



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 677-2006

SUPPLY AND INSTALLATION OF AUTOMATIC VEHICLE LOCATION SYSTEM

TABLE OF CONTENTS

PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	3

PART B - BIDDING PROCEDURES

B1. Contract Title	1
B2. Submission Deadline	1
B3. Enquiries	1
B4. Addenda	1
B5. Substitutes	2
B6. Bid Submission	2
B7. Bid	3
B8. Prices	4
B9. Qualification	4
B10. Opening of Bids and Release of Information	5
B11. Irrevocable Bid	5
B12. Withdrawal of Bids	5
B13. Evaluation of Bids	6
B14. Award of Contract	6

PART C - GENERAL CONDITIONS

C1. General Conditions	1
------------------------	---

PART D - SUPPLEMENTAL CONDITIONS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Definitions	1
D4. Contract Administrator	1
D5. Notices	1

Submissions

D6. Authority to Carry on Business	2
------------------------------------	---

Schedule of Work

D7. Commencement	2
------------------	---

Warranty

D8. Warranty	3
--------------	---

PART E - SPECIFICATIONS

General

E1. General	1
E2. Goods	1
E3. General System Requirements	1
E4. Hardware Requirements	1
E5. Data Collection and Transmission	2
E6. Data Viewing System	3
E7. Installation and Repair	4
E8. Training	4
E9. Technical support / Maintenance service fee	4
E10. Delivery and Installation	5

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 SUPPLY AND INSTALLATION OF AUTOMATIC VEHICLE LOCATION SYSTEM

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, January 12, 2007.

B2.2 Bid Submissions determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. ENQUIRIES

B3.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

B3.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B3.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B3.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

B4. ADDENDA

B4.1 The Contract Administrator may, at any time prior to the Submission deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.

B4.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B4.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

B4.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Branch internet site for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B4.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B5. SUBSTITUTES

- B5.1 The Work is based on the materials, equipment, methods and products specified in the Bid Opportunity.
- B5.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B5.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least seven (7) Business Days prior to the Submission Deadline.
- B5.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the material, equipment, method or product as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract.
- B5.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B5.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B5.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B5.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B5.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative shall base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B13.
- B5.9 No later claim by the Contractor for an addition to the price(s) because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B6. BID SUBMISSION

- B6.1 The Bid Submission consists of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices; and

(c) References.

- B6.2 All components of the Bid Submission shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely in ink, to constitute a responsive Bid.
- B6.3 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B6.4 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Branch
185 King Street, Main Floor
Winnipeg MB R3B 1J1
- B6.4.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.
- B6.5 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to (204) 949-1178
- B6.5.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.
- B6.6 Bid Submissions submitted by internet electronic mail (e-mail) will not be accepted.

B7. BID

- B7.1 The Bidder shall complete Form A: Bid, making all required entries.
- B7.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B7.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B7.2.
- B7.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B7.4 Paragraph 10 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers;

- (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B7.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.

B7.4.2 All signatures shall be original.

B7.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid Submission and the Contract, when awarded, shall be both joint and several.

B8. PRICES

B8.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B8.1.1 Prices on Form B: Prices shall include:

- (a) duty;
- (b) freight and cartage;
- (c) Provincial and Federal taxes [except the Goods and Services Tax (GST) and Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable] and all charges governmental or otherwise paid;
- (d) profit and all compensation which shall be due to the Contractor for the Work and all risks and contingencies connected therewith.

B8.1.2 Prices on Form B: Prices shall not include the Manitoba Association for Resource Recovery Corporation (MARRC) Environmental Handling Charge (EHC) which shall be extra where applicable.

B8.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B8.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B9. QUALIFICATION

B9.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Bidder does not carry on business in Manitoba, in the jurisdiction where the Bidder does carry on business;
- (b) be responsible and not be suspended, debarred or in default of any obligation to the City;
- (c) be financially capable of carrying out the terms of the Contract;
- (d) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract;
- (e) have successfully carried out work, similar in nature, scope and value to the Work;
- (f) employ only Subcontractors who:
 - (i) are responsible and not suspended, debarred or in default of any obligation to the City (a list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>); and

- (ii) have successfully carried out work similar in nature, scope and value to the portion of the Work proposed to be subcontracted to them, and are fully capable of performing the Work required to be done in accordance with the terms of the Contract;
- (g) have a written workplace safety and health program in accordance with The Workplace Safety and Health Act (Manitoba).

