

Response to RFP #4382-14-JE for Credit Card Enabled Single Space Meters



For The City of Hollywood, Florida ELECTRONIC COPY

Submitted by: J.W. (Jim) Taylor
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A. LETTER OF TRANSMITTAL

MacKay Meters, Inc., ("MacKay") is pleased to present our response to supply City of Hollywood ("City") with **MacKay Guardian™ SOLO** parking meters, along with the web-based back office software, **Sentinel™ Meter Management System**, in response to this RFP. It is our understanding that the City is initially looking for 200 single-space, credit card accepting parking meters with supporting software.

The MacKay Guardian™ SOLO wireless single space meter (SOLO) is an excellent upgrade. It allows the City a means to replace "coin/smart card only" single space meters with state-of-the-art wireless meters. The SOLO supports credit card, coin, and smart card payment and is designed to allow for other payment options such as contactless credit cards and cell phone payment. The SOLO is

equipped with a cellular modem that provides real time credit card authorization as well as communications with the back office software, Sentinel™ Meter Management System (Sentinel™ MMS), which the City already uses for its pay stations.

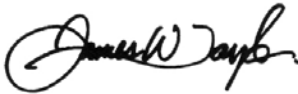
All MacKay equipment is manufactured in North America, and is designed to adhere to today's stringent PCI, PADSS security, ISO 9001:2008 Manufacturing and ADA usage and design components standards. The City staff will be trained on all aspects of the system functionality and supported by our Sunrise, Florida office in addition to toll free support from our head office.

The person authorized to make representations on behalf of MacKay Meters, Inc. is

James MacKay, VP of Sales
MacKay Meters, Inc.
1342 Abercrombie Road, New Glasgow, NS, B2H 5E3
Tel: (902) 752-5124 x295
Toll Free: (888) 462-2529 x295
james.mackayr@mackaymeters.com

Should you have further questions in regards to this proposal please don't hesitate to contact me directly.

Respectfully,



J.W. (Jim) Taylor
MacKay Meters, Inc.
1342 Abercrombie Road, New Glasgow, NS, B2H 5E3
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B. PROFILE OF PROPOSER

B.1 DESCRIPTION OF THE PROPOSER

J.J. MacKay Canada Limited (individually or collectively referred to as “MacKay”) is a recognized world leader in the parking control business. Incorporated in 1960, MacKay has gained global recognition by providing our customers with innovative products.

MacKay Meters, Inc., a wholly owned subsidiary of J.J. MacKay Canada Limited, was incorporated in September of 1996 in the State of Florida, USA. MacKay Meters, Inc. is the distributor of the MacKay product line throughout the United States.

MacKay is headquartered out of New Glasgow, Nova Scotia, Canada, with its Research and Product Development office in Halifax, Nova Scotia, Canada. Sales and service offices are located in Scarborough, Ontario, St-Jean-sur-Richelieu, Quebec, and **Sunrise, Florida**.

The MacKay product line includes:

- Single-space parking meters featuring the MacKay Guardian™ X Series mechanisms and the **MacKay Guardian™ Solo wireless credit card meter**.
- Single-space parking meter housings, locks and decorative posts.
- The MacKay Guardian™ Multi Elite multi-space parking control machines.
- Citation+™ parking enforcement software solutions.
- Various third party ancillary parking control equipment including handheld computers; gates, vehicle boots or clamps; and other miscellaneous products.

MacKay sells its product line through its regional sales and service offices, its subsidiary companies and a worldwide distributor network. MacKay has more than 500,000 fully electronic parking meter mechanisms in service worldwide and over 2000 pay stations.

MacKay was the first single-space parking meter Company in the world to be ISO 9001:2000 certified and has had this prestigious quality assurance recognition since 1995. MacKay is now ISO 9001:2008 certified.

The proposed SOLOs will be built at MacKay's manufacturing facilities at head office, tested, then installed and supported by the Sunrise, Florida office.

MacKay has not been involved in any litigation in the past 5 years nor is any pending.

B.2 REFERENCES

The following references are for both MacKay Guardian™ SOLO installs:

- 1) Waterfront Development Corporation Limited, Halifax, NS
Contact: Mr. Adam Langley, Operations Manager
Waterfront Development Corporation Limited
The Cable Wharf, 1751 Lower Street, Halifax, NS, B3J 1S5
Phone: (902) 422-5115 Ext. 112
Fax: (902) 422-7582
Email: adamlangley@wdcl.ca
- 2) City of Moncton, NB
Contact: Mr. Stephane Thibodeau, Transportation Coordinator
City of Moncton
655 Main Street, Moncton, NB, E1C 1E8
Phone: (506) 383-6718
Fax: (506) 853-3543
Email: Stephane.Thibodeau@moncton.org
- 3) Wilfrid Laurier University
Contact: Mr. Andre Claxton, Parking Operations Supervisor
Waterloo, Ontario N2L 3C5
Phone: (519) 884-1970 Ext. 4396
Email: aclaxton@wlu.ca

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C. SUMMARY OF MACKAY'S QUALIFICATIONS

C.1 PROJECT MANAGER

The project manager for this project is Mr. J.W. (Jim) Taylor.

C.2 TECHNICAL SUPPORT TEAM

MacKay will provide on-going support to the City through phone and email support. MacKay has a toll-free number that can be used by City staff. Support will be provided by MacKay's Customer Service department. The MacKay team includes specialists like Mr. Daniel Benoit, Mr. Mark Sloan, Mr. Jason Munro and Mr. Bill MacKenzie, who have been involved in complex projects and who are flexible in

managing both transitional and operational issues as they arise. The customer service department has supported our equipment throughout the world and has the unique abilities to train customers and provide technical support of the product.

As the Sentinel™ Meter Management System is a hosted web-based service, configuration management and system data security is managed by MacKay. The City will administer designated staff log-in accounts to the system and are responsible for the actions of their staff using the services.

Normal MacKay office hours are 8:00 a.m. to 4:30 p.m. Atlantic, Monday to Friday excluding statutory and Company holidays. However, telephone support will be provided by MacKay's Customer Service department from 6:00 a.m. to 6:00 p.m. Eastern, Monday to Friday excluding statutory and Company holidays (1-888-462-2529).

C.2.1 On-Site Support

MacKay's office in Sunrise Florida continues to be available for on-site support when required. Scheduling of support technician time will be done through MacKay's Customer Service Manager. Mr John Berthault is the technician from the Sunrise office that will be available for on-site support.

C.2.2 Customer Service Team

The customer service liaison will be MacKay's Customer Service Manager, Mr. Daniel Benoit. Mr. Benoit, located at MacKay's head office, will be the first point of contact for the management of the warranties for the various products that are part of this project. The customer service department will be responsible for supporting the City's parking meter project, including but not limited to providing software updates/upgrades/enhancements as they become available. The Customer Service Manager will administer a database of initial products procured and installed on-site including the maintenance history of delivered products during the warranty period.

C.2.3 Customer Support through Training

MacKay places a strong emphasis on delivering the highest standards in training. For the equipment provided, at an agreed date and time, MacKay will provide sufficient training (on consecutive days) on the MacKay Guardian™ SOLO meters and Sentinel™ Meter Management System.

Training will focus on the specific characteristics of the products, their capabilities, and user interface with the system. The training sessions can be divided into small groups of technicians/staff according to their respective tasks. Groups can be formed for collection, maintenance/repair and system reporting and management. Training shall be such that each trainee learns by significant 'hands on' experience under the guidance of an experienced trainer, assigned by MacKay to carry out an agreed list of first line fault corrections, maintenance and other operations.

The delivered training programs will enhance the capabilities of the operations and maintenance functions. All training will be supported by a variety of printed training materials, as well as a complete set of technical manuals. In addition, customer service or sales support staff can arrange "go-to meetings" (internet/phone meetings) to further provide on-line training sessions/support.

As training will take place during the installation of the SOLO meters with City staff present, all normal customer and owner functions will be fully tested and operational by the end of the training session. This final testing will be witnessed by the City staff.

C.2.4 Maintenance

We understand that your technicians will provide regular maintenance for these products. As required, MacKay staff can be on-site to provide necessary maintenance support. Our office can be retained on an as needed basis to provide any supplementary or additional maintenance or training required by the City. Fees for these services, including after warranty support, if required can be negotiated based on our regular charge out rates for these types of services.

Since all of the equipment is made primarily of modular components, we believe the City will find that the maintenance requirements to keep it operational are minimal and easily managed with appropriate and thorough training of City staff by MacKay together with a few spare meters and spare parts inventory maintained by the City.

MacKay will provide all the required operation and maintenance manuals necessary to operate and maintain the product and software. Carrying out the prescribed maintenance procedures therein, and as instructed from time to time by MacKay in writing, is necessary to ensure that the warranty on all products and software purchased from MacKay is not void.

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D. PROJECT UNDERSTANDING, APPROACH AND METHODOLOGY

D.1 PROJECT UNDERSTANDING

MacKay will provide the City with MacKay Guardian™ SOLO LD meters that will fit into the City's existing MKH 4000 housings.

The SOLOs come with two battery packs; a lithium rechargeable pack that is charged by the solar panel on the SOLO and an alkaline battery pack (6 x D cell) that acts as a backup if the lithium pack gets too low. This combination will keep the SOLOs running for many years under normal usage.

Training will be provided with onsite support during installation. MacKay would coordinate a time with the City when best to install the new SOLOs once the credit card account information is setup and tested. MacKay's service staff will assist installing the meters and training the City staff on the maintenance and support of the meters. The SOLO's installation process and set-up is simple and easy for your staff of installers. During that time, designated City staff will be trained on the Sentinel™ Meter Management System, focusing on maintenance alerts, financial reporting, and all areas of additional reports available for the City's operational use. Training materials, including documentation and videos, will be available as a resource and are included in the cost of the meters.

D.2 PROJECT IMPLEMENTATION PLAN

Below is a proposed project implementation plan outline.

1. Training:

During the initial project implementation period, MacKay will provide up to 24 hours of training to City designated employees on the normal operational use of the MacKay Guardian™ SOLO meters and Sentinel™ Meter Management System delivered to City.

