

PART E

SPECIFICATIONS

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GENERAL

E1. GENERAL

- E1.1 These Specifications shall apply to the Work.
- E1.2 The responses to Clauses E2 to E11 shall be clear and explain:
- (a) What work is in the scope of their Proposal; and
 - (b) What work is out of scope or considered to be work that only City staff can do.

E2. UPGRADES

- E2.1 Bidders shall explain their relationship with the machine manufacturer and any guarantees for future availability of upgrades, and how their proposed equipment is compatible with all of the following upgrade technologies
- E2.2 The unit shall be capable of the following upgrade technologies:
- (a) Electronic locks to enhance security;
 - (b) Complimentary uses of credit and smart cards in other public applications;
 - (c) Coupons and local promotions applied to ticket stock;
 - (d) Magnetic stripe affinity or loyalty cards or programs;
 - (e) General greeting messaging;
 - (f) Maintenance system tracking.
- E2.3 The unit should be capable of the following upgrade technologies:
- (a) Hand held enforcement devices communicating with pay stations;
 - (b) In-vehicle metering;
 - (c) Hand held payment via personal digital assistant (PDA) or cell phone;
 - (d) Pay stations as information kiosks, providing directions, event-ticketing, etc;
 - (e) Public garage equipment, which may or may not be supplied by the vendor;
 - (f) Smart and store value cards;
 - (g) Shared parking and transit card mobility programs;
 - (h) PDA payment;
 - (i) Cell phone payment;
 - (j) Purchase magnetic stripe and/or smart cards from local convenience vendors;
 - (k) Audible commands;
 - (l) User assist messaging;
 - (m) Programmable messages, transmitted via two way communication;
 - (n) Special events messaging;
 - (o) Ability to print and read bar code information;
 - (p) Wireless two way voice and data communication with Enforcement;

- (q) Accept payment for parking citations, using magnetic stripe or smart card;
- (r) On line, real time mapping of units with status indicators (e.g. GIS map of the City, displaying unit locations and status -normal, warning or alarm);
- (s) Pay stations as way finding services, providing directions and map displays, perhaps built into or affixed to the housing.

E3. DETAILED TECHNICAL SPECIFICATION

Physical Characteristics

E3.1 Units shall have:

- (a) Separate compartments for maintenance and collections;
- (b) Areas surrounding the coin box armoured to provide additional security;
- (c) No access to the money in the cash box when the upper or lower housing is open for maintenance or collection;
- (d) Weather resistant material; and
- (e) Graffiti resistant coating on:
 - (i) unit housing.

E3.2 Bidders should explain:

- (a) Any paint or coatings options;
- (b) All available color and material combinations;
- (c) The proposed schedule for re-paint resurfaces or re-coat under normal use;
- (d) The availability, advantages and cost of stainless steel housing;
- (e) Product housing: Materials, thickness, and how the design secures the unit against attempted theft.

User Interface

E3.3 Units shall include:

- (a) Detailed instructions to the user supplied on machine face using simple symbols;
- (b) All coin and card aperture locations compatible with Province of Manitoba standards for the Physically Disabled;
- (c) Controls and operating mechanisms operable from the pedestrian access route; customers must be able to use the device with one hand, not requiring tight grasping, pinching, or twisting of the wrist;
- (d) controls which require no greater than 5 pounds pressure to operate;
- (e) Instructions to the customer, such as rates and hours of operation, displayed on the front vertical surface of the meter;
- (f) Apertures that are designed and/or shielded to discourage vandalism, insertion of foreign material or other efforts to deliberately jam the unit and the design should prevent damage from the insertion of any type of commercially available pyrotechnic device.

E3.4 Bidders should explain how units have a:

- (a) Minimal number of buttons for the user to understand;
- (b) Minimal number of machine apertures such as, but not limited to, the coin return, receipt dispenser and card reader.

Hardware and Software

- E3.5 Software shall be Windows NT 4.0 compatible.
- E3.6 Databases shall be Win 2000 compliant.
- E3.7 All hardware and software required for communicating with, programming or monitoring any of the supplied units shall be included.