B9.2 The Bidder shall be prepared to submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B9.3 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B10. OPENING OF BIDS AND RELEASE OF INFORMATION

B10.1 Bid Submissions will not be opened publicly.

B10.2 After the Submission Deadline, the names of the Bidders and their bid prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

B10.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

B10.4 The Bidder is advised that any information contained in any Bid Submission may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B11. IRREVOCABLE BID

B11.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B11.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work for the time period specified in Paragraph 9 of Form A: Bid.

B12. WITHDRAWAL OF BIDS

B12.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B12.1.1 Notwithstanding GC.7.05(2), the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

B12.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid, and only such person, has authority to give notice of withdrawal.

B12.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials shall:

- (a) retain the Bid Submission until after the Submission Deadline has elapsed;

- (b) open the Bid Submission to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and
- (c) if the notice has been given by any one of the persons specified in B12.1.3(b), declare the Bid withdrawn.

B12.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B11.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B13. EVALUATION OF BIDS

B13.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Bid Opportunity (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B9 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B5.

B13.2 Further to B13.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements if the interests of the City so require.

B13.3 Further to B13.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid Submission or in other information required to be submitted, that he is responsible and qualified.

B13.4 Further to B13.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B13.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B13.5 This Contract will be awarded as a whole.

B14. AWARD OF CONTRACT

B14.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B14.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B14.2.1 Without limiting the generality of B14.2, the City will have no obligation to award a Contract where:

- (a) the prices exceed the available City funds for the Work;
- (b) the prices are materially in excess of the prices received for similar work in the past;
- (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
- (d) only one Bid is received; or

(e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B14.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid.

B14.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.

B14.4 Notwithstanding GC.3.01 and GC.3.02, the City will issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.

B14.5 The Contract Documents, as defined in GC.1.01(7), in their entirety shall be deemed to be incorporated in and to form a part of the Purchase Order notwithstanding that they are not necessarily attached to or accompany said Purchase Order.

PART C - GENERAL CONDITIONS

C1. GENERAL CONDITIONS

C1.1 The *General Conditions for the Supply and Delivery of Goods* (Form 21: 88 03) are applicable to the Work of the Contract.

C1.1.1 The *General Conditions for the Supply and Delivery of Goods* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

- D1.1 In addition to the *General Conditions for the Supply and Delivery of Goods*, these Supplemental Conditions are applicable to the Work of the Contract.
- D1.2 The General Conditions are amended by striking out "The City of Winnipeg Act" wherever it appears in the General Conditions and substituting "The City of Winnipeg Charter".
- D1.3 The General Conditions are amended by striking out "Board of Commissioners" or "Commissioner" wherever it appears in the General Conditions and substituting the "Chief Administrative Officer".
- D1.4 The General Conditions are amended by striking out "Tender Package" wherever it appears in the General Conditions and substituting "Bid Opportunity".
- D1.5 The General Conditions are amended by striking out "Tender Submission" wherever it appears in the General Conditions and substituting "Bid Submission".
- D1.6 The General Conditions are amended by striking out "Bidding Instructions" wherever it appears in the General Conditions and substituting "Bidding Procedures".

D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall consist of the supply of automatic vehicle location system units and technical support.
- D2.2 The major components of the Work are as follows:
- (a) supply of automatic vehicle location system hardware and software;
 - (b) provision of technical support/maintenance service.

D3. DEFINITIONS

- D3.1 When used in this Bid Opportunity:
- (a) "**Business Day**" means any Calendar Day, other than a Saturday, Sunday, or a Statutory or Civic Holiday;
 - (b) "**Submission Deadline**" and "**Time and Date Set for the Final Receipt of Bids**" mean the time and date set out in the Bidding Procedures for final receipt of Bids.