2. Support:

Mr. J.W. (Jim) Taylor, Project Manager on this project, and MacKay staff, will be on-site during the installation period to assist with installation and commissioning efforts. Mr. Daniel Benoit, Customer Service Manager will be the City's first point of contact for any support during the initial project implementation period. During the contract period, MacKay will provide phone and email support as and when required, at no cost to City.

3. Warranty:

MacKay will provide warranty service as per the Requirements of this RFP.

D.2.1 City Deliverables

The Implementation and Deployment Schedule is subject to timely performance, delivery or receipt of the following City Deliverables. The City will provide the following Deliverables as follows:

Prior to On-Site Installation

1. City will ensure that Merchant account set-up for credit card clearance is initiated.
2. The following information is provided to MacKay prior to the delivery of the SOLOs to the City:

- i. Required information to set up credit card payment gateway account using City's merchant account (MacKay form to be provided to City for completion)
 - ii. All required meter display messaging and housing messaging, if any, necessary for the commissioning of the meters;
 - iii. All required meter profiles (time, rates, blinking of LEDS, grace periods, etc.)
 - iv. All Post ID and meter profile for each post.
3. Site is identified and readied for installation of meters. If necessary, posts are straightened and height adjusted to meet any City/State disability access requirements before installation.
4. All required street signage messaging for the commissioning of the meters. If required, procurement of any required street and/or parking lot signage. Installation of any required street and/or parking lot signage or space markings.

During On-Site Installation

1. City will have designated staff ready for and will assist MacKay with the pre-installation inspection/test of meter equipment
2. Carry out proposed install site inspection with MacKay.
3. City will remove and store old meter mechanisms.
4. City will assist MacKay installing the SOLOs.
5. City will provide the location for any training to be provided by MacKay.
6. City will have designated staff ready for any eventual scheduled training sessions provided by MacKay including single-space meter training to Parking Control Officers ("PCOs), maintenance staff and meter management system ("Sentinel") training to maintenance and finance/management staff.

D.2.2 Sample Implementation & Deployment Schedule

All products will be delivered to a City designated location prior to/during the installation period. Delivery is subject to timely delivery or receipt of the City Deliverables as set out above.

Implementation Schedule

Week 1 – perform site inspections, pre-installation inspection and test of meter equipment

Week 1 – single-space meter training

Week 1, – install single-space meter

Week 1 – meter management system training

Below is a detailed description of the process for deploying the SOLOs and Sentinel™ Meter Management System with proposed deployment schedule, including timelines, hardware, and software.

Deployment Schedule Meters:

Process Steps. (Name) indicates party responsible for this Step.
Prior to MacKay being On-site:
<ul style="list-style-type: none">• SOLO configuration form is completed prior to product shipment.
<ul style="list-style-type: none">• Merchant account set-up for credit card clearance is initiated. (All associated merchant account fees, credit cards costs and related bank fees are the responsibility of City)
<ul style="list-style-type: none">• Payment Gateway Account Activation (MacKay/City) [To be completed prior to product shipment to City.]
<ul style="list-style-type: none">• Wireless Communications Accounts have been established. (MacKay)
<ul style="list-style-type: none">• If required, procurement of any required street and/or parking lot signage. (City)
While MacKay is On-Site:
<ul style="list-style-type: none">• Carry out proposed install site inspection (MacKay/City) [Both MacKay and City to sign off on site location as being acceptable.]
<ul style="list-style-type: none">• Pre-installation inspection/test of meter equipment (MacKay/City) [Assumes this is done at City meter shop.]
<ul style="list-style-type: none">• Ensure rate and display configuration matches requirements of each location. (MacKay)
<ul style="list-style-type: none">• Carry out single-space meter training to PCOs and maintenance groups (MacKay) [Assumes this is done at City meter shop.]
<ul style="list-style-type: none">• Remove old meters and caps (MacKay/City)
<ul style="list-style-type: none">• Install new back covers (MacKay)

Process Steps. (Name) indicates party responsible for this Step.
<ul style="list-style-type: none"> Install new meters and do operational test of each payment type (coin, credit card) (MacKay/City)
<ul style="list-style-type: none"> Confirm each meter install is detected on MMS (MacKay)
<ul style="list-style-type: none"> Installation of any required street and/or parking lot signage or space markings. (City)
<ul style="list-style-type: none"> Carry out meter management system training to City staff, PCOs, maintenance and finance/management groups (MacKay) [Assumes this is done at City meter shop.]

Deployment Schedule Sentinel™ Meter Management System:

Process Steps. (Name) indicates party responsible for this Step.
Prior to MacKay being On-Site:
<ul style="list-style-type: none"> Set up and configure Sentinel™ Meter Management System software and database (MacKay)
<ul style="list-style-type: none"> Build required rate structures (tariffs) (MacKay)
<ul style="list-style-type: none"> Configure meters with credit card clearing gateway information (MacKay)
<ul style="list-style-type: none"> Verify meters configured with correct cellular gateway information (MacKay)
While MacKay is On-Site:
<ul style="list-style-type: none"> Support proposed install site inspection (MacKay)
<ul style="list-style-type: none"> Support pre-installation test of all meter equipment (MacKay)
<ul style="list-style-type: none"> Confirm each meter install is detected on MMS (MacKay)

D.3 WARRANTY

We believe the need to provide extensive warranty services can be minimized through the application of recognized Quality Assurance processes in the design and production of products, as well as in the delivery of services. We apply this philosophy to all products we manufacture. MacKay's quality management system is registered to ISO 9001:2000.

Despite our best efforts, there will be times when the City will require additional help in operating or maintaining the products and systems to be supplied. We recognize that in these instances, prompt response will be key. We believe it is critical that the City has a strong technical support for the equipment being purchased.

A Product Support Technician from MacKay's Customer Service Department will administer the product warranty provisions. To reduce the time and effort required to make warranty claims and/or enquiries, the Customer Service Department will serve as the single point of contact with City officials for warranty service. This will include user support and troubleshooting for the proposed system. A Product Support Technician will be available from 8:00 a.m. to 4:30 p.m. AT, Monday to Friday excluding City and Company holidays. He/she will be backed up by the Customer Service and Research and Product Development departments of MacKay. MacKay will ensure that an appropriate designee is available when the Product Support Technician is unavoidably absent or unavailable. We believe that this warranty approach will ensure that the City receives the highest level of customer care at all times.

By working closely with City staff, the Product Support Technician will maintain familiarity with the City's parking operations as they evolve over time and will be able to provide the City with telephone support. Additionally, the Product Support Technician will also be able to provide the City's staff with refresher training when required by the City. Fees for these services, if required, are based on our regular charge out rates for these types of services.

D.4 WARRANTY COVERAGE

MacKay will also provide a two (2) year warranty on all **MacKay Guardian™ SOLO meters** to repair and/or replace any part or modular component determined to be defective in material or workmanship under normal use and service. MacKay's standard warranty terms will apply.

To maintain warranty coverage, City technicians are required to provide the prescribed regular maintenance for these products. MacKay will provide the City with all operating and maintenance manuals necessary to operate and maintain the product and software. Carrying out the prescribed maintenance procedures therein, and as instructed from time to time by MacKay in writing, is necessary to ensure that the warranty on all products and software purchased from MacKay is not voided.

A copy of MacKay's standard one (1) year Hardware Warranty (second year is an extended warranty included) for the MacKay Guardian™ SOLO meter as offered in response to this RFP, is found on the following page.

D.4.1 Hardware Warranty

Terms of Warranty

MacKay Meters, Inc. and J.J. MacKay Canada Limited ("MacKay")

The product that you have purchased is warranted by the manufacturer, J.J. MacKay Canada Limited ("MacKay"), for a period of one (1) year from the date of delivery against defects in workmanship and/or materials. The warranty starts one (1) month from MacKay's recorded shipping date.

This warranty specifically excludes any other product not manufactured, but sold by MacKay, as these products are warranted by their respective manufacturers.

Workmanship and/or parts that prove to be defective during the warranty period will either be repaired, adjusted or replaced at MacKay's option. No repair, adjustment or replacement by MacKay in response to a warranty claim shall extend the length of the warranty. MacKay's obligations under the warranty are restricted to repair or replacement of defects in workmanship and/or materials.

Should repair become necessary during the warranty period, send your product, postage or freight prepaid, to our service center at 1342 Abercrombie Road, Pictou County, Nova Scotia, Canada, B2H 5C6 or as advised from time to time. Any product repaired or replaced under this warranty will be returned to the owner with freight prepaid. MacKay will not accept delivery of the product or any of its parts for warranty repairs unless prior authorization has been given. Contact MacKay for return procedure.

The foregoing warranty is exclusive and in lieu of all other express warranties and implied warranties, including but not limited to, the implied warranties of merchantability and fitness of purpose, which are specifically excluded. In no event shall MacKay, its agents, servants, contractors and subcontractors be liable for damages including, but not limited to, economic and consequential losses such as loss of revenue, loss of profits, loss of business or loss of goodwill whether direct or indirect or any other incidental, exemplary and punitive damages whether in contract, tort or otherwise or any other claims or expenses in any manner resulting directly or indirectly from or connected with the supply of the products.

Any improper or negligent use, any alteration or repairs not in accordance with MacKay's written directions or performed by others in such manner as in MacKay's sole judgment affects the product materially and adversely, shall void this warranty.

This warranty does not cover damages, defects or failures caused by or due to accident, improper handling or operation, use of products for experimental purposes, natural disaster, vandalism, misuse, terrorism, abuse and neglect of routine maintenance as instructed by MacKay from time to time.

The customer is responsible for the security of its parking system including hardware and software. The customer has been made aware by MacKay of the types of theft and fraud which may occur. The customer acknowledges and agrees that MacKay is not responsible in warranty or in contract for any repair, replacement or damages of any sort caused by fraud and/or theft or illegal means.

No employee or representative of MacKay, its agents, servants, contractors and subcontractors is authorized to change this warranty in any way or grant any other warranty unless in writing and signed by an officer of MacKay.

April 1, 2006

D.5 OPTIONAL PAY BY CELL SOLUTIONS

MacKay supports third party pay by cell solutions through Sentinel™ MMS. The following sections outline the current agreements in place for third party pay by cell support should the City desire a pay by cell solution.

