



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada

REQUEST FOR PROPOSAL

MORDEN RESEARCH AND DEVELOPMENT
CENTRE

MORDEN, MANITOBA

Solicitation No. 465-1-13-C28

SUPPLY OF A LATERAL MOVE IRRIGATION
SYSTEM

Contracting Authority:
Agriculture and Agri-Food Canada

Canada

BIDDER INSTRUCTIONS AND INFORMATION

1. INTRODUCTION

The work of this request for proposal consists of the supply of all plant, labour, services, and materials, except as may be specified herein, for the design, supply and installation of one (1) Lateral Move Irrigation System equipped with Sprinkler Variable Rate Irrigation Technology for the Morden Research and Development Centre in Morden, Manitoba.

The purpose of this Request for Proposal (RFP) is to invite contractors to submit their proposals for consideration.

2. REQUESTS FOR EXPLANATIONS

Direct requests for explanations to:

Melissa Smith
Agriculture and Agri-Food Canada
Western Service Centre
300 – 2010 12th Avenue
Regina, Saskatchewan
S4P 0M3
Phone: 306-523-6545; Facsimile: 306-780-5018
E-mail: Melissa.Smith@agr.gc.ca

Any request for explanations regarding the Request for Proposal must be submitted to the above address in writing a minimum of five (5) days prior to the submission deadline. Oral explanations or instructions given will not be binding.

3. MODIFICATIONS

Canada reserves the right to revise or amend the Request for Proposal prior to the submission deadline. Such revisions or amendments, if any, will be announced by addendum or addenda.

4. PROPOSAL SUBMISSION DEADLINE

Proposals will be received up to **2:00 p.m., local Regina time, Tuesday, December 20, 2016**, at the above address. Late submissions will not be considered and will be returned unopened.

5. ELECTRONIC SUBMISSIONS

Facsimile, computer disc, or electronic mail submissions will not be considered.

6. REJECTION OF QUALIFICATIONS

Canada reserves the right to reject any and all submissions when such rejection is in the interest of Canada.

7. REFERENCE DOCUMENTS

The following are enclosed:

- A - Summary of Work (Specifications)
- B - Mandatory Requirements
- C - Proposal Format
- D - Proposal Evaluation Method & Criteria

Invitation to tender documents:

AAFC: Bid and Acceptance Form, Special Instructions to Bidders, General Instructions to Bidders, General Conditions, Contract Documents, Insurance Terms, Bid Bond

8. AWARD DATE

Canada intends to announce the award within 2 - 3 weeks after solicitation closing.

9. COMPLETION DATE

The Contractor shall supply and install the equipment by March 31, 2017.

The Contractor shall complete the commissioning of the systems by June 1, 2017.

10. TAXES

Refer to GI03 and GI04 of GENERAL INSTRUCTIONS TO BIDDERS for the purposes of establishing the amount of taxes that are to be included in the cost.

11. BUDGET

The maximum budget not to be exceeded for the work described in the Request for Proposal is \$218,400.00 excluding applicable taxes.

Canada reserves the right to negotiate details of the Contract with the Contractors.

Canada will not necessarily pursue negotiations with any Contractor.

12. MODIFICATIONS OF PROPOSALS

Each proposal as originally submitted or as negotiated shall be irrevocable for 30 days.

If, in the course of negotiations, the Contractor amends or modifies the Proposal after the

submission deadline, Canada may consider any amended Proposal as an alternative to the Proposal as originally submitted without releasing the Contractor from the Proposal as originally submitted.

13. SITE CONDITIONS

The Design-Build Contractor is responsible for examining the project site and familiarizing themselves with the existing conditions. The Contractor shall obtain all necessary information and data for fulfillment of the work. No claims will be considered resulting from the Contractor failing to acquaint themselves with the site conditions.

Arrangements for a site visit shall be made by contacting Steve Sager at Phone (204)822-7582 or Cell (204) 362-1248 to arrange a site examination.