D4. CONTRACT ADMINISTRATOR

- D4.1 The Contract Administrator is:
- Ken Boyd, P. Eng.
Support Services Engineer
Streets Maintenance Division
104-1155 Pacific Avenue
- Telephone No. (204) 986-5076
Facsimile No. (204) 986-5566

D5. NOTICES

- D5.1 GC.7.05 is hereby amended to delete reference to "registered mail" and to replace same with "ordinary mail".

- D5.2 GC.7.05 is further amended hereby to include delivery by facsimile transmission (fax) as an acceptable means of delivering notices, consents, approvals, statements, authorizations, documents or other communications required or permitted to be given under this Contract. Deliveries by fax will be deemed to have been received on the day of delivery, if a business day, or if not a business day, on the business day next following the day of delivery.
- D5.3 Further to GC.7.05, all notices, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.4, D5.5 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D4.1.
- D5.4 All notices of appeal to the Chief Administrative Officer shall be sent to the following address or facsimile number:
- The City of Winnipeg
Chief Administrative Officer Secretariat
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9
Facsimile No.: (204) 949-1174
- D5.5 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:
- The City of Winnipeg
Corporate Services Department
Legal Services Division
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1
Facsimile No.: (204) 947-9155

SUBMISSIONS

D6. AUTHORITY TO CARRY ON BUSINESS

- D6.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

SCHEDULE OF WORK

D7. COMMENCEMENT

- D7.1 The Contractor shall not commence any Work until he is in receipt of a Purchase Order authorizing the commencement of the Work.
- D7.2 the Contract Administrator has confirmed receipt and approval of:
- (a) The Contractor shall not commence any Work on the Site until:
 - (i) evidence that the Contractor is in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
 - (b) the Contractor has attended a meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a meeting.

- D7.3 The Contractor shall commence the Work on the Site within seven (7) Calendar Days of receipt of the Purchase Order.

WARRANTY

D8. WARRANTY

- D8.1 Further to GC.10.01, if a defect or deficiency prevents the full and normal use or operation of the Work or any portion thereof, for purposes of calculating the warranty period, time shall be deemed to cease to elapse for the defective or deficient portion, and for any portion of the Work whose use or operation is prevented by such defect or deficiency, as of the date on which the defect or deficiency is observed or the use or operation is prevented and shall begin to run again when the defect or deficiency has been corrected or the Work may be used or operated to the satisfaction of the Contract Administrator.
- D8.2 Notwithstanding GC.10.01, GC.10.02 and D8.1, if any law of Manitoba or of the jurisdiction in which the Work was manufactured requires, or if the manufacturer provides, a longer warranty period or a warranty which is more extensive in its nature, then the provisions of such law or manufacturer's warranty shall apply.

PART E - SPECIFICATIONS

GENERAL

E1. GENERAL

E1.1 These Specifications shall apply to the Work.

E2. GOODS

E2.1 The Contractor shall supply the automatic vehicle location (AVL) system in accordance with the requirements hereinafter specified.

E2.2 Item No. 1 – AVL system units shall include the supply of hardware and software, the provision of supervision for the installation of the units, and the training requirements identified in E8.

E2.3 Item No. 2 – Training shall include all manuals and support equipment required.

E2.4 Item No. 3 – Technical Support/Maintenance Service Fee for Active Units shall be the monthly fee charged for each AVL unit during the active period, estimated to be approximately 7 months per year for a period of 2 years.

E2.5 Item No. 4 – Technical Support/Maintenance Service Fee for Idle Units shall be the monthly fee charged for each AVL unit during periods of inactivity, estimated to be approximately 5 months per year for a period of 2 years.

E3. GENERAL SYSTEM REQUIREMENTS

E3.1 The Contractor shall supply a proven, turnkey, internet based real-time Automatic Vehicle Location system.

E3.1.1 The system shall be capable of tracking, storing and reporting movements and actions, in real time, of a fleet of spreader / snow plow trucks 24 hours a day, 7 days a week over the internet for an unlimited number of registered users. The action and information may include plow up/down, spreader on/off, and application rate and spread width setting.

E3.2 The Contractor shall:

- (a) provide a system that will monitor, store and report in real time the actions of the vehicle in which the system is installed;
- (b) supply of the hardware and software and supervise the installation;
- (c) provide adequate training for the installation and operation of system as identified in E8, and;
- (d) provide a system that will display all vehicle data on a computerize road map to the user.