D.5.1 Park Mobile



FOR IMMEDIATE RELEASE:

CONTACT:

Tina Dyer
Parkmobile USA, Inc.
770 818 9036
770 818 9039

tina.dyer@parkmobileglobal.com
www.parkmobile.com/US

CONTACT:

Roger Plamondon
MacKay Meters, Inc.
1-888-462-2529 x244
Fax: 902-752-5955

roger.plamondon@mackaymeters.com
www.mackaymeters.com

MacKay Meters, Inc. partners with Parkmobile USA, Inc. to offer Pay by Phone services and integrated enforcement and reporting systems

Parking customers now have the convenience of paying for parking at a MacKay meter with Parkmobile.

Atlanta, June 3, 2011 – Parkmobile, USA, Inc.,

The world's leading global provider of seamlessly integrated end-to-end parking solutions, has partnered with MacKay Meters, Inc., the manufacture of Single Space and Multi Space parking equipment hardware, parking enforcement software solutions and including but not limited to all hosted management software and related ancillary products to their parking clients worldwide. The partnership and systems integration with Parkmobile will allow parking customers the option of paying by phone. The Parkmobile system instantly updates the MacKay Sentinel back office meter management system with real-time payment information to allow MacKay's customers the ability to see all parking payments at once, regardless of the payment option parking customers choose.

“Integration between the two systems allows for an additional and convenient payment mode to be utilized by the end user. A Cell Phone payment offers advantages on many levels for the operator, one being the reduction in coins or bills in the equipment. The goal is to increase functionality, reduce maintenance and allow for more proactive reporting of parking transactions, all while increasing compliance for parking in the system by the end user.” Says Mr. J.W. (Jim) Taylor – MacKay Meters, Inc. Business Development Manager.

Taylor also indicates that “The database integration and data mining of the two systems, provides a common path for enforcement and reporting, while providing an excellent migration path for future parking and enforcement developments.”

The MacKay Sentinel back office meter management system software provides comprehensive financial reporting and enforcement tools which help allow for more seamless management of large complex parking operations. The Parkmobile Pay by Phone option not only allows customers another way to pay, but also lets customers know when time is expiring and offers the option to add time to a parking space without having to return to the parking lot or space.

“Our partnership with MacKay is very exciting. MacKay brings over 50 years of experience in both single space and multi space meters. They have a large global footprint and they provided their customers with innovative solutions that are recognized as being on the leading edge of technology,” said Albert Bogaard, CEO of Parkmobile USA, Inc. By partnering with MacKay, we can continue to focus on expanding our core business and advance cashless parking payment technologies, while MacKay streamlines and sells its products and brings new innovations in parking solutions to our service model.”

To use Parkmobile’s service, drivers register for free by setting up an account at www.parkmobile.com, where they can also download a mobile app. Once registered, customers can use the mobile app, the internet, or a 1-800 number to pay for parking. The mobile apps for iPhone, Android and Blackberry are very easy to use.

About Parkmobile

Parkmobile is a leading global provider of seamlessly integrated end-to-end solutions for pay by phone parking and digital parking permits. Parkmobile is now widely used in 100 cities around the world by millions of registered users. Parkmobile USA was founded in Atlanta, Georgia and has become one of the largest providers of cashless parking systems in the United States. The company's call center, engineering team and corporate headquarters are located in the U.S. For additional information, please visit www.parkmobile.com

D.5.2 Pay By Phone (Verrus)



MacKay has agreed to partner with PayByPhone to offer their pay by cell phone application in conjunction with MacKay's products.

PayByPhone was founded over ten years ago and is now North America's leading provider of mobile payments in the parking industry. PayByPhone operates across North America and Europe in over 180 cities including London, Miami, Vancouver, Newcastle, San Francisco and Paris. Over three million people have signed up to use the PayByPhone service.

Motorists find the PayByPhone service easy to use and appreciate the many user friendly options the service provides - such as a text reminder before a parking session expires. This enables the motorist to add additional time without the hassle of returning to their vehicle. At the same time, parking operators increasingly recognize that mobile payments can both reduce the costs associated with operating expensive pay and display machines as well as increasing revenue per parking session.

PayByPhone operates on a state-of-the-art IT platform that supports payments via touch-tone/IVR, text, the Internet and mobile web. The technology is both robust and highly secure. PayByPhone is accredited by Visa as a Level 1 data processor under the Payment Card Industry Data Security Standards - the highest level of accreditation available.

Formerly known as Verrus, PayByPhone is part of PayPoint ,a leading international provider of convenient payments and value added services to major consumer service organizations in the utility, housing, water, telecoms, media, financial services, transport, retail, e-commerce, gaming and public sectors. PayPoint delivers payments and services through a uniquely strong combination of local shops, internet and mobile distribution channels and handles over \$16 billion annually from almost 590 million transactions annually for more than 6,000 clients and merchants.

PayByPhone supports MacKay's Sentinel™ Meter Management System to create a singular point of enforcement and to optionally put time on the new single space wireless meters; the MacKay Guardian™ SOLO.

For more information on PayByPhone solution, please see appendix.



E. TECHNICAL REQUIREMENTS

MackKay is proposing the MacKay Guardian™ SOLO wireless single space meter (SOLO) that will accept coins, smart cards and credit/debit cards (including non-pin debit cards). The SOLO uses a solar panel to recharge a primary battery pack and uses a long-lasting alkaline battery pack as a backup power source when the solar recharged battery pack is too low. The meters use wireless communication for on-line, real-time credit card approvals and for communications with the back end software, Sentinel™ Meter Management System (Sentinel MMS).

E.1 COMPLIANCE TABLE

The following table outlines MacKay's compliance with the specifications as outlined in the RFP. Where exceptions are made or more information is required, a note is added in red below the specification.

General Specifications	Comply	Notes
Single-space parking meters shall have the following primary features.		
Single space parking meters shall be capable of accepting payment via coins, credit cards and debit cards (non-pin), and contact smart card at the meter terminal. Credit card shall include Visa and MasterCard. It is the Contractor's responsibility to provide the visual information (i.e. stickers, etc.) to alert the public that credit cards are accepted at the meter.	✓	
Single space parking meters must be EMV capable in the future. Vendor must provide an explanation of how the meter can be made EMV capable, including a list of all parts necessary.	✓	✓
The MacKay Guardian™ SOLO with contactless payment is EMV capable when equipped with our contactless reader and has received EMV Level 1 Contactless Certification. Pricing for this option is outlined in section F.3.1. and the certification is in the appendix.		
Credit card reader must be angled in such a way to minimize rain intrusion.	✓	
Meters shall be wirelessly networked via the cellular network (3G or better modem) and connected to a web-based management system. No wireless communication hardware is to be installed on street/utility/traffic light poles other than the meter mechanism itself. No additional customer software other than an Internet browser shall be required to access the management system. All bids shall include a minimum choice of two wireless cellular network service providers to allow the City to choose the provider with the most reliable and widely available coverage at locations the meters will be installed. Bids may be rejected if all cellular network service providers identified in a bid cannot provide adequate coverage at the desired locations.	✓	
Single space meters shall use solar panel and combination rechargeable/back-up battery pack to provide reliable, continuous, ongoing power and backup power so that the meter is functioning 100% of the time.	✓	
Single space meters shall wirelessly notify parking operations staff of any faults, such as low battery, a card reader or coin validator jam, via a text message, email, or both.	✓	

Meter mechanisms and associated top cover (dome) will retrofit to the City's currently installed meter housing base without modification to the existing base or housing. Meter mechanisms shall fit MacKay Model MKH4000 or equivalent meter housings.	✓	
2.0 OPERATION AND RATES	Comply	Notes
The following rate and operating characteristics shall apply to all meter mechanisms purchased.		
2.1 FIXED RATE – same rate all day, for select/every day(s) of the week. Meters can be remotely programmed for holidays, special events or other rate changes via the web-based management system and will not require City staff to interface with the meters to accomplish such a rate update.	✓	
2.2 MULTIPLE-RATES – varied rates throughout the day, up to a minimum of 6 times. This can include Tow-Away, No Parking, Progressive, Reserved, or Free parking options, in addition to hourly parking rates for normal metering time. Meters can be remotely programmed for holidays, special events or other rate changes via the web-based management system and will not require City staff to interface with each individual meter to accomplish such a rate update.	✓	
2.3 EVENT PARKING – meters can be programmed to accept event parking rates, such that flat rate payment will enable the vehicle to park for a pre-determined amount of time. For example, \$15 for a fireworks event, such that the rate begins at 8pm and the \$15 results in the meter being paid for the duration of the event.	✓	
2.4 The mechanism shall be capable of displaying the rates per hour, maximum stay (time period), and other customized messages or graphics on the meter LCD.	✓	
2.5 Changes/updates to all rate structures, maximum stay (time limits), available payment methods, and hours of meter operations shall also be managed and updated via a web-based management system, providing remote management capability.	✓	
3.0 GRAPHICAL DISPLAY	Comply	Notes
3.1 Single space parking meter shall have a graphical liquid crystal display (LCD) which is capable of displaying metered time (format of HH:MM, including negative time capability), parking rates and maximum stay period messages, current time of day (including time when meter will expire), as well as other alpha-numeric messages depending on the status of the meter.	✓	
3.2 The LCD displays must be remotely programmable via web-based meter management system, such that the meter staff is not required to be present at the meter for changes to be made.	✓	
3.3 Front display shall be visible by motorists to support ADA compliance considerations.	✓	✓

