet of Gjoa Haven. Six (6) other consultants have been invited as well. Please find attached a Request for Proposal to the above-mentioned project.

Yours sincerely,

Kojo O. Kumi, P.Eng.
Municipal Planning Engineer
Community Government and Transportation
Kitikmeot Region

NUNAVUT WATER BOARD
AUG 0 9 2000
PUBLIC REGISTRY

GJOA HAVEN WATERWORKS/WATER SUPPLY SYSTEM

Nunavut

Request for Proposals

The Government of Nunavut (GN), Department of Community Government and Transportation is requesting Proposals from qualified proposers for the provisions of Engineering consulting services as outlined in this document.

Table of Contents

Standard Instructions to Proponents

1. Proposals must be received before 3:00 PM local time on August 14, 2000 at:

Regional Superintendent, Kitikmeot Region
Government of Nunavut
Department of Community Government and Transportation

Delivered to 2nd floor Hospital Court
P. O. Box 367, Cambridge Bay, NU, X0B 0C0

In care of: Kojo O. Kumi, P.Eng., Municipal Planning Engineer
Project Management Division
Telephone: *(867) 983-7269 Fax: (867) 983-2491*

Proposals received after the exact time and date noted above will be rejected.

The original and five (5) copies are to be submitted, quoting **SELECTION OF WATERWORKS/WATER SUPPLY SYSTEM, GJOA HAVEN** on the outside of the envelope or package.

After the closing time, only the identity and addresses of the proponents will be posted.

2. The GN will not be responsible for any proposal that:
   - does not indicate the Request for Proposal reference, closing date and proposer's name;
   - is delivered to any address other than that provided above.

3. Facsimile transmitted proposals will be accepted under the following conditions:

   - the proposal is received before the submission deadline at the facsimile number stated;
   - the GN will not accept liability for any claim, demand or other actions for any reason should a facsimile transmission be interrupted, not received in its entirety, received after stated closing time and date, received by any other facsimile unit other than that stated herein, or for any other reasons;
   - the GN cannot guarantee the complete confidentiality of information contained in the proposal received by facsimile;
   - the Proposer shall submit an original proposal and five (5) copies to the address stated herein immediately following the transmission of the facsimile.

4. All questions or enquiries concerning this Request for Proposals must be in writing and be submitted to the address provided above no later than five (5) calendar days prior to the proposal deadline. Verbal responses to any enquiry cannot be relied upon and are not binding on either party.

5. This is not a Request for Tenders or otherwise an offer. The GN is not bound to accept either the proposal which provides for the lowest cost or price to the GN, or any proposal of those submitted.

6. If a contract is to be awarded as a result of this request for proposals, it will be awarded to the proposer who is responsible and whose proposal provides the best potential value to the GN. Responsible means the capability in all respects to perform fully the contract requirements and the integrity and reliability to assure performance of the contract obligations.

7. Notice in writing to a proposer and the subsequent execution of a written agreement shall constitute the making of a contract. No proposer will acquire any legal or equitable rights or privileges whatever until the contract is signed.

8. The contract will be in the form of the standard "GN Architectural/Engineering Services Agreement" and it will contain the relevant provisions of this Request for Proposals, the accepted proposal as well as such other terms as may be mutually agreed upon, whether arising from the accepted proposal or as a result of any negotiations prior or subsequent thereto. The GN reserves the right to negotiate modifications with any proposer who has submitted a proposal.

9. In the event of any inconsistency between this Request for Proposal, and the ensuing contract, the contract shall govern.

10. The GN has the right to cancel this Request for Proposals at any time and to reissue it for any reason whatsoever, without incurring any liability and no proposer will have any claim against the GN as a consequence.

11. Any amendments made by the GN to the Request for Proposals will be issued in writing and sent to all who have received the documents.

12. The GN is not liable for any costs of preparation or presentation of proposals.

13. An evaluation committee will review each proposal. The GN reserves the exclusive right to determine the qualitative aspects of all proposals relative to the evaluation criteria.

14. Proposers may not amend their proposal after the closing date and time but may withdraw their proposal at any time.

15. Proposals will be evaluated as soon as practicable after the closing time. No detail of any proposal will be made public except the names of all parties submitting proposals.