E3.3 The system shall currently be operational and in use by existing clients and shall not be in the development stage. The Contractor shall have experience in the supply of systems for Public Works types of applications. The Contractor shall supply a minimum of 3 references, upon request of the Contract Administrator.

E3.4 The system shall be capable of interfacing with the current City of Winnipeg GIS mapping system and shall be capable of incorporating City of Winnipeg GIS data and airphotos.

E4. HARDWARE REQUIREMENTS

E4.1 The system must be capable of operating in field conditions experienced in the operation of snowplows.

- E4.2 The system shall be enclosed in a suitable water resistant, salt resistant, shock and vibration resistant device.
- (a) Vibration requirements shall be per TIA/EIA 603 par.3.3.4.
 - (b) Shock resistant requirements shall be per TIA/EIA 603 par.3.3.5; MIL STD-810E 516.4 Proc1.
- E4.3 The system shall be capable of operating at temperatures ranging from -40°C to 60°C and humidity up to 95% RH @ 50°C (non-condensing).
- E4.4 The system shall be capable of operating on 12 V vehicle electric power or 24 V electric power with an adapter.
- E4.5 The system shall be able to interface with existing material spreader systems including Rex-Roth, CS440, CS230, Dickey John and Parker.
- E4.6 The system shall be capable of capturing a minimum of sixteen (16) digital sensor inputs and shall have a minimum of four (4) analog to digital inputs, four (4) dedicated outputs and two (2) RS232 ports.
- E4.7 The Geographical Positioning System (GPS) antennae shall be suitable for mounting on all equipment and supplied with variable length cables to connect to said equipment.
- E4.8 For the GPS, the positional accuracy shall be a minimum of 5 meters, the velocity accuracy shall be no less than 1 meter per second and the heading accuracy shall be a minimum of 5 degrees.
- E4.9 Time to first fix shall be maximums of 150 seconds for cold start, 60 seconds for warm start, and 15 seconds for reacquisition after losing signal.

E5. DATA COLLECTION AND TRANSMISSION

- E5.1 The wireless remote download shall be in real time with reporting capability of the event changes every 10 seconds or in a distance of 100m or any combination there of.
- E5.2 Firmware must have the capability of being remotely upgradeable via wireless interface from a central location.
- E5.3 Firmware shall be a web browser based remote configuration capable of one second reporting intervals, C++ development environment with SDK allowing for firmware updates and TCP/IP stack including PPP HTTP FTP.
- E5.4 The system must be able to operate with a telecommunication system service provider within the City of Winnipeg which includes Manitoba Telecom Services, Rogers Communications and Telus. The City of Winnipeg may request the Contractor to negotiate with the telecommunication system carriers for a service plan that is in the best interest of the City of Winnipeg. The City of Winnipeg will pay the airtime charges directly to the selected telecommunication carrier.
- E5.5 The system shall allow viewing of the vehicle in motion leaving "breadcrumbs" as it travels with arrow indicators for direction showing all operations as they occur, including exact street location. Warning indicators shall activate when unit is not in motion for a set period of time. Map navigation selections shall include zoom in and out, center and label.
- E5.6 The system shall have the automated email operations reports preconfigured and customized sent daily.
- E5.7 Information from equipment to the database shall include vehicle number, vehicle speed, direction and location, engine on and off, engine idling vs. running time, time and distance measured by each monitoring sensor and optional road temperature sensor data. This equipment must communicate together via RS232 port.