Poles may need to be shortened if too high for ADA compliance. MacKay recommends the pole height be at 28" for the MKH 4000 and LD SOLO to stay under the 48" ADA standard.		
3.4 For increased visibility in low-light conditions, the LCD shall be backlit. Backlight will be enabled automatically via light sensitivity, and will require no additional settings to be adjusted. Additionally, backlight will only be enabled during a transaction in order to conserve battery power.	✓	
3.5 In addition, a UV resistant (non-yellowing) polycarbonate material should be used to protect the LCD and solar panel.	✓	
3.6 The polycarbonate material must be treated with an anti-fog coating to maximize the user's ability to interact with the display at all times.	✓	
3.7 In the event of a coin jam, meter will continue to allow payment via credit card or debit card. During such a jam, the meter will display "Cards only, No Coins" on the LCD display. In the event of a card reader jam, meter will continue to allow payment via coins. During such a jam, meter will display "Coins only, No Cards" on the LCD. In either event, the meter must be able to wirelessly notify maintenance staff of the location and type of jam via email, text message or both. In the event that both a coin jam and card reader jam are present, the meter will display "Out of Order". All of these messages can be remotely updated and programmed via web-based management system.	✓	
4.0 EXPIRATION INDICATION	Comply	Notes
4.1 Enforcement shall be managed via flashing LEDs with a millicandela rating of 5000mcd or greater and 30 degrees or greater viewing angle, which shall be available on the back of the meter. Additional LEDs should also be available on the front of the meter to provide the user with a visual indicator of paid vs. unpaid status. Such a feature will also assist with on-street enforcement. The standard configuration will be GREEN for paid status and RED during expired time. Meters shall have ability to remotely program expiration grace period, duration of flashing LEDs, and other LED operating parameters via web-based management system.	✓	
5.0 COIN VALIDATION	Comply	Notes
5.1 Electronic parking meter shall be fully electronic with solid state components and straight down, free-fall coin chute. Standard coin recognition shall include, but is not limited to, US denominations of \$0.05, \$0.10, \$0.25 and \$1.00 coins. The meter should also incorporate a feature that will count invalid coins, such as washers, gaming tokens, etc., so that the City may monitor the areas where this kind of activity is taking place. No time will be given for these fraudulent coins.	✓	

5.2 The coin validator (also referred to as “coin acceptor”) shall detect metallic as well as non-metallic jams. Jam clearance shall be accomplished without special tools or disassembly of the meter. The coin validator shall be a removable component for the purposes of clearing coin or other types of coin validator jams. Coins passing through the mechanism shall be deposited into the coin box in the meter vault when the mechanism is properly installed in the upper housing. In the event of a jam, the meter must have the ability to notify City staff of a jam via email, text message or both.	✓	
6.0 POWER	Comply	Notes
6.1 Single space meters shall be equipped with an integrated solar panel recharge system. This solar panel will be incorporated into the inside of the meter housing, in order to prevent damage due to operating conditions or vandalism.	✓	
6.2 Battery pack shall consist of a combination rechargeable/back-up battery pack to provide reliable, continuous, ongoing power and backup power so that the meter is functioning 100% of the time. Battery pack shall have a minimum life capability of 12-36 months without replacement (depending on wireless features enabled in single space meter model).	✓	
7.0 CREDIT CARD PAYMENT	Comply	Notes
7.1 Payment with a credit card must utilize a hybrid card reader built into the single-space meter mechanism. The hybrid card reader will allow for use of both magnetic stripe credit card and smart card. Users will insert (smart card) or insert/remove (credit card) the card to start the payment process. Users will then have the ability to toggle up (add time) or down (less time) to select the amount of time to be purchased, up to the maximum and down to the minimum metered time. Users can then select “OK” to purchase, or can press “CANCEL” to stop the transaction.	✓	
7.2 For ease of installation and security, the credit card reader shall be integral to the mechanism design and shall not require any additional modification to the meter housing to install.	✓	
7.3 The Contractor shall provide secure and reliable gateway service to provide for secure (encrypted) credit card data transmission to the City’s merchant account provider.	✓	
7.4 Credit card data transmission shall meet the Payment Card Industry (PCI) Data Security Standards and Contractor shall provide evidence of PCI-DSS Level 1 certification.	✓	

7.5 If a third party vendor is used for the payment gateway services, Contractor must provide the name of the payment gateway provider, and the terms and conditions of Contractor's agreement with the gateway service provider must be included in the proposal. In addition, City must be able to have access to gateway provider website in order to obtain bank submissions for credit card settlements.	✓	✓
MacKay uses CreditCall for the credit card gateway services		
8.0 WIRELESS DATA and MANAGEMENT SYSTEM CAPABILITIES	Comply	Notes
8.1 Each meter shall be individually capable of transmitting wireless data (3G or better modem) for the purposes of payment card processing, coin transactions, updates to the operating features and rate configuration of the meter, as well as fault notification. The wireless capability must be integral to the meter mechanism design and shall not require a secondary connection to a wireless device. Such communication will be accomplished without any additional networking equipment that would need to be installed on City street poles or any other location, such as buildings, etc.	✓	
8.2 Updates to meter software, such as meter firmware and operating software, must be able to be performed wirelessly and will not require City staff to interface with each individual meter to accomplish such an update. Any costs associated with software upgrades must be submitted prior to implementation.	✓	
8.3 The single-space meter management system shall not be dependent on the interaction of individual handheld devices and each meter in the field. Management system shall be completely web-based system accessible via desktop computer, laptop computer, or handheld wireless device to authorized personnel. No additional software other than an Internet browser shall be required for the management system to be accessed and fully used in conjunction with the single-space meter products. This shall provide access to the meter management system from authorized user 24/7 over the web.	✓	
8.4 Management system shall provide a variety of reports to include financial, technical, and administrative functions via a single web-portal. No additional software will be required to access and update the meter system, other than access to an Internet browser. Reports shall include, but are not limited to:		
o Credit card reconciliation (daily, weekly, monthly, annually)	x	✓
Credit cards can be reconciled manually but an automated reconciliation report is not currently available for the SOLOs		
o Cash collection reports (by date, time, pole, and collector)	✓	
o Revenue Summary reports (daily, weekly, monthly, annually, by zone, route, street or pole)	✓	
o Coin box level (% full)	✓	

o Individual transactions (cash or credit) by pole	✓	
o GPS location of meters on a map with statistical mouse-over feature	✓	
o Ability to change text on LCD remotely	✓	
o Adjudication Reports	✓	
o Ability to change rates and other operating parameters remotely via the internet	✓	
o Meter uptime (over time, by zone, street, and pole)	✓	
o Maintenance software for logging Service requirements over time	✓	
o Meter paid occupancy reports	✓	
o Cumulative totals of all cash and card transactions & percentage of total	✓	
o Exception reports for units not performing as required (communications or payment faults)	✓	
o Access to Help materials and User Manuals shall be available on-line	✓	
9.0 ADDITIONAL DESIRED FEATURES	Comply	Notes
9.1 Meter shall allow for the use of additional cards to be used with the same hybrid credit card / contact smart card reader for the purposes of accessing meter diagnostics, cash collection, and allow for time to be added to the meter during a maintenance event without affecting the revenue audit. The use of these cards must be logged and can be presented as one of the report options in the web-based management system. Other methods that meet the requirements of this section and subsections but use something other than cards will be accepted.	✓	
9.1.1 Diagnostics Card: with the use of a diagnostics card, and without opening the meter housing, the meter must provide specific information relating to the current meter operating status. Features shall include the ability to:	✓	
View the current assigned meter configuration and software version	✓	
View the battery level (for rechargeable and non-rechargeable) and solar panel charge level	✓	
Test the operating condition of the card reader	✓	
Test the operating condition of the coin validator	✓	
Test the integrated wireless communications	✓	
Allow for the meter to be turned off	✓	
9.1.2 Coin Collection Card: with the use of a coin collection card, and without opening the meter housing, the meter must allow for the user to clear the coin box counter at the time of cash collection. The effect of this card is to provide a cash audit feature that is available in the web-based management system that will allow visibility of the time, card used, cash value collected, and a detailed summary of the coin types collected.	✓	

9.1.3 Meter Maintenance Card: with the use of a meter maintenance card, and without opening the meter housing, the meter maintenance card must allow the maintenance staff to put time on the meter to compensate a motorist in the event of meter maintenance activity. The time put onto the meter will not affect the revenue audit, but can be logged and displayed in the web-based management system.	✓	
9.2 RFID Automation: The meter mechanism shall have the capability to communicate with an Radio Frequency Identification (RFID) tag mounted inside of the meter housing such that the meter will automatically know where it is located and be able to download its pole specific location configuration (rates, display information, max stay period, etc.) from the host server based upon information stored on the RFID tag. Other methods to accomplish the intent of this section will be accepted if they perform the same function in substantially the same manner as noted above.	✓	
10.0 METER TOP COVER (METER DOME)	Comply	Notes
10.1 The upper housing dome shall be made of adequate material such as ductile iron or Zinc die cast material, which provides exceptional weather protection and resistance to vandalism. It shall lock in place using same lock/key system in place today. A window will provide clear view of the digital display and must be made of polycarbonate, UV stabilized to resist yellowing and internally coated to prevent fogging. The outer surface of the meter top cover is painted with an automotive grade material, which provides excellent resistance to weather and salt-water, fading from sunlight, and shall provide a tough, scratch-resistant and easily cleaned surface.	✓	
11.0 WARRANTY AND SUPPORT	Comply	Notes
11.1 The warranty shall be comprehensive and cover any defects in materials or workmanship, and shall include all associated parts of the mechanism, including but not limited to, credit card reader, coin chute, batteries and solar panel. Copies of the standard warranty, as well as any additions or exceptions shall be included with the bid proposal.	✓	
11.2 Technical support shall be available from the manufacturer or through an authorized representative during the warranty period at no additional cost to provide the City with the necessary training to utilize the meters and associated software. Initial training and setup will require a representative be present at the City to assist with getting the meters on-line and training staff on the use of the software. Additional technical support may be provided by telephone, email or other means and will not necessarily require the presence of a representative at the City.	✓	

E.2 MACKAY GUARDIAN™ SOLO – SPECIFICATIONS

The **Mackay Guardian™ Solo** consists of high strength zinc alloy metal covers and frame, consisting of an upper front cover assembly attached to a lower frame assembly, mated with a back cover assembly. All electronic components and sub-assemblies are held or mounted within the upper front cover assembly and the lower frame assembly.

Figure 1 – LD SOLO installed in MacKay MKH4000 Housing

When placed into and secured into a traditional light or heavy duty meter housing, there is no longer a need for a traditional “cap” or cover as the metal front and back cover assemblies also provide the necessary strength and security previously provided by the old “cap”, while still offering the public a large user display, numerous payment options and a large rear enforcement display. The Solo is designed such that when unlocked, the front cover assembly, along with the attached lower frame assembly, can be easily detached and removed from the back cover assembly and meter housing.

