

The logo for Samson, featuring the word "Samson" in a bold, dark blue sans-serif font, followed by a small orange square with a white diagonal line.

City of Ottawa

Precise Parklink Contract and Extension Review

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1. Context

On April 7, 2010, the City of Ottawa (herein after referred to as “City”) entered into a 10-year agreement with Precise Parklink (herein after referred to as “Precise”) to supply parking payment equipment and provide all related support services (cash collection, maintenance, back office support, etc.). The Parking Operations System Agreement (POSA) is the contract between the City and Precise and includes unique aspects, specifically related to guaranteed revenue and capital payment provisions.

POSA is governed by the laws of the Province of Ontario and the applicable federal laws of Canada. The agreement includes provisions for Pay and Display parking payment machines (P&D) capable of accepting payments for on-street and off-street parking. Initial orders included up to 633 on-street and 31 off-street P&D machines, with the option to reduce the number of machines by up to 150 machines from the primary order. POSA also included provisions for Parking Facilities Payment Systems (PFPS) for indoor parking facilities. The primary order for the PFPS called for complete set ups at 3 parking lots, 70 Clarence Street, 141 Clarence street and 110 Laurier, with options to expand the systems. POSA also included a central management system capable of managing operations of all components and reporting live on the status of the equipment and revenue.

The City also elected to include a Warranty and Renewal Program (WARP) to POSA based on a fixed monthly fee plus a per transaction fee collected throughout the duration of the contract. The WARP included preventative maintenance of all units.

Another key component of POSA is the Revenue Guarantee that was proposed by Precise in early bid submission. This clause guarantees the City an increase of 23.75% over the historical base on-street revenue generated by parking fee revenue prior to POSA implementation.

Due to various circumstances and disagreements, a significant portion of the contract term, as of March 2020, has been spent in some form of dispute process. A settlement was reached in September 2019 which has enabled both Parties to move forward in rectifying issues and addressing gaps. As part of the settlement, the City agreed to consider a 5-year extension with the vendor, pending alignment with the City’s Purchasing By-law, and Council approval.

2. Objectives, Scope and Approach

2.1 Objectives and Scope

The review was conducted in two parts. The first component of the review assessed current and pending management practices of the City's transitway and parking management team under the City's Public Works and Environmental Services Department, including:

- Contract management practices:
 - Ensure clarity of the terms, conditions, and requirements under the POSA (i.e., identify any vague or ambiguous provisions/language)
 - Invoice verification prior to payment
 - Revenue verification and reconciliation
 - Performance monitoring/vendor accountability (including dispute resolution and documentation, where appropriate)
 - Vendor compliance with applicable legislation (including City by-laws and internal policies)
 - Verification and monitoring of any insurance provisions required under the contract
 - Inventory/change order control (including changes authorized by staff with the appropriate level of authority under the Delegation of Authority By-law)
 - Utilization of warranty provisions, where appropriate
- Assess whether staff overseeing the contract have the appropriate skills, experience, training and/or credentials to fulfill the duties and responsibilities.
- Assess whether Parking Services has sufficiently identified, documented, and mitigated (to the extent possible) operational risks associated with the POSA.
- Identify gaps and recommendations for improved and/or more efficient processes

This aspect of the engagement focused on the current state of the POSA, while taking in consideration all events related to the contract from negotiations to current management of the agreement. The review was conducted on practices and processes in place at review time.

The second part of the review was conducted to gain an understanding of the merits of a 5-year extension, identifying strengths and weaknesses with a specific focus on:

- Alternatives related to system replacement in 2021
- Contract terms related to guaranteed revenue and capital payments
- Status of equipment and warranty provisions under the agreement
- Industry/market trends and options
- The City's ability to implement different/progressive technology solutions during an extended term
- Other aspects that would impact the relative value to the City of an extension

2.2 Methodology

The review was conducted using the following methods:

- Interviews with stakeholders within the City of Ottawa parking department officials.
- Analysis of relevant files and supporting data.
- Review of business processes, policies, and practices of the City of Ottawa parking department, such as: standard operating procedures, quality control plans, process flow charts, control documentation, emails, and departmental responses.

Throughout the engagement, Samson validated findings and potential recommendations with Parking Services personnel and the external consultant hired by the City who has been involved throughout POSA and is familiar with the contract.

Samson reviewed the POSA contract, Council presentations, annual reports, planning documentation and standard operating procedures, invoice reviews, covering the POSA contract to date from contract negotiations with Precise Parklink in April 2008 to current contract management.