Security

- E3.8 Units shall have:
- (a) High security locks with anti-drill protection;
 - (b) Separate keys to prevent maintenance personnel from entering the collection area and Collection personnel from entering the maintenance area;
 - (c) Vandal resistant doors with internal or recessed hinges;
 - (d) Mounting assemblies with vandal resistant hardware.

Cash Box

- E3.9 Units shall facilitate:
- (a) Collections performed via a portable coin canister or sealed unit made of rigid or impermeable material. The canister shall be strong, lightweight and manageable;
 - (b) During normal operations, a closed coin path that directs coins to drop into a locked cash box. The collector shall not have access to the coins in the cash box during the collection process.
- E3.10 Each cash box shall:
- (a) Be quipped with a self-locking mechanism activated when the coins are removed from the unit. The Contractor shall provide sufficient collection boxes per machine unit;
 - (b) Have ability to be sealed with an external seal;
 - (c) Have a security locked keyed system separate from the unit's other compartments;
 - (d) Have a handle or grip for easy handling;
 - (e) Hold a minimum of \$400 worth of Canadian coin; nickels dimes, quarters, dollar and two;
 - (f) Hold dollar coins, and any other future denominations.
- E3.11 Unit must retain all audit information at time of collection such as current revenue and historical stream information.
- E3.12 Bidders should indicate the number of cash box to be provided per unit.

Pedestal Installation

- E3.13 Units shall include:
- (a) Delivery of each fully prepared pay station to Site by the Contractor;
 - (b) Installation of the base per factory specifications to any Site specified by the Contract Administrator:
 - (i) The Contractor will be responsible for service locates at each site, which may include parkland or other landscaped areas where there is no concrete for footing.

- (c) everything required including pedestal base installation kit, all anchors, bolts, plates, etc., needed for a complete free standing installation;
- (d) all installation drawings and specifications;
- (e) full local installation and commissioning support;
 - (i) "local" is defined as within a 100km radius of the City of Winnipeg, or close enough to provide twelve (12) hour responses to software and hardware service requests;
- (f) Engineer's drawing outlining the hardware/equipment and means required for mounting to a shallow curb or landscaped area; and
- (g) All materials, parts and supplies necessary for the units.

Solar Power

E3.14 Units shall:

- (a) Be powered by a commercially available battery and solar power cell which maintains a positive charge on the battery, and must provide charging to a backup battery. Solar apparatus shall be designed specifically to meet the power requirements of the unit, Battery MUST operate without service, change out, or manual recharge for a period not less than two months;
- (b) Have Solar panels built into the unit and integral to visual design. Pole mounted or solar panels are not acceptable:
 - (i) Use of after market solar systems are not acceptable;
 - (ii) If solar power is not available, unit has capability to complete a minimum of 300 transactions without requirement to recharge/replace the battery;
 - (iii) Changing of the power source can be performed with minimal use of tools.
- (c) Have battery indication to facilitate timely replacement of batteries. A separate backup battery must be supplied to sustain the clock, calendar, audit information and RAM in the event of a main backup system failure or during battery replacement.

E3.15 Units should:

- (a) Not use lithium batteries:
 - (i) If lithium batteries are proposed, vendor must also propose to dispose of used lithium batteries at own expense.

Electronic Components

E3.16 Units shall include:

- (a) All circuit boards and internal components that are environmentally sealed, highly water-resistant and operate in conditions of over 90% humidity and temperature extremes between +35 and -35 degrees Celsius;
- (b) Wiring that is secured tightly to door mechanism when the door is opened;
- (c) Subassemblies that are modular in construction to provide easy servicing through on site "plug and play" replacement of parts;
- (d) High quality electronic connection plugs designed that clearly identify both halves of each plug, to prevent deliberate or inadvertent reversal of the plug, and include retaining clips to ensure a continuous, positive connection between the two halves of the plug;
- (e) A platform for distribution of coupons/receipts and credit cards/smart cards, and have potential for upgrade to accommodate new services in the near future;
- (f) Provide a proven credit card solution, communication centre and office "back end" for card processing and delivery of funds to City accounts.