Alternatively the front cover assembly has a unique feature in that it can be detached from the back cover and hinged open leaving the lower frame assembly in the housing. This allows for the most common forms of service work such as inspecting/clearing coin chutes, card slots and battery replacement to be done with the meter held in place freeing up the technicians hands. The main controller board assembly containing the processor, program memory, and other circuits together with the rechargeable battery pack and many other electronic components are secured internally to the front cover assembly, while the coin chute, peripheral boards and main or non-rechargeable battery pack are secured in the lower frame assembly. All of these components are easily inspected and serviced when the meter is unlocked and the front cover assembly is hinged forward into its open/service position.

The lower frame assembly (including the coin chute and backplane board plus any optional peripheral boards such as an RFID Reader Board or vault door sensor interface) is electrically connected to the main controller board by way of a 20-pin ribbon cable. The coin chute is rigidly held in place when the lower front zinc frame member is attached to the lower back zinc frame member.

The large main non-rechargeable battery pack is attached to and powers the main board by way of its own 4-wire harness. It is located in the lower frame assembly and is secured in place by its own weight in a large plastic battery holder attached to the back of the lower frame assembly. The appropriate



stainless steel coin slot is dropped into place on the lower front frame member. A hanger on the back of the battery cover allows the meter to be hung to the exterior of the housing for coin testing.

When viewed from the front, the separate coin and card slots are visible. Both are accessible to the user when the Solo is installed into mechanism housing. Above and slightly back is the back-lit graphics LCD, visible through a rectangular opening on the front cover. The LCD screen is larger and far easier to read than those on competitive models. To the left of the LCD, are the light sensor and three visual indicator LEDs for use by enforcement and maintenance staff. The red and green LEDs are used for enforcement or meter status indication, usually to indicate that the meter is OK/in a valid “time purchased” state or to indicate that the meter is in an expired state. The yellow LED is used primarily to indicate that service or maintenance is required. The card slot is for accepting either chip based smart cards, as well as traditional magnetic stripe type credit cards. The coin slot is used to accept coin payment as well as allow for communications between the optional portable data terminal (PDT) and the Solo using the RF probe interface.



Figure 2 – LD SOLO installed in MacKay MKH 1000 Zinc Housing

E.3 GENERAL SPECIFICATIONS

General Specifications

- Compatible with all MacKay mechanism housings and many competitor's housings (including Duncan Model 90).
- Ergonomically designed upright position for ease of use and ease of view.
- Many attractive color paint options available as desired by City.
- Manufactured under ISO 9001:2008 certified quality processes.
- Designed to work under extreme environmental conditions.
- Operating temperature range: -30°C (-22°F) to 80°C (176°F).

Power Source Details

- High efficiency, solar recharged, lithium-ion battery pack. The large Solar Panel is larger than those on competitive models and benefits from more direct and ambient light gathering capability and

quicker battery recharging times.

- High capacity 6 x D size alkaline battery pack.
- Battery packs are easy to replace on-street without the use of tools.

Keypad & Human Interface Details

- Four weather resistant buttons for selecting menu items.
- Buttons include an up arrow, down arrow, “OK” and “X” for cancel.
- Buttons provide an audible feedback to confirm they have been pressed.

Front Graphical Display

- Large, hhigh-contrast, high-visibility, and easy to read Liquid Crystal Display (LCD) and Light Emitting Diode (LED) technologies.
- LCD has fully programmable displays and LED back light for effective night-time operation.
- Large display – 4cm (1.5 inches) x 7cm (2.75 inches) with 64 x 128 pixels.
- Client controlled customizable screens that can be sent remotely using Sentinel™ Meter Management System (MMS)



Figure 3 - Heavy Duty SOLO on Iron Housing

Rear Display

- Large and highly visible display - 2.5cm (1 inch) x 7.5cm (3 inches). It flashes red and silver to indicate “Time Expired” or solid silver for valid parking time.
- Can display text “EXPIRED”, “OUT OF ORDER”, two 1.27cm (1/2 inch) high No Parking Symbols.
- Dual colour (Red/Green) Super Bright LED's on both front and rear.
- Flashing LED visible at distance of 24 meters (80 feet) at night.
- Programmable for maximum flexibility in enforcement options.

Communication and Data Transfer

- Supports multiple secure interfaces for communication including:

Wireless cellular radio	Radio Frequency (RF)
X-Key programming port	Future Expansions

Coin Payment

- Patented SmartChute™ coin discriminator proven in hundreds of thousands of meters worldwide.
- 3-coil design provides accurate coin reads and long life.
- Straight-drop/clear view coin chute allows for superior detection and removal of foreign objects.
- Coin chute is easily and quickly replaced/ serviced in the field without the need for special tools.
- Coin chute calibration or chute training is not required.
- Sorts up to 16 different coin/token signatures and uses a single entrance slot.
- Can be programmed to detect non-metallic jams such as paper/gum.
- Validates and discriminates coins electronically by two different coil sensors/methods.
- Invalid coin indicator on display.

Credit Card Payment

- Single card slot for both credit card and smart card payment.
- Card reader rated at 50,000 insertions and constructed for easy maintenance.
- Real time credit card authorization through cellular communications.
- PA-DSS validated.
- Angled insertion design to prevent water ingress.



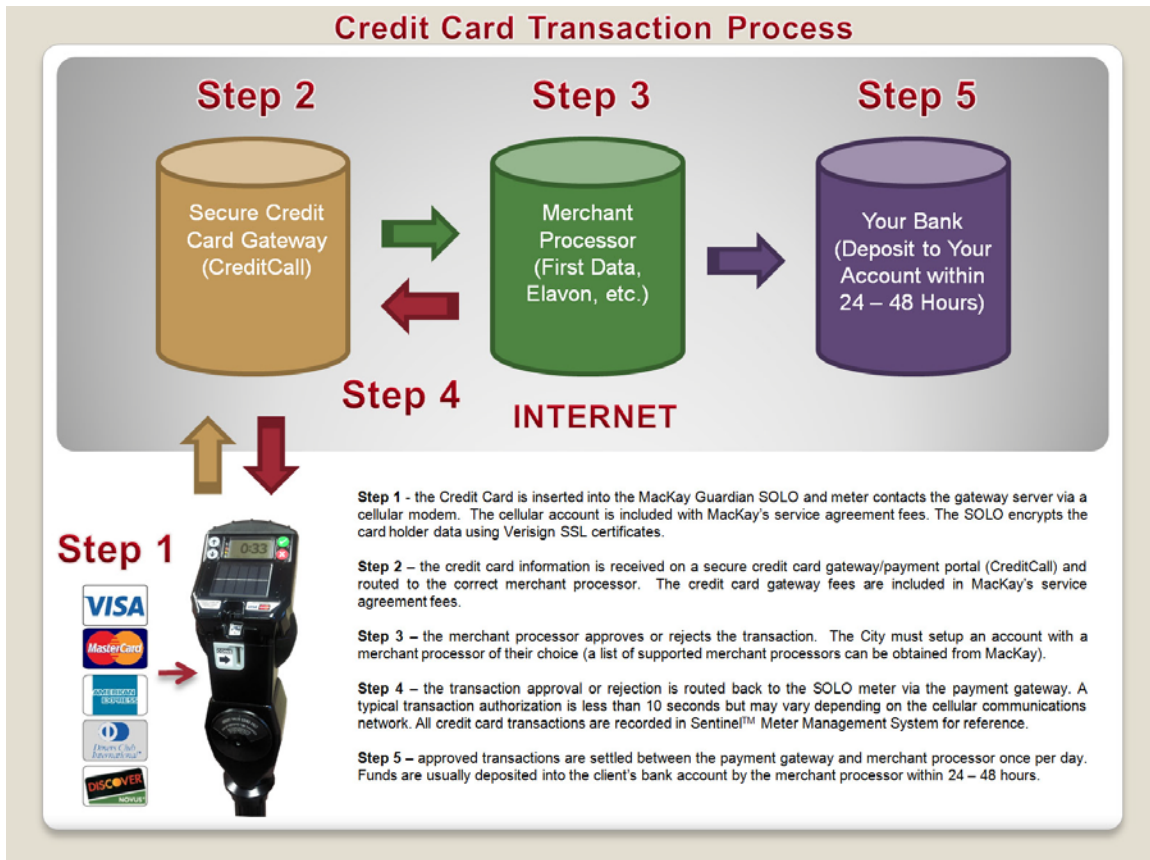


Figure 4 - Credit Card Transaction Process - Real Time

ISO Card System (Smart Card)

- Programmable to use one (or more) of the following ISO7816 compliant card payment technologies:
 - Microprocessor cards capable of using sophisticated security algorithms to deter fraud. (E.g. DES)
 - Reload able/reusable type memory card used as a token based stored value card.
 - Card payment schemes requiring active authentication.
- Card reader can optionally support up to three security access modules (SAM).

Smart Housing, Collection System, and Access Cards (optional)

- Supports RFID tags for automatic post assignment.
- Supports collection card for audit report cut off.
- Supports maintenance card for meter testing.

Transaction Data

- All operational, maintenance and financial data is sent wirelessly to Sentinel™ MMS.

- Transaction log stores time-stamped data for the last 2,000 coin and/or card transactions.

Programmable Features

- Highly flexible rate/tariff/max-time structure including:
 - Up to eight (8) defined rates with defined max time for each.
 - Standard rate operation.
 - Time-of-day rate/max time control.
 - Day-of-week rate/max time control.
 - Day-of-year rate/max time control.
 - Progressive/regressive tariffs.
 - Cumulative grace

E.4 COLLECTION AND MAINTENANCE CARDS

The SOLO supports two chip cards for the City staff's use. These are the collection card and the Maintenance Card.

E.4.1 Collection Card

The collection card, when inserted into the SOLO card slot, resets the audit report and notifies Sentinel that the coin box is being removed / emptied.



Figure 5 - The Front and Back of a SOLO Collection Card

The collection staff member inserts the card as instructed and then empties the coin vault. All audits are then available on Sentinel MMS.

Note: If the collection staff member neglects to use the card, the SOLO continues to add new coins to the previous audit. The next time card is used the audit resets then and the audit file reflects the coins from two collection periods.

E.4.2 Maintenance Card

The maintenance card allows a staff member to access a menu of options on the SOLO.