3. Part 1 – Contract Management Observations

3.1 Clarity of the Terms, Conditions and Requirements under the POSA (i.e., identify any vague or ambiguous provisions/language)

Samson reviewed the complete POSA contract, including recent draft updates as amended by the City of Ottawa Parking Services in the months preceding this review. The contract is very prescriptive and detailed in all aspects of contract management. The contract is 273 pages long and the 23 articles and 16 schedules were generally clearly written. Samson identified one area for improvement, in the calculation of Base Revenue and Final Revenue Guarantee calculations. Upon discussions with the City's officials, Samson received confirmation that the Base Revenue and Revenue Guarantee calculations had been clarified between Precise and the City. The section on Revenue Guarantee in Part 2 of the review discusses the Revenue Guarantee process and calculations in details.

During the review of the City's contract with Precise, Samson observed that while the contract includes provisions for the audit of revenue and the audit of performance of Precise under the terms of the contract, none have been conducted to date. This was noted as a point to consider for the remaining duration of the current contract and we recommend that an audit of revenue be conducted before the extension of the contract. Part 2 of the review presents an overview of recommendations related to the anticipated extension.

3.2 Invoice Verification Prior to Payment

Samson reviewed the invoice payment verification process performed by the City. During interviews of City management staff, it was indicated that initial discrepancies related to invoices from Precise had been remediated by the supplier early in the contract. The contract is specific about what must be included on invoices prior to payment.

“In order to qualify for payment, all invoices must provide clear, detailed information and must specify the City's contract number, as applicable, and show the GST and PST separately, or the HST when applicable, with the applicable GST or HST registration number. All invoiced amounts must be itemized in detail based on an item referred to in Schedule 11 or in the List described in Schedule 7 to which the invoice relates, identifying the item provided and/or the Work carried out. All invoices relating to the prices specified in Schedule 11 must also include the total amount of the Capital Account to date.”

Samson reviewed 11 invoices for the month of November 2019 covering on-street and off-street transactions fees, O-train support service fees, on-street and off-street support service fees, Lot 4, 5, 6 support service fees, change implementation payback and staffing plus administration fees for Lots 4 and 6.

Samson traced itemized items to the contract schedules and agreed items. Samson also reviewed the amended cost-plus activities list amended for 2019 amounts provided by the Area Manager, Transitway & Parking.

All invoices reviewed met the requirements stipulated in the contract, however Samson could not review any documented evidence that these requirements had been reviewed prior to processing the invoices for payment.

Recommendation #1: As evidence of review of the invoice requirements, a checklist should be produced and signed by the accounts payable responsible employees and signed by the manager in charge.

3.3 Revenue Verification and Reconciliation

Samson performed a walkthrough of the revenue verification process and interviewed employees responsible for the development of the process and the implementation of the revenue verification and reconciliation. There are currently 3 processes for revenue verification and reconciliation that are performed on a monthly basis: The Pay & Display (P&D) Cash Verification, The Pay & Display Credit Card Revenue Verification and The Parking Facility Payment System (PFPS) Revenue Verification.

On a monthly basis, Precise Parklink submits several financial reports and printout tapes from the P&D terminals. The PFPS transactions are uploaded directly from SKIDATA, the software collecting the information from the PFPS terminals. The reports are reconciled to deposit reports from Moneris.

Any variance observed is compiled on a “Financial Issues Log” by the City of Ottawa employees and communicated to Precise Parklink for explanation and resolution.

At the time of the review, 68 current items for explanation and 11 outstanding items dating back to December 2019 were observed in the Financial Issues Log. City staff confirmed that all reconciling items have historically been explained by Precise Parklink and usually are related to timing differences between reporting dates and deposit reported.

Samson found the process to be robust and complete and being adequate in providing the parking services employees with reasonable assurance that money received through Moneris aligns to Precise Parking system generated reports. This is an appropriate control.

Samson also reviewed the Independent Service Auditor's Report on the Description of the System and the Suitability of the Design and Operating Effectiveness of Controls performed by BDO Canada LLP for the period of August 1, 2018 to January 31, 2019. The auditors issued a clean opinion and controls over the parking revenue systems were assessed as operating effectively.

While the revenue verification and reconciliation are effective and appropriate financial controls, they are not a suitable substitute for a financial audit of revenue processed through Precise Parklink systems. Furthermore, the process relies on the work of one employee and is not peer reviewed, adding the potential for errors or omissions.

Recommendation #2: The monthly revenue verification and reconciliation should be peer reviewed or reviewed by a supervisor and evidenced by an auditable approval trace to ensure it is accurate and provide additional strength to this control.

Recommendation #3: Reported revenue should be subject to a full audit (as permitted by the contract) to assess whether there are any anomalies in the reported revenue.