A - SUMMARY OF WORK

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SECTION 1 – GENERAL

1-01 Background

The Morden Research and Development Centre is looking to expand its existing irrigation capacity to facilitate research activities, such as pathology and irrigated agronomy trials.

A 40 Hectare parcel of land has been identified for irrigation development (Figure 1); and is located on AAFC property south-east of the Morden R&D Centre offices. A proposed Lateral Move Irrigation System would travel East/West and irrigate approximately 10-15 Hectares of plot land in a given year with potential to irrigate up to 20 Hectares depending on requirements.

The variability in irrigation demand due to crop variability and research treatments makes the implementation of a Sprinkler Variable Rate Irrigation Technology beneficial from a research and demonstration point of view.



Figure 1: AAFC Morden Research and Development Centre Proposed Irrigation Development Land

1-02 Scope of Work

The work of this request for proposal consists of the supply of all plant, labour, services, and materials, except as may be specified herein, for the design, supply and installation of one (1) Lateral Move Irrigation System equipped with Sprinkler Variable Rate Irrigation Technology for the Morden Research and Development Centre in Morden, Manitoba.

1-03 Approximate Quantities

The following items are the main items to be supplied to the project site and approximate quantities of each:

- | | |
|--|------------|
| 1. Design and Install one (1) Lateral Move Irrigation System equipped with Sprinkler Variable Rate Irrigation Technology | 1 Lump Sum |
| 2. Commission of Systems | 1 Lump Sum |

1-04 Drawing

Plan A - Site Layout

This drawing shows the approximate dimensions and arrangement of the work and is in sufficient detail to serve as a basis for the preparation of the Contractor's bid. Additional drawings showing further details or alterations will be furnished to the Contractor during the progress of the work, where determined necessary by Canada.

1-05 Completion of the Work

The Contractor must complete Item 1 on or before March 31, 2017.

Item 2 must be completed on or before June 1, 2017.

1-06 Materials Furnished by Canada

Canada will furnish to the Contractor, without charge, all site areas which, in the opinion of Canada, are necessary for the execution of the work.

1-07 Materials Furnished by the Contractor

The Contractor shall be required to furnish all materials and supplies as specified in this request for proposal, except such items as are specified in 1-06. The costs of hauling, handling, and caring for all materials and supplies furnished by the Contractor shall be included in the prices bid in the Proposal for the work for which the materials and hauling are required.

Materials shall meet the requirements of the request for proposal, or where not detailed in the request for proposal, shall be to the satisfaction of Canada. All materials shall be new unless otherwise specified.

Schedules of piping, fittings, pipe or other materials indicating quantity and/or dimensions, which are shown in the applicable sections of this request for proposal, are intended only to assist the Contractor in his quantity takeoff. Quantities and dimensions shown herein are not guaranteed to be accurate and shall be checked by the Contractor prior to placing an order for such materials.

All materials provided by the Contractor shall vest in and become the property of Canada as soon as the same are delivered to the site of the works, but shall remain in the custody and at the risk of the Contractor.

1-08 Roads, Fences, and Crop Damage

Access to work shall be provided by the Contractor at his own expense. Canada assumes no responsibility for the condition and maintenance of any road or structure that may be used by the Contractor in performing the work under this request for proposal, or in delivering the material to the project site. For the duration of the work encompassed by this request for proposal, all roads

damaged by the Contractor's heavy vehicle and equipment traffic shall be maintained and repaired by the Contractor to the satisfaction of Canada at no additional cost to Canada.

The Contractor will be held responsible for damages to crops and shall make his own arrangements with crop owners for passage through crops, where necessary.

Canada assumes no responsibility for public safety in connection with any operations performed by the Contractor in prosecution of the work encompassed by this request for proposal. Public and private roads subject to interference by the work shall be kept open or suitable detours shall be provided by the Contractor. The Contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient red lights, danger signals and signs, and shall take all necessary precautions for the protection of the work and the safety of the public.

No allowance will be made for the cost to the Contractor of providing access roads and road detours, or of moving and replacing fences. These costs must be included in the unit prices bid on for the items appearing in the Unit Price Table.