E3.17 Units should include:

- (a) Plugs color coded to prevent deliberate or inadvertent connections of incompatible components.

E3.18 Bidders should explain:

- (a) How unit components are protected from moisture, dust and other factors that might cause an operational failure of a component or the unit;
- (b) If plugs with color coding and retaining clips are not provided, how alternatives will ensure a continuous, positive connection for components and avoid deliberate or inadvertent reversal of the plug.

Display

E3.19 Displays shall:

- (a) Be backlit for night time visibility and protected by Lexan windows, or equivalent material. Displays shall be easily readable under various daytime and night time lighting conditions;
- (b) Use date style (DD.MM.YY) and time (HH:MM AM/PM);
- (c) Include time of day, increments of payment - amount entered and time purchased and an indication of total time remaining after the transaction is completed or the time of day when the amount of time paid for will expire;
- (d) Indicate all necessary operating status messages to users and repair personnel including display indicating:
 - (i) Coin Only -if the card slot is inoperable;
 - (ii) Card Only "- if the coin slot is inoperable;
 - (iii) Error- if the card is inserted improperly;
 - (iv) Need Card -if the card is torn from the unit;
 - (v) Out of Order -if both the coin and card slots are inoperable.

E3.20 Display layout and functionality are subject to approval by the Contract Administrator, before delivery.

E3.21 Displays should:

- (a) Be capable of displaying different fonts and styles of characters on the same screen;
- (b) Indicate unit status when maintenance code is entered;
- (c) Show each Message and Warning with the following options:
 - (i) Display;
 - (ii) Do not display;
 - (iii) Displayed within time/date frame.

E3.22 Bidders should explain:

- (a) The language choices available for display and how language(s) are selected;
- (b) The Graphics, graphic design, and screen format updateable through the supplied desktop software package and downloadable to individual or multiple units via two way communication or backup hand held unit;
- (c) How the display is able to accommodate custom messages. Explain the capabilities of the display screen used.

Printer

E3.23 Units shall:

- (a) Provide thermal impression ejection type with a built-in paper-jam detector, where receipt is printed internally and ejected to the customer;
- (b) Advise standard receipt capacity before refilling:
 - (i) Able to print variable ticket lengths with various text messages in pre-defined different fonts and formats;
 - (ii) Equipped with a self -sharpening cutter blade or approved equivalent;
 - (iii) Easily removable for maintenance and capable of using generic standard paper supply.

E3.24 The City shall be able to specify machine color, logos and printed instructions at a later date.

Coin Validator

E3.25 Units shall:

- (a) Have an automatic coin shutter, which will open for coin or token insertion, but not for plastic, wood, cloth, and all non-metal objects;
- (b) Have Coin validator able to reject foreign coins and slugs;
- (c) Not allow any tampering with its internal functions, to prevent any time to be given in any manner, other than the insertion of a valid coin/token or card;
- (d) Prevent coin validation by means such as a coin attached to a string or by other removable device(s);
- (e) Accept several user-defined coins or tokens through software parameter change only;
- (f) Have rejected coins exit through the coin return;
- (g) Prevent coin and debit card transactions used for testing purposes from registering in the total revenue register;
- (h) accept credit or smart card forms of payment if the coin slot is jammed (inoperable).

E3.26 Bidders shall explain:

- (a) How the Coin validator feature above would prevent coin and debit card transactions used for testing purposes from registering in the total revenue register;
- (b) How, if the coin slot is jammed, the machine would still accept credit or smart card forms of payment.

Credit and Smart Card Reader:

E3.27 Units shall:

- (a) Contain a dual credit card and smart card reader capable of reading magnetic stripe and smart memory and microprocessor cards;
- (b) Accept coin form of payment if card slot is jammed (inoperable);
- (c) Be equipped with the capability of accepting multiple smart card schemes, such as MasterCard and Visa.