Recommendation #4: Resolving all outstanding reconciling items and audit issues (if any) should be a condition for the extension of the contract.

3.4 Performance Monitoring/Vendor Accountability (including dispute resolution and documentation, where appropriate)

The original attribution of the POSA contract was done under the "Ottawa Option", where an innovative solution was given to include a Revenue Guarantee to the parking system implementation. The Ottawa Option gave the supplier (Precise Parklink) the option to adjust their pricing to be the most competitive bidder should competition arise. Based on conversations with management of the Transitway & Parking of the City of Ottawa, no competitive bids were received in 2009 therefore Precise Parklink was awarded the contract. The POSA contract has been subject to disputes and difficulties for a large portion of its existence. The contract entered the execution phase in April 2010 and the P&D system was fully installed by November 2010. The PFPS in lots 4,5 & 6 were completed and fully installed and operating by October 2011.

In February 2012, Precise Parklink initiated discussions to amend the contract and resolve some issues, mostly around Revenue Guarantee. From the beginning of the contract management period in November 2011 up to the time of the audit in March 2020 the revenue has never reached Revenue Guarantee levels. Therefore, Precise Parklink has been required to top up revenue for the entire duration of the contract. For the first 5 years of the contract, this top up was in cash paid to the City of Ottawa, and subsequently (years 6-10) the top up reduced the amount of capital owed to Precise Parklink for the P&D machines and the PFPS installations. This has resulted in the City of Ottawa getting the parking infrastructure at a discounted rate.

In accordance with the contract terms, the Revenue Guarantee was paid in cash by Precise for the first 5 years of the contract and then as a reduction of capital investment owed to precise. The total amount charged to P&D Capital Infrastructure by Precise Parklink was initially planned at \$11.8M.

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During the contract, the City added an order of P&D machines for \$258K and upgrades to the PFPS infrastructures for \$619K for total capital investments of \$12.7M. Precise paid the City \$8.5M (before HST) cash in the first 5 years of the contract to top up the revenue and \$ 4M in reduction of the capital owed on the infrastructure between Q4 2016 and December 2019.

The current position of the capital account does not reflect the cash payments of the first 5 years of the contract and is illustrated in the table below.

Item Description	Amount (\$)
Initial Capital Balance	11,828,751
Capital Additions P&D	258,336
Capital Additions PFPS	619,071
Capital Reductions from Precise Revenue Guarantee (since 2016)	(4,217,615)
Capital Contribution from City of Ottawa	(882,637)
Capital Infrastructure Balance Owed	7,605,906

As discussed previously, the balance owing on the capital account is lower than the cash received in Revenue Guarantee putting the City of Ottawa in a net positive position overall on this contract.

While the negotiated extension of the contract currently proposes a reduction of the Revenue Guarantee calculation, the City will benefit from continuing to receive equipment at a reduced rate with Precise responsible for capital reductions of approximately \$6.5M during the extension period.

In terms of contract performance, Precise has always fulfilled its obligations for providing P&D machines and PFPS facilities services, even during the disputes in early contract implementation. All machines and infrastructure were delivered on time and have been operational as planned. Between 2012 and 2016 a long-drawn contract dispute halted payments and exchange of funds between Precise and the City, however Precise continued to perform their contractual duties. Dispute has been resolved since and the relationship between both parties has improved.

The Revenue Guarantee is related to the on-street P&D segment of parking revenues. For PFPS facilities, service fees are paid to Precise on a per equipment basis (similar to P&D) and the City has the option to contract Precise for garage/lot operations on a cost-plus basis per the terms of the POSA.

Overall, the total revenue generated by the POSA contract with Precise includes on-street P&D, off-street P&D and Parking Facilities Payment System (PFPS). The average annual revenue for the contract to date is illustrated in the table below.

POSA Contract Average Annual Revenue (in Canadian Dollars)				
	Revenue	Service Fee	Other System Costs	Net Revenue
On-street P&D	7,761,770	(1,536,311)	(8,489)	6,216,970
Off-street P&D	1,551,821	(82,694)	(1,287)	1,467,840
PFPS	5,227,457	(288,820)	(561)	4,938,076
Total	14,541,048	1,907,825	10,337	12,622,886

3.5 Vendor Compliance with Applicable Legislation (including City by-laws and internal policies)

For the duration of the contract, we found no evidence suggesting that Precise had not followed all Canadian legislation and City by-laws related to the execution of the POSA contract. No matters related to non-compliance with applicable legislations were brought to our attention by management during the review. Some delays were noted around invoice payment during the dispute of guaranteed revenue calculations. City officials have indicated that these issues have been resolved and accounts have been brought up to date.