1-09 Use of Construction Facilities

Work at or in the vicinity of the site may be performed by other agencies or by other contractors during the period covered by this request for proposal including, but not limited to, field work being undertaken by Morden staff. The Contractor shall permit full use, without charge therefore, of roads, bridges, and of any other facilities usable jointly by the Contractor, other agencies, or other contractors, as are available for such use without additional cost to the Contractor.

The Contractor shall have a site safety management plan prior to mobilizing to site. This plan shall include provisions to ensure the safety of the public, those engaged in the work under this request for proposal, and those employed by other agencies or contractors who may require access to the site against accident and injury. The Contractor shall post on site all necessary and applicable signs regarding safety hazards, and the required personal safety equipment. The Contractor shall appoint a competent site supervisor who shall be responsible for all daily construction activities with authority over all contractors, subcontractors, and workers on site, including the implementation of the site safety management plan.

1-10 Equipment, Camp, and Construction Areas

The Contractor shall be permitted to use for storage, any land available in the vicinity of the work that is within the boundaries of land controlled by Canada, except as may be otherwise specified herein, provided that such use will not interfere with any part of the work or the work of other contractors or other agencies in the vicinity.

In the event the Contractor finds it necessary to utilize additional area, which is not owned or controlled by Canada, for the performance of the work encompassed by this request for proposal, the Contractor shall make all necessary arrangements for the utilization of the required area at no expense to Canada.

It is not intended that the assignment of certain construction areas shall imply that others may not have access to or perform other work in the designed areas or in other areas in which work is required under this request for proposal. The use of such areas by others will be limited by Canada to the minimum considered consistent with efficient execution of the work under this and other contracts in force. However, Canada shall be the sole judge in all matters of access and area utilization by the Contractor and others.

If private land is used by the Contractor, he shall make all necessary arrangements with the owner of the private land, and shall pay all rentals and others costs connected therein.

1-11 Inspection and Tests

All materials furnished and all work performed will be subject to inspection.

The Contractor shall notify Canada of the suppliers from whom he proposes to obtain the material. Arrangements will be made by Canada to obtain material specimens and carry out the necessary tests. The Contractor shall, at his own cost, arrange and be responsible for the safe and expeditious delivery of all required and specified specimens to a testing laboratory designated by Canada.

The cost of inspection and testing will be borne by Canada, except where this request for proposal specifies otherwise.

1-12 Defective Materials and Equipment

1-12.01 Defects Disclosed Prior to Acceptance

Defects or other failure to meet the requirements of this request for proposal, including errors or omissions on the part of the Contractor, which are disclosed prior to final acceptance, shall be corrected entirely at the expense of the Contractor, including cost of required tests of corrected defects.

1-12.02 Defects Disclosed After Acceptance

Latent defects not disclosed before the date of final acceptance, but disclosed within one (1) year (unless otherwise stated in the request for proposal) from date of the Final Certificate of Completion, shall be corrected promptly by the Contractor entirely at the expense of the Contractor.

1-13 Operation and Maintenance

The Contractor must provide Canada with complete documentation on the operation and maintenance of the system and the design and operation of the electrical shut-offs. In addition to the written documentation, the Contractor shall instruct Canada's personnel in the operation and maintenance of the system and shut-offs. Such instructions must be sufficient in Canada's opinion to properly acquaint Canada's personnel with the required procedures. The work encompassed by this request for proposal must not be considered substantially complete until the instruction has been provided.

1-14 Payment

No separate payment will be made for the work specified in this section. All costs incurred by the Contractor in meeting with the requirements of this section including mobilization and demobilization, must be included in the bid price for this request for proposal.

SECTION 2 – MECHANICAL

2-01 General

The components of the irrigation system must be manufactured and finished in a thorough workmanlike manner. Workmanship must be of the highest grade throughout and in accordance with good commercial practice for this type of equipment. All dimensions/volumes shall be held as close as is consistent with good shop practice.