Figure 6 - The Front and Back of the SOLO Maintenance Card

The options include:

1. Quick Test – diagnostic screens showing meter information, radio status, battery voltages, coin chute status and electronic status. Quick test does not change the time on the meter when it is run.
2. Radio Test – powers up the radio and connects to the central server to verify the radio is operating properly.
3. Collection - same as using the collection card
4. Lamp Test - restarts the meter and checks for updates. Any time on meter is lost.
5. Force Offline – Stops the meter from accept payment. No time can be added.
6. Clear Offline - Returns the meter to active from “Force Offline”
7. Clear Time – removes time from the meter back to zero.
8. Add Time – Allows the staff member to add time to the meter
9. Enter Test mode – puts the meter into test mode where payment can be tested and time added to the meter.
10. Try Payment Input – allows the staff member to test all payment devices without any payment going through or time added to the meter.
11. Adjust Contrast – Allows the maintenance staff to adjust the contrast on the SOLO display.

E.5 BACK OFFICE OPERATIONS

MacKay uses a third party hosting service with uninterrupted power supply and full redundancy. The application is managed by a group of MacKay staff and upgrades are rigorously tested before uploading to the server.



Figure 7 - Sentinel Login Screen

E.6 SENTINEL™ METER MANAGEMENT SYSTEM

MacKay's Sentinel™ MMS (Sentinel) will enable City designated staff to monitor the performance of the installed SOLO/ Multi Elite meters on a web enabled PC or handheld device. The current status of each machine running in the City's system will be monitored through a secure web interface allowing remote monitoring of the meters from anywhere access to the internet is available. Each machine will be configured to regularly communicate to MacKay's host server which will maintain historical information on all aspects of information occurring at the meter. The server can also be configured to transmit alerts in the form of text messages to Personal Digital Assistants (PDAs), pagers or mobile phones, increasing the ability to service the meters when the occasion arises.

Sentinel will be installed on MacKay's server, as an on-line hosted data service provided by MacKay. This hosted service is available to the City enabling access to the critical data at any time but without having the need of managing an IT department. MacKay will manage the Sentinel database server where the data collected from the meters resides. With a hosted service there is no additional burden on the City staff, or further workload to the existing network personnel or infrastructure.

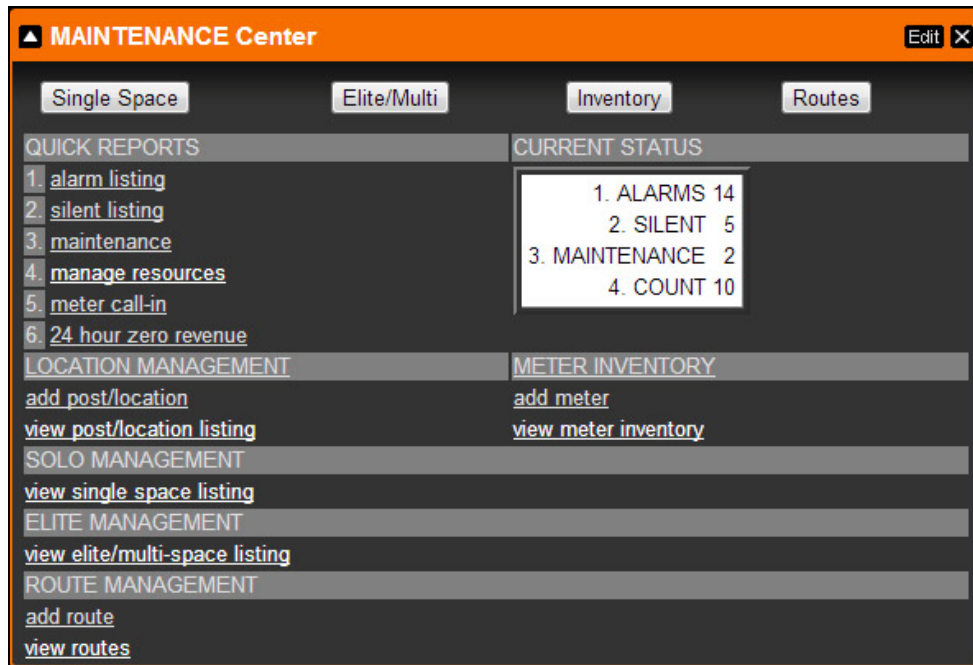


Figure 8 – Maintenance Center "Widget"

The Sentinel application will be configured to allow communication with remote users and the machines via the web using HTTPS services. The server will also be configured with the Microsoft® SQL database, Central dB. City designated personnel wishing to access the Sentinel application simply need to launch their own web browser application (currently Google® Chrome certified, Microsoft® Internet Explorer and Mozilla® Firefox pending) and proceed to the specified web page address associated with MacKay's server, which will then present the Sentinel application interface. This interface includes a login page to allow those with the correct client name, user name and password to access.

Once you log into Sentinel you arrive at the dashboard where the user is presented with applications or "widgets" which that user is permitted to access. Permission levels are controlled by the administrator, designated by the City. There can be more than one administrator but only administrator level can add users or modify certain elements within Sentinel. Other security levels include "manager" level and "read only" level and widgets can be designated to each level.

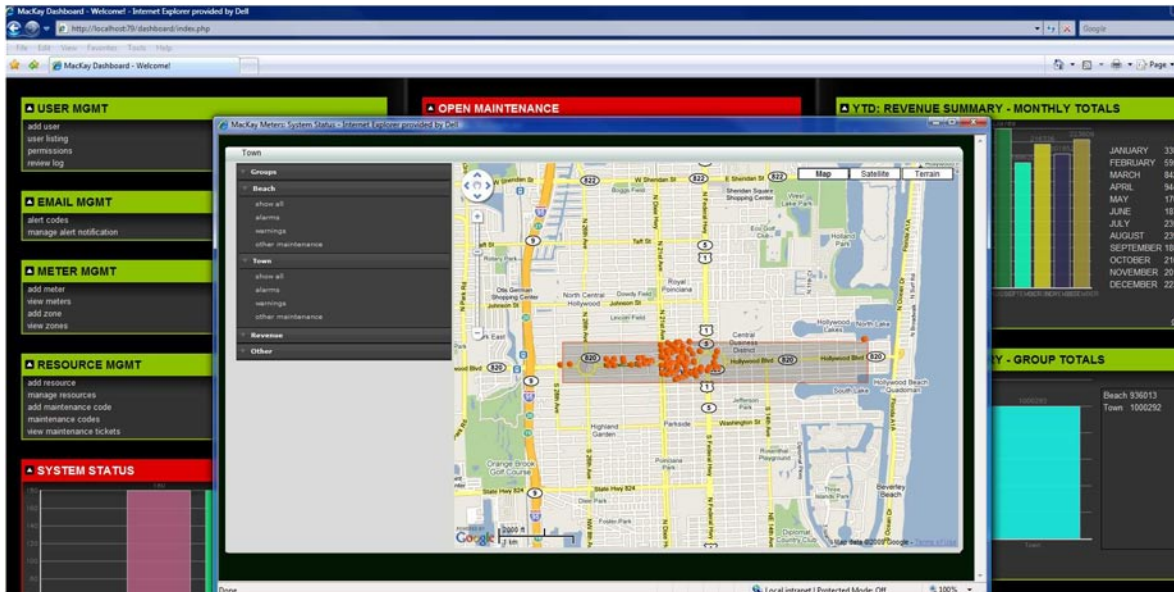


Figure 9 - Sentinel dashboard with map display

All of the information from the meters is available to be drilled down upon from a number of locations not limited to the Google® maps view which shows all detail from the mapped point drill down. There is an incredible amount of data with graphs for quick reference. Everything is exportable, printable and able to be converted to .csv, .pdf or .xml directly from the program.

E.6.1 Current Alarms

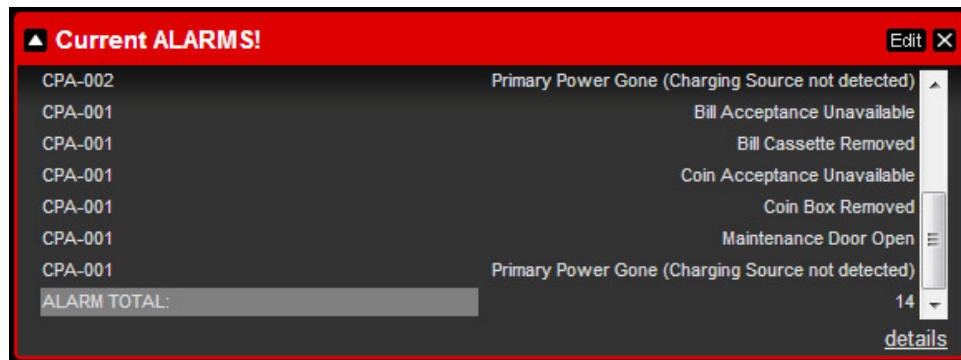


Figure 10 – Current Alarms Application on Desktop

The Current Alarms widget is a quick link to those meters that are experiencing problems and have issued an alert. The application shows a list of alerts received and the meter/post the alert has originated. The details link will bring you to a chart which displays further detail and allows the user to click on links to the meter or post information screens for further action.