Alarm

E3.28 Units shall:

- (a) have built in diagnostics software that records dates and time stamps all operations events (warnings, unit failures, resets, low battery, etc) for reports to the communications center;
- (b) be able to send warnings for all of the following reasons:
 - (i) Cash box status;
 - (ii) Alarms;
 - (iii) Attempted theft of unit;
 - (iv) Unit out of order;
 - (v) Open door;
 - (vi) Paper supply low;
 - (vii) Low battery;
 - (viii) Power failure;
 - (ix) Machine is working properly or any other related maintenance items.

E3.29 Bidders should explain other warning capabilities that may be available.

Receipt

E3.30 Units shall provide:

- (a) Receipt records the following information printed on it with time (HH:MM PM/AM) and date (DD/MM/YYYY) formats;
- (b) Unique receipt number;
- (c) Transaction time and date;
- (d) Expiration time and date;
- (e) Amount paid;
- (f) Machine number;
- (g) Owner may determine logos, graphics, layout and design of the receipt at any time;
- (h) Coupon support.

E4. REPORTS

E4.1 Units should create ad hoc reports about on street parking operations on a daily basis.

E4.2 Software shall generate, at a minimum, the following reports for a specified from/to date range:

- (a) Revenue by pay station number;
- (b) Revenue by location (route reporting) area;
- (c) Revenue by maintenance route;
- (d) Maintenance activity by location number;
- (e) Maintenance activity and operational status;
- (f) Maintenance activity by type;
- (g) Exception report for units not repaired;
- (h) Operational status by unit;
- (i) Daily collection report with location numbers and audit;

- (j) Exception report for units not collected.

E4.3 Software shall generate, at a minimum, the following reports for inventory

- (a) Current location by unit number.

E4.4 Software shall generate, at a minimum, the following reports for location by collection area:

- (a) Location by maintenance route;
- (b) Location by rate;
- (c) Location by enforcement hours;
- (d) Location by type (truck loading, no parking, time, bus, taxi and police zones, etc).

E5. CRITICAL OPERATING TEMPERATURE

E5.1 Units shall operate effectively under severe weather conditions and in a temperature range from at -35° C to + 35°C and 97% non-condensing humidity.

E5.2 Bidders should provide references from cities with similar climate conditions to Winnipeg, MB, Canada. Winnipeg has several weeks of extreme cold (-20 degrees to -40 degrees) each winter. The City will only consider units that operate reliably on solar power in the EXTREME cold, and a letter or certificate of performance from an authorized cold weather testing chamber is provided to the Contract Administrator within five (5) Business Days of a request by the Contract Administrator.

E6. TRAINING

E6.1 The Contractor shall provide a minimum of forty (40) hours of training at a designated City of Winnipeg facility for each City designated employee to develop expertise in the maintenance and repair of their product, including, but not limited to:

- (a) Troubleshooting repairs;
- (b) Operations -programming, inventory;
- (c) Collections.

E6.2 For the purpose of Bidding, Bidders shall assume:

- (a) Five (5) contiguous business days minimum;
- (b) Small group format of up to six people;
- (c) City provided facility and computer equipment.

E6.3 Bidders shall provide an outline of the training content and provide a training schedule for both software and hardware.

- (a) Bidders shall include a schedule for periodic refresher training (continuing education), including, but not limited to, emphasis on particular areas of the City's choice and upgrades of software and/or hardware.

E7. PERFORMANCE STANDARDS

E7.1 Bidders shall explain existing performance standards and experience for each unit and how it will perform under normal and extreme cold operating conditions and anticipated rates of failure for each unit, including a breakdown by component type.

E7.2 Bidders shall provide references that demonstrate performance on similar contracts.

- E7.3 Suppliers should provide existing maintenance program schedules used by two (2) agencies that have had their product on street for the past two-(2) years. Factors applicable will be:
- (a) Installation schedule performance (delivery, appearance of units);
 - (b) On street performance consistent with specifications (operation of hardware and software within specification parameters);
 - (c) Quality (compliance with contract terms, conditions and specifications);
 - (d) Field product support;
 - (e) Warranty performance (response to service calls).