2-02 Detail Requirements – Lateral Move Irrigation System

- .01 A total of one (1) Lateral Move Irrigation System is required, meeting design specifications as listed below.
- .02 The total length of the lateral must be between 370m (1215ft) and 385m (1265ft). The length of the lateral must be met entirely with equal length spans; length shall not be reached by an end gun sprinkler.
- .03 All metal components, including nipples, fittings etc., must be hot dipped galvanized steel.
- .04 The tires must be new, minimum size 14.9” x 24” with tubes, semi-floatation with galvanized rims.
- .05 The outlets across the machine must be spaced to work with specified nozzle package. Extra outlets must have galvanized plugs.
- .06 Nozzle Package
 - .01 The system must be equipped with a nozzle package designed to deliver 350 usgpm at full flow.
 - .02 Nozzles must be Senninger I-Wobs with standard angle 9-Groove plates OR Nelson O3000 Orbitor with standard angle 9-Groove black plates or Canada Approved Equivalent.
 - .03 Nozzles must be equipped with 138 kPa (20 psi) regulators.
 - .04 Nozzles must be mounted on flexible drop hose c/w weights with nozzles approximately 1.5 meters (5 feet) from ground level.
 - .05 Nozzles must be sized and evenly spaced at the approximate interval specified by the nozzle manufacturer to optimize uniformity across the entire system.
 - .06 Sprinkler package must be equipped with a variable rate irrigation sprinkler control system which must be capable of maintaining user defined application rates within control zones along the length of the lateral.
 - .07 The equipped variable rate irrigation sprinkler control system shall have a minimum of 21 zones (3 zones per span) of approximate equal number of sprinklers per zone.

- .07 The irrigation lateral span pipe must be minimum 6 5/8" diameter with manufacturers' standard pipe wall thickness.
- .08 A sand trap must be installed at the end of the lateral.
- .09 The lateral system must be capable of irrigating in forward and reverse.
- .10 Gear boxes, drives, and motors must be complete with system.
- .11 The drive cart must be capable of pulling a 100m (330 ft) of drag hose with a minimum inside diameter of 100mm (4"). Contractors are responsible for ensuring drive cart is of sufficient size for lateral system length and field topography.
- .12 System must be complete with drag hose with a minimum 100mm (4") high density polyethylene pipe or Canada approved equivalent drag hose suitable for this application. Total length of drag hose shall be a minimum of 100m (330 feet). Connections from the drag hose to the lateral and from the drag hose to a hydrant riser are the responsibility of the Contractor.
- .13 Contractors are responsible for supplying a 100mm (4") 90° valve opening elbow compatible with drag hose connections and 100mm (4") hydrant risers (supplied by others).

SECTION 3 – ELECTRICAL

3-01 General

All electrical equipment and material for the lateral move irrigation system and variable rate irrigation control system must be new and conform to the standards of the Canadian Standards Association.

Installation of equipment must meet the requirements of the current edition of the Canadian Electrical Code, Part 1: applicable Provincial and Municipal regulations and codes; and the current ASAE Standard for this type of application. In no instance shall the standards and recommendations established by the manufacturer be reduced by any codes or regulations referred to above.

3-02 Detail Requirements – Lateral Move Irrigation System

- .01 The system shall be supplied c/w dealer approved Diesel Generator and electrical connections mounted on the linear irrigator to supply electrical power to operate the system as specified in Section 2.
- .02 The lateral must have a computer control panel with GPS compatibility (Note: GPS is to be used for field position and guidance). Minimum features to include programmable stop/start times, water application rate, field position, and temperature/pressure/flow read outs. It must be compatible with manufacturers 'real time' monitoring/control system that could be added at a later date.
- .03 The computer control panel or additional computer panel must be installed and shall control the sprinkler variable rate irrigation system. Zone application rate prescriptions must be programmable from control panel or downloadable from external source. If using external communication, required software and communication wiring must be supplied with system.
- .04 Lateral move irrigation system must be complete with tower alignment control system.
- .05 Lateral move irrigation system must be complete with manufacturers guidance system. GPS guidance system is preferred but buried cable guidance is an acceptable alternative.
- .06 Lateral must be complete with lightning arrester to comply with CSA Standard C233-1972 or most current standard.
- .07 Lateral must be equipped with a Nelson 800 series control valve with solenoid on/off mounted on the lateral riser pipe. Valve must be linked to the lateral control panel for low pressure, alignment, power interruption, end of field and scheduled shut off.