ALARM LISTING

Search

Post #/Location

Alert

Alarm Time (From)

Alarm Time (To)

Search type: and

Post #/Location	Collection Route	Street	Block	Alert	Alarm Time
CPA-001	ALL			Bill Cassette Removed	2012-11-04 01:15:26
CPA-002	ALL			Maintenance Door Open	2012-11-04 01:15:18
CPA-001	ALL			Coin Acceptance Unavailable	2012-11-04 01:13:41
CPA-001	ALL			Coin Box Removed	2012-11-04 01:13:41
CPA-001	ALL			Bill Acceptance Unavailable	2012-11-04 01:13:41
NPA_Lot				Battery Low (under 11.5 Threshold)	2012-11-01 08:24:03
NPA_Lot				Coin Discriminator - non responsive	2012-10-31 16:04:24
NPA_Lot				Coin Acceptance Unavailable	2012-10-31 16:04:24
NPA_Lot				Escrow Eject - flap has not activated.	2012-10-31 16:04:24
QC_PbSpace	PPA-Route			Maintenance Door Open	2012-10-31 10:04:19
NPA_Lot				Primary Power Gone (Charging Source not detected)	2012-10-16 15:02:27
CPA-001	ALL			Maintenance Door Open	2012-10-02 10:46:08
CPA-002	ALL			Primary Power Gone (Charging Source not detected)	2012-09-30 13:07:25
CPA-001	ALL			Primary Power Gone (Charging Source not detected)	2012-09-20 09:40:21

Results: 1 - 14 of 14

Pages: |<< < 1 > >>|

Page size: 20

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Figure 11 – Details of Current Alarms

E.6.2 Sentinel – Email Management (single)

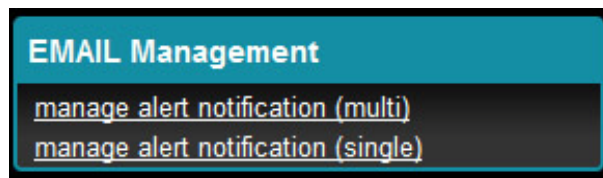


Figure 12 – Sentinel Email Management Application

The Email Management application allows the administrator to assign the users that are to be notified in the event of an alert. The applications within the email management application include manage

alert notification for multi space (MacKay Guardian™ Multi Elite), and manage alert notification for single space (MacKay Guardian™ SOLO wireless meter).

E.6.3 Manage Alert Notification (single)

The Manage Alert Notification application for the SOLO allows the administrator the ability to assign alert notification from the Solo meters to a particular user. For example, if a maintenance technician is to be notified an alert associated with the coin chute or the battery, you simply choose the correct user and check the boxes of those particular alerts. You also have the ability to notify a particular user based upon a certain meter, a group of meters or all meters.

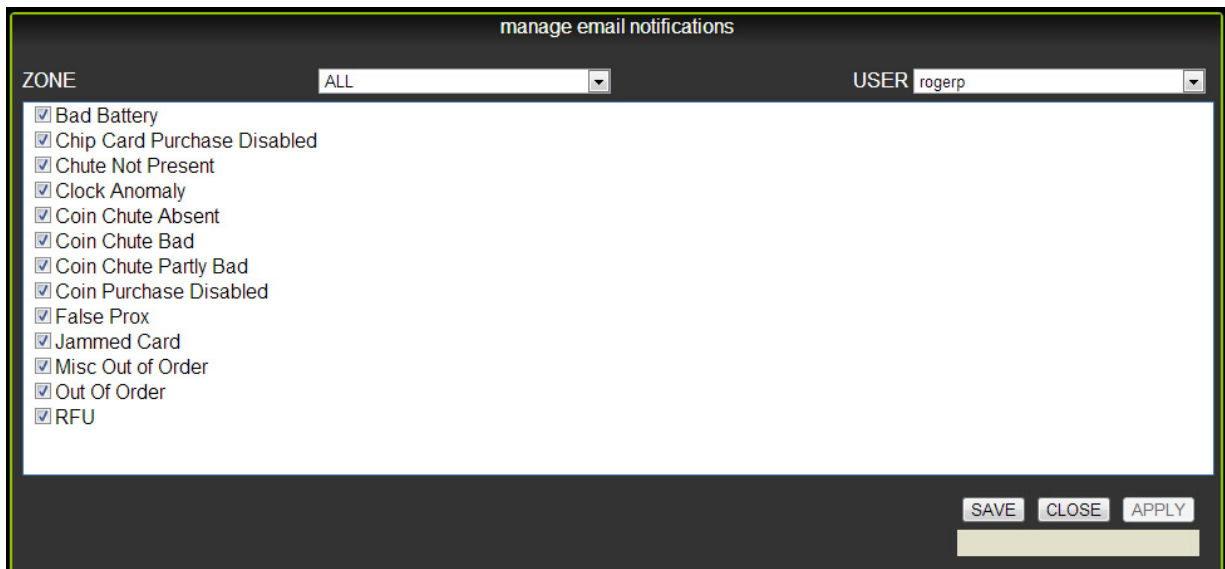


Figure 13 – Manage Email Notifications for SOLO meters

E.6.4 Reports in Sentinel™ MMS

The following is a list of reports that can be pulled from Sentinel™ MMS. All reports can be printed or exported to MS Excel.

Administration Reports

- User Listing Report - a list of the user currently set up to access Sentinel™ MMS.
- User log – tracks the usage of Sentinel by user.
- Maintenance Codes Report - a list of the predefined maintenance codes for assigning maintenance
- Alert Codes Report - a list of the Alert codes and descriptions that the system monitors

Maintenance Reports

- Current Alarms – a list of all alerts currently sent from all meters
- Silent Meters – meters that have not communicated with Sentinel™ MMS in a certain time frame
- Meter Call-in – last time the meter called into Sentinel™ MMS
- Maintenance Report – a list of open maintenance tickets which are created when an alert requires service to be closed
- Meter inventory report – meter ID, status, group, last status change
- Alert History Report – list of all alerts at a meter
- Meter Maintenance Report – a list of maintenance performed on a specific meter
- Single Space Listing Report - a list of all the single space wireless meters and their current status
- Inventory Listing Report - a list of the entire inventory of meters - both active and inactive - for the customer
- Route Listing Report - a list of all the routes / groups / zones that the customer has set up
- Manage Resources Report - a list of the people / resources that the customer uses to assign maintenance to the meters. The report links to each person's maintenance list

Financial Reports

- Transaction Reports – list of all financial transactions which are defined by user criteria
- Audit Logs – List of coin and bill audits from each meter
- Coin Log – breakdown of coin types auditing
- Credit Card search – specific card search report (search partial numbers)
- Monthly Revenue Report – Summary of monthly totals
- Monthly Revenue by payment type – revenue sorted by payment type
- Occupancy Report – report compares total available time versus paid time to show occupancy
- Post History Report - a list of all post monitored by the system, their locations, and the routes / groups / zones they are included in
- Audit Log by Post # Report - Quick report to display the audit log for any post
- Credit Card Log by Post # Report - Quick report to display the credit card log for any post
- Coin Log by Post # Report - Quick report to display the coin log for any post
- Daily Revenue Totals Report - Quick report for revenues from
 - 1)Yesterday
 - 2)This Week
 - 3)This Month

- 4) This Year
- 5) Life Time. Report includes breakdown by payment type.
- Tariff Listing Report - A list of the tariff / rate files that can be deployed to the meters and their current status

All reports can be narrowed down and sorted using search criteria. All data can be exported to MS Excel (.CSV format) or Adobe Acrobat (.PDF format).

FINANCE Center [Edit] [X]

RATE MANAGEMENT

add rate (8) add rate (16)

tariff listing

ELITE/MULTI SEARCH OPTIONS

Credit Card #: [GO]

Multi - Ticket #: [GO]

[Audits] [Transactions] [C.C. Log]

SOLO SEARCH OPTIONS (Enter Post #)

Audit Log: [GO]

Credit Card Log: [GO]

Coin Log: [GO]

Credit Card #: [GO]

[Audits] [Transactions] [Coin Log] [C.C. Log]

Figure 14 - Finance Center Widget

FINANCE: Monthly Totals [Edit] [X]

QUICK REPORTS		MONTHLY TOTALS	
	2012 AUG Single Space	30.55	
	2012 SEPT Multi Space	648.90	
	2012 SEPT Single Space	282.10	
	2012 OCT Multi Space	878.85	
	2012 OCT Single Space	175.35	
	2012 NOV Multi Space	2.50	
	2012 NOV Single Space	3.50	
	TOTAL:	2,128.40	

details (Location) details (Meter Type)

Figure 15 - Monthly Totals Summary Widget

E.6.5 Tariff Management

The Tariff management section allows the user / administrator to add new tariff files to Sentinel™ MMS which can be uploaded to one meter or to several meters.

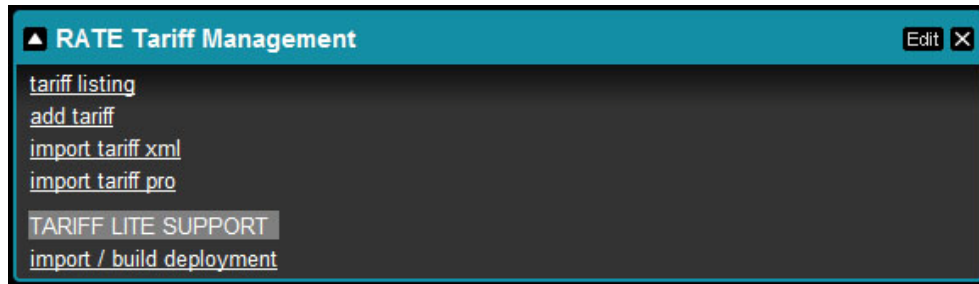


Figure 16 - Tariff Management Widget on Dashboard

The process works like this:

Step 1 – a tariff file is created and saved

Step 2 – the tariff file is tested against a test meter to ensure it works as expected

Step 3 – the tariff file is then activated and made ready to deploy to the meters (locked)

Step 4 – the tariff file is then deployed to a “staging area” where the file awaits to be picked up by the meter or group of meters

Step 5 – the meter(s) checks the version of the tariff file in the staging area and downloads it if it is new

The Add Tariff application allows the user to build a new tariff file in Sentinel for either multi-space meters or single space meters. The application was designed to be user friendly; however, there are several rules that need to be followed to make sure the tariff operates correctly.

There are three distinct sections that make up the tariff editor: the weekly rate graph (which is normally colored in a single color by default with rate#1), the tariff file information (name, type, description, etc.), and the tariff details section which is hidden by default (the majority of the tariff features are in this section).