16. Provisions of the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy will be applied in the evaluation of all proposals.

17. The proposal and accompanying documentation submitted by the proposers are the property of the GN and will not be returned.

Terms of Reference

Background

The existing Water Supply System at Gjoa Haven is over twenty years old and unreliable – dilapidated transmission main characterized by "scars" from past and recent repairs to ruptures, breaks and leaks; run down Intake Pumphouse (shack); water source plagued by bloodworms (midge fly larvae). As well a subdivision exists in a relatively close proximity to the shores of Water Lake – the community's raw water source – thus raising concerns of potential contamination of the existing water source by runoff from the subdivision.

Scope of Work

The services of a consultant are required to:

Provide Engineering Services for a PLANNING STUDY TO SELECT WATERWORKS/WATER SUPPLY SYSTEM FOR THE HAMLET OF GJOA HAVEN.

The Engineering Services shall be delivered as described in Section E of the Standard GN Architectural / Engineering Services Agreement and modified as follows.

- Field Surveys and preliminary engineering studies leading to the selection of the most cost-effective development that provides the Hamlet of Gjoa Haven with an ample and dependable supply of water. Water that is free of health hazards, and meets or exceeds the Guidelines of Canadian Drinking Water Quality and all specific requirements of the community's Nunavut Water Board Licence to Operate. Water that is aesthetically acceptable and is of sufficient quality and quantity for domestic, commercial, and industrial use; and also for Fire Protection purposes.

- An expanded Terms of Reference is attached, as Appendix C, it is not designed to rule out innovation. Alternate proposals to achieve the stated objectives should be outlined in the submission.

- Proposers shall draw on and incorporate Inuit Traditional Knowledge through Community consultation

- The successful Proposer is to address the following mandatory requirements in the Planning Report with respect to the recommended solution:

- Capital cost
- O&M Costs
- Present Value Costs
- Impact on Existing System
- Integration/Adaptability of the Existing System

2000 3993 157

APPENDIX C

SELECTION OF A NEW WATERWORKS/WATER SUPPLY SYSTEM GJOA HAVEN, NUNAVUT

TERMS OF REFERENCE FOR A PLANNING STUDY

Government of Nunavut

1.0 THE PROJECT

The primary objective of this PLANNING STUDY is to select a water supply system (raw water source/ raw water storage, transmission, treatment/processing; treated water storage, if required; and distribution system) to provide a year round safe drinking water to the Hamlet of Gjoa Haven. The problems to be overcome are delineated in Sections 2.0 and 3.0 below.

- Identify alternatives to or improvements to the existing domestic water supply system.
- Provide detailed benefit/cost analysis of all alternatives selected.
- Other alternatives submitted by the consultant will be considered.

Engineering Services Required

- Physical site inspection and ranking of the natural bodies of freshwater in and around the Hamlet of Gjoa Haven as a potential raw water source of potable water for the community.
- Conduct water sampling of the top three ranked bodies of water to determine the nature of treatment required to enable the selected raw water source to meet or better the Guidelines for Canadian Drinking Water Quality.
- If the raw water sources are in relative close proximity to the community, propose remediation measures to safeguard the sources against potential bacteriological contamination and larval infestation (including midge fly larva).
- Conduct a review and physical survey including bathymetric studies of the top ranked water sources to ascertain the adequacy/availability of winter storage capacity for a 20 year design horizon at 90 litres per capita per day plus provisions for Fire Protection, commercial and industrial use.
- Propose a water supply system (intake system; transmission main, treatment/processing; treated water storage; and distribution system as applicable) for each alternative selected.
- Propose the integration of the existing water supply system/facilities into the recommended waterworks, if feasible.
- Prepare a Planning Report outlining the alternatives, the associated capital cost requirements and the benefit/cost analysis of each alternative.
- Provide budget cost estimates for the construction of the various alternatives.
- Participate in meetings with the client department to review the report.