- .08 End of field shut-off arms c/w manufacturers recommended barricades must be included. Barricades must be placed on each end of the field either in line with drag cart tower or end tower (total of 2 barricades).
- .09 An electronic flow meter and pressure sensor must be installed and must communicate with the manufacturers control panel.

B – MANDATORY REQUIREMENTS

Proposals not meeting all of the following mandatory requirements will be disqualified from consideration:

1. The cost portion of the proposal is to be submitted in terms of Canadian Currency. The cost portion of the "base bid" proposal shall be submitted in a separate sealed envelope (Envelope #2) on the BID AND ACCEPTANCE FORM provided; with the project title and the contractor name marked on the envelope. Do not bind Envelope #2 in Envelope #1.
2. Provide firm completion dates which meet the stipulated schedule.
3. Proposals must be complete in all respects (i.e. the relevant personnel, management, design, quality assurance/quality control, risk management, cost, and other information requested in this Request for Proposal must be provided).
4. Proposals shall be submitted with full recognition that the benchmark estimate for this project is \$218,400.00 excluding all applicable taxes. Funding has been secured on this basis.
5. Proposals must demonstrate meeting all the specifications set out in Section 2 - Mechanical and Section 3 - Electrical by providing detailed documentation or brochures.
6. Do not exceed the maximum number of pages stipulated for the respective sections of the proposal, per document "C - PROPOSAL FORMAT".
7. Three (3) copies of the proposal (Envelope #1) and two (2) copies of the cost portion (Envelope #2) of the proposal are to be submitted.

C – PROPOSAL FORMAT

Submit the required number of copies of the submission in bound form. The technical proposal shall be submitted in Envelope #1. The cost portion shall be submitted in a separate envelope (Envelope #2). The project title, contractor's name and Technical Proposal Envelope #1 and Cost Portion Envelope #2 shall be marked on the envelopes. Do not bind the cost envelope in Envelope #1.

The following submission format is suggested for Envelope #1:

1. Title Page
2. Letter of Transmittal
3. Table of Contents
4. Introduction (1 page maximum)
Describe the background and the scope of the project.
5. Personnel Experience (2 pages maximum)
Provide sufficient background information for Canada to determine the expertise of the company, including relevant experience.
6. Design (5 pages maximum) plus data sheets, brochures and drawings
Provide design descriptions with technical information, illustrations, and drawings and a description of the user interface, to allow Canada to fully grasp the proposed design. Provide a description of how the system will operate including start-up and shut-down. If a turbine system is being proposed, please provide specifications on the pressure loss expected through the turbine during operation. Append a list of internet links, references to specific equipment models, or information sheets (boom carts, travelers, drag hose etc.) so Canada may review in detail the proposed equipment. Failure to submit sufficient product details will result in a low evaluation score. Items that may improve or provide additional functionality to the project, but not specifically called for in this proposal may be appended to the design section and will not count towards the maximum pages. Cost for these items shall be listed under a separate section in the Cost Proposal.
7. Operations and Maintenance (2 pages maximum)
Provide details on service support provided, including warranty and maintenance services, and user manual contents.
8. Commissioning (1 page maximum)
Outline commissioning and start-up services provided (e.g. operator training). Envelope #2 shall contain the completed BID AND ACCEPTANCE FORM and separate itemized option cost breakdowns. The separate itemized options cost breakdown must **not** be provided on the BID AND ACCEPTANCE FORM. **Please provide a separate document.**

Following contract award, the Contractor shall submit a detailed cash flow for discussion/negotiation with Canada. The agreed upon schedule will form the basis of progress payments.