E8. WIRELESS OPERATION

E8.1 Units shall:

- (a) Communicate via wireless cell network to a central communications centre for credit card clearance and machine alarm and maintenance monitoring;
- (b) Be capable of wireless two-way communication to a remote communication center to transmit financial and activity reports and unit status;
- (c) Establish the communications between the units and the Bidder's communications center;
- (d) Transmit information including, but is not limited to:
 - (i) Coin canister status (lower limit warning when coins reach a programmable amount and an upper limit warning when machine shuts down);
 - (ii) Alarms (attempted theft of unit, unit out of order, door open, out of paper, etc.);
 - (iii) Management data consisting of purchase of time (occupancy), time, purchased intervals (duration), type of transactions (coin and card with amounts paid) etc.;
 - (iv) Financial information retained after transmission to ensure no loss of data;
 - (v) Record and store the number of valid coin and card transactions and accurate to a minimum of 99% of actual deposits.

E8.2 Bidders shall explain:

- (a) In detail, plan for pay station auditing and reconciliation procedures that track electronic revenues (magnetic stripe and/or smart card) to and from the pay station to the financial clearinghouse. The clearing house system must conform to International Standards Organization (ISO) standards for authorization messages;
- (b) In detail, all of the equipment proposed and the security measures employed to protect data access and integrity. Access to City data must be secured, at a minimum, by password protection, and must include multi-level access control;
- (c) In detail how their wireless two-way communication system works, including technical (components, frequency, etc) and practical (on line, real time status) elements;
- (d) How the units transmit data to remote communication center indicating status; manage data (occupancy, duration, etc); and make multiple attempts to transmit until the data is received;
- (e) How the system contains sufficient memory to store transmitted data (bad card list, etc).

E9. COMMUNICATION CENTRE

E9.1 Communication center operators shall:

- (a) Make multiple attempts if card payment doesn't clear;
- (b) Transmit expired/invalid card lists to units via two-way communication;

- (c) Group units for common messaging;
- (d) Assign units to predetermined groupings, parades and other community events;
- (e) troubleshoot system and process credit/debit transactions.

E10. CASH COLLECTION

E10.1 The Bidder may propose one or more of the following alternatives for cash collection including but not limited to using:

- (a) their own staff;
- (b) a third party collection service(such as Brinks);
- (c) City of Winnipeg staff.

E10.2 The Bidder should include all security measures for each alternative proposed.

E11. PARTS

E11.1 Units shall have:

- (a) Replacement components available from a local distributor and additional components available within twelve (12) hours;
- (b) Tools needed to replace modular components (1 set for each 25 units).

E11.2 Units should have:

- (a) Interchangeable modular parts for all internal components.

E12. TECHNICAL SUPPORT

E12.1 Contractor shall provide:

- (a) Technician(s) readily available, capable of handling unit repair and programming, to respond within twelve (12) hours;
- (b) A toll free number support for troubleshooting both software and hardware, an up to date web site with all information available to the City;
- (c) Any software and hardware backups needed available within twenty- four (24) hours;
- (d) All operating manuals that support installation, maintenance and user information (1 per 50 units);
- (e) Wiring diagrams and specifications in English (1 per 50 units).

E12.2 The Bidders should provide:

- (a) An average time of repair and audit transactions, under normal operating conditions, for both wireless two ways and hand held communication.

E13. EXTENDED MAINTENANCE

E13.1 The Contractor shall provide full maintenance until the expiration of the Warranty period.

- (a) Full maintenance shall include all incidental warranty related costs (including, but not limited to, Contractor's travel, mileage, deductibles, etc.) in executing any part of the warranty shall be the sole responsibility of the Contractor.

E13.2 The Bidder may propose costs for full maintenance coverage after the expiration of the Warranty period.

- E13.3 For the purpose of maintenance or warranty repairs, the Bidder should have an authorized service facility located within the boundaries of the City of Winnipeg. The facility, or a portion thereof, shall be qualified to service and maintain the type equipment being offered. Further to B11, Bidders shall provide a description of the service facility including, but not limited to, number of qualified service staff, years of service experience, and general service capabilities within three (3) Business Days upon request of the Contract Administrator.