2.0 INTRODUCTION

The Hamlet of Gjoa Haven currently obtains potable water from a runoff lake known as WATER LAKE. The lake is recharged every fall by means of an overland pipe (250 mm in diameter, and about 4 km long) from Swan Lake. The existing water supply consists of Water Lake as the raw water source; an intake shack (Pumphouse); an 100mm diameter x 190 m long transmission main that delivers raw water from the Intake Pumphouse (situated on the shore of Water Lake) to a Distribution Pumphouse equipped with a truck fill arm. A chemical feed pump is used to chlorinate the water inline at the Distribution Pumphouse prior to filling the water delivery trucks. There is no intermediate or final storage in the processing of the water at either Pumphouse or in between.

3.0 PROPOSED SYSTEM

As delineated, above, in the Engineering requirements. The following system components are suggested for consideration in this search for a safe and cost-effective 20-year design horizon solution.

Raw Water Source/ Raw Storage:

Carry out a formal water quality study to select a water source that can be treated to meet or better the Nunavut Public Health Act and the Guidelines for Canadian Drinking Water Quality. As well the raw water source should have sufficient winter storage capacity to supply water for a twenty year design horizon based on a consumption rate of 90 litres per capita per day (LCPD) plus provisions for Fire Protection, industrial and commercial demand. Conduct an environmental assessment and recommend measures to mitigate any potential bacteriological contamination if the body of water is used for recreation, fishing and campsite purposes; or the source is in close proximity to an existing or future subdivision. Consideration may also be given to constructing an earthen reservoir at a suitable site in the community to provide adequate year round storage capacity for the twenty years design horizon based on a consumption rate of 90 litres per capita per day (LCPD) plus provisions for Fire Protection, industrial and commercial demand. The reservoir is to be recharged from an appropriate raw water source or sources.

Intake System:

Intake Pumphouse:

- Propose a pumphouse to suit the selected raw water source/raw water storage facility. Include provisions for an emergency
  Water supply/withdrawal system.

GJOA HAVEN WATERWORKS/WATER SUPPLY SYSTEM

Intake Line:

- Investigate both single line and dual intake options. Indicate the type of casing and freeze protection.

Intake Screen:

- Location in the raw water source must be relatively free of larval infestation. Screen openings should be narrow enough to eliminate the entrainment of eggs and larvae in the system; the screen is to serve as the first level of filtration and form an integral part of the water processing/treatment system.
- Include a backwash system in the intake screen system, as necessary.

Tempering System:

- If required, propose the nature and type (boilers, heat exchanges etc).

Intake Pumps:

- Propose a suitable pumping system to satisfy a twenty-year design horizon at 90 LCPD plus Fire Protection, industrial and commercial demand.

Transmission Main/Water Supply Pipeline:

- Examine the cost effectiveness of a transmission main from the selected water source to the existing Distribution Pumphouse (to be retrofitted, as necessary) IN COMPARISON to a "Kugaaruk" or "Holman" type water supply system – intake/disinfection/truckfill station - at the selected water source. The existing distribution pumphouse is conveniently located close to the community. It is connected to the existing raw water source by means of a 100-mm diameter x 190-m long pipeline from the Intake Pumphouse. A new transmission main will be required, if the selected system is not of the integral intake/treatment/truckfill type of facility. Indicate whether the pipeline is to be installed above ground or buried. Identify line size, type of line supports, and required freeze protection for all components (including valves and fittings of the intake line assembly).

GJOA HAVEN WATERWORKS/WATER SUPPLY SYSTEM

Water Treatment/Processing and Distribution Facilities:

- **The following requirements are to be met by the treated water: absence of turbidity and colour; absence of taste and odour; properly adjusted with respect to chemical balance (known as "pH") to prevent corrosion and excessive formation of scale within the distribution system; disinfected so that it is bacteriologically safe for drinking purposes. The treatment should destroy or inactivate bacterial microorganisms, which may pose a threat to public health.**

- The Distribution Pumphouse/truckfill station is to house the equipment that is required to successfully treat/process the raw water to potable standards.

- If a separate Intake and Distribution pumphouses are proposed: consideration may be given to treating /processing the water entirely at either location or both as the project economics dictate.

- The water treatment facilities should be accessible year round – for fuel delivery and maintenance.