D – PROPOSAL EVALUATION METHOD & CRITERIA

Proposals meeting all mandatory requirements will be evaluated by employees of Agriculture and Agri-Food Canada and/or such other agency as deemed appropriate. Proposals received for the design and installation of the Morden Research and Development Centre Lateral Move Irrigation System and Sprinkler Variable Rate Irrigation Technology will be evaluated on Technical Merit and Cost utilizing the point ratings in the Rating Guide below. Proposals will be evaluated on the individual skills and experience of the proposed contractor as well as the completeness and quality of proposed installation.

1. Ratings Scale

The following rating scheme will be used to evaluate the Point Rated Technical Criteria:

10 points	<u>Excellent</u>	Meets the desirable maximum that is considered useful
9 points	<u>Very Good</u>	Very well defined, very thorough. Substantially exceeds the desired minimum
8 points	<u>Good</u>	Slightly exceeds desirable minimum. Satisfactory details. Sufficiently defined
7 points	<u>Acceptable</u>	Just meets desirable minimum. Adequate information, marginal minimal details
6 points	<u>Poor</u>	Below the desired minimum. Vague, not clearly defined insufficient detail, unclear
5 points	<u>Not Valid</u>	Fails to meet desirable minimum. Missing information, incomplete, inconsistencies in proposal content
0 points		No Information provided

2. Method of Selection

The following procedure will be used to select the successful Contractor:

1. For the Technical Component, the proposal with the highest technical score (assuming higher than a pass mark of 50%) receives a full 60 points. All lower scoring tenders that passed are then prorated accordingly. Any proposal which scores less than the minimum pass mark will not be evaluated further.
2. For the Cost Component, the lowest priced proposal which achieves a pass mark in the technical component will receive the maximum 40 points allowed. The other higher priced proposals will be prorated.
3. The total points of both technical and cost components will then be added. The proposal with the highest points will be the successful Contractor, if the proposal is within the allocated budget and meets Canada's requirements. Canada reserves the right to not award the contract if it is in the best interests of Canada to do so.

Example:

	<u>Bidder #1</u>	<u>Bidder #2</u>	<u>Bidder #3</u>
Technical =	55 points	50 points	45 points
Price =	\$45,000	\$36,000	\$39,000

Bidder 1 - Best technical gets full 60 points = 60.0 points
Price $\frac{\$36,000}{\$45,000}$ X 40 points = 32.0 points
TOTAL 92.0 points

Bidder 2 - Technical $\frac{50}{55}$ X 60 points = 54.5 points
Lowest price gets full 40 points = 40.0 points
TOTAL 94.5 points

Bidder 3 - Technical $\frac{45}{55}$ X 60 points = 49.1 points
Price $\frac{\$36,000}{\$39,000}$ X 40 points = 36.9 points
TOTAL 86.0 points

WINNER BID is #2

3. Point Rated Criteria

Proposals will be evaluated in accordance with the following point system:

1. Mechanical Requirements 30 points

Minimum Pass Mark of 15 points must be achieved here to qualify further

- Structural Robustness (evaluation will be based upon the overall robustness of the span pipe, truss assembly and joint assembly; related to material composition and thickness (overall strength and durability));
- Drive Cart Construction and Drag Hose Quality (evaluation will be based on the power and traction of the drive cart, connection method of drag hose to cart (ease of connection), and material quality of drag hose (durability));
- Sprinkler Package and VRI Capability (evaluation will be based on the sprinkler package selected, the ability of VRI system to operate as desired (varied flow/pulse preferred over on-off) and number and size of control zones).

2. Electrical Requirements **30 points**

Minimum Pass Mark of 15 points must be achieved here to qualify further

- a. Control Panel Features (evaluation will be based on the provided features on the control panel (computer preferred over standard) and available expansion to remote monitoring/control system (future));
- b. Guidance System (GPS based guidance is preferred over buried cable guidance. Furrow and above ground cable guidance is not acceptable);
- c. VRI Interface and Software (evaluation will be based on the manufacturers software/interface ease of use, infield interface options (computer port vs manual enter) and the option to upgrade to remote VRI programing (future)).

Sub Total of Technical Components **60 points**

3. Cost Proposal (Base Bid) **40 points**

TOTAL **100 POINTS**