- E5.8 The material spreader information shall include:
- (a) Material being used
 - (b) Dry material application rate
 - (c) Wet material application rate
 - (d) Spinner mode
 - (e) Pause status
 - (f) Blast status
 - (g) Error event status
- E5.9 The system shall contain wireless data communication equipment capable of interfacing with any onboard sensors such as plow up/down, spreaders on/off, and application rate and spread width settings, sweeper brooms on/off and up/down and shall include their status information with collected data. This data shall be sent to a data warehouse that shall be under the auspices of the successful bidder. Warehoused information shall be exported to the City of Winnipeg using industry standard forms when requested and or any City of Winnipeg existing database. It shall be the successful bidder's responsibility to suggest the equipment and network which will best supply the highest reporting interval between transmissions sent from vehicle to database.
- E5.10 Maximum time between transmissions shall be 30 seconds. Equipment shall be capable of reporting at one-second intervals. The equipment shall be remotely reconfigurable to:
- (a) Set distance and time reporting intervals
 - (b) Set destinations for data communications
 - (c) Sensor status changes and expansion of devices such as road temperature sensors
 - (d) Have the option of being able to have data display.
- E5.11 The system shall have a real time exception reporting system to immediately send customizable exception parameters when triggered to email, cell phones and pagers.
- E6. DATA VIEWING SYSTEM**
- E6.1 All data to be reported in real time and viewed by authorized City of Winnipeg personnel via standard web browsers on their personal computers
- E6.2 Display information to include map view of vehicles in service, status of said vehicles and any onboard monitoring sensors when last reported, with automatic updating.
- E6.3 User shall have the option to select between available maps to view equipment locations. Vehicle operator query shall contain a map of present vehicle locations. Vehicle locator query shall show a map of vehicle locations as per last report. Transmission of data shall begin when vehicle is started.
- E6.4 Reports shall include items such as material usage, material costs, operating distance and total miles travelled
- E6.5 The system shall be able to generate summary reports based on data supplied and user's input. Reports shall be customizable as per the user's request including ad hoc queries for any non-standard input values
- E6.6 Report are to be based on a single or group of vehicles, vehicle route, and or all vehicles and routes
- E6.7 Area reports shall be available based on geographic boundaries supplied by the City of Winnipeg

- E6.8 Any activity shall be made available for replay of any vehicle or route. Replay time frame will be determined by the City of Winnipeg. Playback shall have fast forward and rewind capabilities
- E6.9 Historical data shall be accessible for playback on a map screen and be downloaded via text file or XML format.
- E6.10 System display information shall be depicted only after authorization and authentication of employee is completed.
- E6.11 The list of authorized users shall be determined by the Manager of Streets Maintenance or his designate.
- E6.12 User interface to present only that information for which the City of Winnipeg deems same user authorized to possess.
- E6.13 Multiple authorizations shall be enabled for those employees allowed to access system from multiple locations. Each vehicle shall have a unique identifier that can only be changed by the System Administrator.
- E6.14 User privileges shall be password protected.
- E6.15 System shall allow modification of the number of vehicles to be monitored, sensors to be monitored and monitor characteristics.
- E6.16 System shall have the ability to incorporate user cost elements. Data collected by the system shall be stored in a secure, password-protected database. All data collected and data transferred shall be encrypted and secured from unauthorized access. Data access to be initiated by client request exclusively.
- E6.17 Collected data shall be made available online for up to 1 year after start up.
- E6.18 Archived data shall be provided to the City of Winnipeg on CD-ROM or DVD.

E7. INSTALLATION AND REPAIR

- E7.1 All splices shall be soldered and protected with heat shrink tubing. All power connections for any installed item must be made to an existing power source, e.g. terminal block. The fuse panel shall not be used to supply power for the system.
- E7.2 The GPS system shall be protected by a separate fuse breakers of proper rating.
- E7.3 Emergency mobile service must be available within 24 hours of a service call for a breakdown. This service must be available 7 days a week, 24 hours a day, 365 days per year. Service must be provided at regular service rates or warranty where applicable.

E8. TRAINING

- E8.1 The Contractor shall provide supervision for the installation of all hardware and all necessary software training.
 - (a) For the purpose of evaluation assume training to mean:
 - (i) Daily rate for one business day;
 - (ii) Small group format of up to (10) ten people;
 - (iii) City provided facility at a site designated by the City of Winnipeg

E9. TECHNICAL SUPPORT / MAINTENANCE SERVICE FEE

- E9.1 The technical support maintenance service fees shall be in place for a 2 year period.

E9.2 The technical support / maintenance service fee shall include any upgrades to software for the system.

E9.3 The Contractor shall provide technical support 24 hours a day, 7 days a week through a toll free phone number.

E10. DELIVERY AND INSTALLATION

E10.1 Goods shall be delivered and installed be on or before February 28, 2007.