TARIFF EDITOR - NEW TARIFF

	12:00 AM	2:00 AM	4:00 AM	6:00 AM	8:00 AM	10:00 AM	12:00 PM	2:00 PM	4:00 PM	6:00 PM	8:00 PM	10:00 PM	11:59 PM
Sunday													
Monday													
Tuesday													
Wednesday													
Thursday													
Friday													
Saturday													

- Rate #1
- Rate #2
- Rate #3
- Rate #4
- Rate #5
- Rate #6
- Rate #7
- Rate #8
- Low Power
- Pre Pay
- No Park
- No Pay

Tariff Type : Guardian X Mech Tariff **Test Machine :** IPI Meter #1

Tariff Id : 210 **Tariff Filename :** RP5X

Tariff Description : Special Event Rate for Game Day

[Click to Hide Details](#)

Currency
Rates
Week Schedule
Event Schedule
Advanced

Selected Rate Rate 2

Rate type
Linear

Enter Rate Per Hour
10.00

Details On
Calculate

Cost 0.05

Duration 00:00:18

Coin Minimum Purchase 0.05

Coin Purchase Increment 0.05

Card Initial Purchase Increment 2.00
 Card Initial Increment Count 2
 Card Purchase Increment 1.00
 Non-Cumulative Time 00:00:00

Penalty 0 Grace 0
 Max Time 0 Next Calc. ID 0

00:00

Update Rate

Save Tariff

Figure 17 - Tariff Editor Application

E.6.6 Display Editor – SOLO

The administrator has complete control over the SOLO display screens using the display editor. Sentinel™ MMS provides the ability to edit up to 4 screens or panels per meter status. So when the meter is idle and expired, the screens can be showing up to 4 different panels of information including customized screens for event or marketing purposes. The same for idle with time counting down.

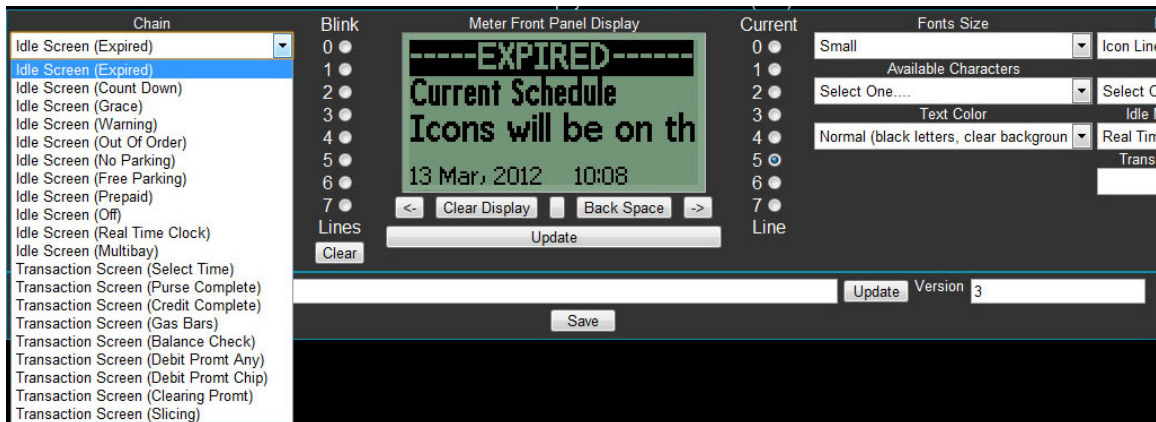


Figure 18 - Display Screen Editor in Sentinel™ MMS

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F. PRICING PROPOSAL

F.1 INTRODUCTION

MacKay Meters Inc. (MacKay) is pleased to present our “Price Proposal” for the Purchase and Installation of MacKay Guardian™ SOLO wireless single space parking meters. The following section is meant to detail MacKay’s pricing based upon our understanding of the project.

F.2 PROPOSED GENERAL TERMS AND CONDITIONS

MacKay proposes that the following terms and conditions would apply to our Price Proposal for this RFP.

- This proposal was prepared without cost to the City.
- Prices are stated in US dollars.
- Taxes are extra, if applicable, and are stated if known.
- Delivery time for any products will depend upon the timely provision of specifications.
- Our prices for the meters include a two (2) year warranty from the day of installation / activation. MacKay's standard warranty terms will apply.
- Our prices include comprehensive training for the equipment at the City's office. Training is presumed to take place on consecutive days, in a given 5-day work week.
- MacKay will retain all of its right, title and interest in any development work, and any and all intellectual property rights and source code for all software proprietary to MacKay.
- The copyright and other intellectual property rights of whatever nature (including without limitation patents, design, topography, trademarks, service marks, trade secrets, know-how and other intellectual or industrial property rights, whether registered or unregistered, and all applications and rights to apply for same) in the software are and shall remain the property of MacKay and others and MacKay and others reserve the right to grant a license to use their software to any other party or parties.
- MacKay warrants that it has valid title to any intellectual property rights related to any product and software supplied and proprietary to and owned by MacKay.
- All products supplied and owned by MacKay for this Proposal would forthwith automatically vest in and become the property of the City immediately upon installation. At that time, all risk shall pass to the City for the product and software delivered by MacKay. Prior to installation, MacKay will insure the product is delivered to the City. MacKay will not be responsible for any mishandling and/or damage due to vandalism, or negligence directly or indirectly attributed to the City. City will be responsible for reasonable safekeeping of any product prior to installation.
- Upon acceptance and in consideration for any product, software and services and for the rights and licenses related to the Software, the City shall pay MacKay the amount(s) in accordance with the prices as set out in this Price Proposal.
- MacKay shall invoice for the each shipment of product and software and services rendered. The City shall make payment to MacKay not later than 30 days following delivery.

- All prices quoted in the Price Proposal are firm for 90 days from the submission deadline.

We trust that the above information has been comprehensive enough to assist the City in evaluating our Price Proposal. If the City has any questions concerning our Price Proposal, we would be pleased to answer any questions that you may have, at your convenience.

Note: the color of the SOLO meters is the choice of the City. The front and back housing plates can be painted the same or separately. MacKay's paint shop allows for most any color chosen to help with meter visibility or to match City branding.



F.3 PRICE DETAIL – MACKAY GUARDIAN™ SOLO PARKING MACHINE

F.3.1 Pricing – Meters

ITEM	QTY	DESCRIPTION	UNIT PRICE	TOTAL
1	200	MacKay Guardian™ SOLO LD coin / card meter	\$474.95	\$94,990.00
2	1	Installation and Training	\$7.50	\$1,500.00
3	optional	Contactless Payment Module*	\$79.99	optional
			Subtotal	\$96,490.00
			Freight	\$1,250.00
			Total	\$97,740.00

*Note: the contactless module can be retrofitted onto a SOLO in the field at a later date

F.3.2 Hosted Remote Monitoring and Notification Service for MacKay Guardian™ SOLO Including Credit Card Payment Gateway and Cellular Communications

MacKay will supply a hosted system for performing parking management functions. The Parking Management System will include:

- Sentinel™ MMS, used to remotely monitor the on-street status of the SOLO and notify the City of any alerts. Also Sentinel can generate a variety of reports on the information downloaded periodically each day from the SOLO over a wireless network.
- Cellular communications for each meter that allow for data to flow to Sentinel™ MMS or for credit card authorizations through CreditCall Ltd.

The standard fee for these hosted services, including the cellular communications and the credit card gateway services is as follows:

OPTION 1

Gateway/Hosted Remote Monitoring and Notification Services for MacKay Guardian™ SOLO meter with Cellular Communications
\$8.25 per meter per month (includes credit card transactions)

OPTION 2

Gateway/Hosted Remote Monitoring and Notification Services for MacKay Guardian™ SOLO meter with Cellular Communications
\$5.50 per meter per month plus \$0.11 per credit card transaction

In addition to the monthly fee, there is a one-time payment gateway set-up fee of **\$295 / new gateway accounts**. This is a flat fee, not a “per meter” fee and covers the gateway account setup. The above costs and all other terms and conditions of these services are outlined in MacKay’s standard Gateway/ Hosting/ Notification Service Agreement which is signed by the client to activate the gateway and hosting services. A copy of this Agreement is provided upon request.

F.4 PAY BY CELL PRICING – ADD TIME TO METER (OPTIONAL)

Pricing for Pay by Cell solutions (see Pay by Cell solutions) are outside of the scope of this response and are the City’s choice and responsibility to negotiate.

However, the SOLO has the ability to show time on the meter when time is purchased from a cell phone. The fees for having Pay by Cell time shown on the meter are as follows:

Pay By Cell Time Added to Meter
\$0.10 per cell transaction

Adding time to meter from Pay By Cell will use more battery life and will considerably shorten the lifespan of a battery pack. A replacement alkaline battery pack is \$27.95.

F.5 SPARE PARTS LIST (OPTIONAL)

MacKay Guardian™ SOLO Spare Parts List

Part Number	ppa	PART DESCRIPTION	List Price
30GD4000400	1	Lithium-Ion Battery Pack	\$27.95
20GD0000025	1	Smart Chute Assembly	\$48.95
30GD4000425	1	D Cell Battery Pack	\$27.95
32K80000060	1	Coin Slot (North America)	\$1.10

F.6 EXTENDED WARRANTY PRICING – SOLO (OPTIONAL)

Solo Extended Warranty	Warranty Description	Warranty Price	SOLO Price Total
	1 Year Standard Warranty	Incl.	\$ 474.95
	2 Year Warranty	Incl.	\$ 474.95
	3 Year Warranty	\$ 55.00	\$ 529.95
	4 Year Warranty	\$ 105.00	\$ 579.95
	5 Year Warranty	\$ 145.00	\$ 619.95

F.7 ACCESSORIES - PRICING (OPTIONAL)

PART #	QTY	DESCRIPTION	UNIT PRICE
RFID0000001	1	RFID Tags for SOLO meters	\$12.00
62HS0024000	1	MKH 4000 LD Housings	\$185.00
75CC0000910	1	Decorative Base	\$44.50
75CC0000915	1	Decorative Pole	\$ 30.28
75CC0000920	1	Decorative Collet	\$14.95
75CC0000925	1	Decorative Street Plate	\$19.95
60HS0520520	1	Mounting Yokes	\$32.50

F.8 ELECTRONIC LOCKS (OPTIONAL)

Mackay supports the use of Medeco Nexgen electronic locks and keys.

Part Number	Description	Unit Price
EN-1000X	Nexgen Electronic Cam Lock	\$150.15
EV-5502R	Nexgen Collector Key	\$390.00
EV-4508	Nexgen Host Kit – Includes software, 1 docking station and Admin key	\$2627.63

Each housing could support 1 lock for the vault door and/or 1 lock for the housing top.



Medeco Electronic Collector Key



G. RFP SUBMISSION FORMS

The following section includes the completed forms and addenda from the RFP.

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H. APPENDIX

The following documents are included for reference.

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