Nothing came to our attention either that suggests the supplier was not compliant with the *Occupational Health and Safety Act of Ontario*.

3.6 Verification and Monitoring of any Insurance Provisions Required under POSA

The POSA contract is specific on the requirements of insurance provisions. Upon inspection of the insurance documents provided by the area manager Transitway & Parking and validated through interview with the insurance clerk of the City of Ottawa, Samson was able to observe that all insurance provisions required under POSA were met.

3.7 Inventory/Change Order Control (including changes authorized by staff with the appropriate level of authority under the Delegation of Authority By-law)

Inventory levels are aligned with contractual terms and have followed the implementation schedule. The inventory update process is appropriately defined and documented. Here is a summary of the inventory management process.

“Throughout each month, the City may issue change orders that would change the status of P&D machines currently in operation.”

A specific code is assigned to each P&D machine to include or exclude the equipment from support service fees or capital inventory. The monthly inventory is updated after the 10th of each month by Precise Parklink based on the status of machines from the previous month. The inventory is submitted to the City, reviewed and changes are resubmitted to Precise Parklink when applicable. Changes are confirmed by Precise Parklink who then prepares invoices accordingly. Please refer to the City of Ottawa Pay and Display monthly inventory update for a detailed process description.

As of February 2020, the City P&D inventory included:

- 21 spare machines on rotation
- 26 machines temporary removed
- 29 machines decommissioned
- 297 refurbished machines
- 10 machines permanently decommissioned

The City currently holds a total of 634 machines actively on the inventory. The inventory list indicated 28 P&D off-street and 606 P&D on-street machines in operation.

Samson has found the inventory process to be well designed, appropriately monitored, and effective in safeguarding the assets of the City of Ottawa.

3.8 Utilization of Warranty Provisions, where appropriate

Under the POSA contract, the City of Ottawa elected to include the “Warranty and Renewal Program” (WARP) to the contract. The program is funded by a fixed monthly fee per P&D machine used for an entire month plus a fee per customer transaction for each machine. The contractor is responsible to ensure effective and consistent operation of the system and performance of every machine in service. The Revenue Guarantee provisions are also an additional incentive for the contractor to ensure operating effectiveness of machines. The WARP includes a Preventative Maintenance Plan, all hardware parts, software updates and upgrades. Complete details of the WARP are available in Schedule 6 of the POSA contract.

The contract provides for the rights of the City to audit the WARP and its effectiveness in maintaining the value of the Parking Payment Machines at any time and to recommend or require remedial action, as it deems appropriate. At the time of this review, the City had not elected to conduct any audit of the WARP. An audit of maintenance logs and documentation related to WARP as well as an audit of the status of machines could provide the City with assurance of the renewal of the fleet prior to contract extension. While allowed within the contract, the feasibility and practical application of a WARP audit has been assessed as impractical. Detailed logs of refurbishments have been submitted and the City officials indicated they were confident the WARP program had been properly executed by Precise.

The refurbishment initiative for all P&D machines was in progress at the time of the review. By the end of April 2020, half of the P&D machines were expected to be refurbished with 3G modems, testing and replacement of all components if necessary, improved protective coating with graffiti resistance and rust inhibition and improved solar panels for increased power and more efficient power management. Furthermore, upgrades of P&D machines were performed to update credit card readers to meet PCI requirements and coin selection upgrades at other times during the initial 10-year contract.

Over the 10-year duration of the contract, each P&D machine WARP costs is estimated at \$7,654 per machine. While the POSA did not explicitly stipulate refurbishing of the P&D terminals, the MOS supports the POSA and the extension by ensuring continuing effective and consistent operation of the P&D machines through a system-wide refurbishment, to be completed by the 10-year mark. These costs have not been capitalised and are not included in the capital account for the machines. The total cost of the WARP for 634 P&D machines is a little over \$4.8M.

Recommendation #5: WARP provisions should be considered during negotiations of the extension of the POSA contract. With the increase of Pay-by-Phone users rapidly growing, the 5-year extension presents an opportunity to gather data on the potential to reduce the number of P&D machines and therefore reduce the cost of the WARP program to include only a fraction of the current inventory.

3.9 Assessment of Staff Skills, Experience, Training and/or Credentials to Fulfill the Duties and Responsibilities of the Contract

Current management of the POSA contract is performed under the leadership of the area Manager, Transitway & Parking for the City, and supported by a Parking Systems engineer.

Both individuals have been working in parking related positions for over 15 years and have both specific traffic operation and engineering expertise respectively.

Based on our interviews and material reviewed, the Ottawa team has demonstrated competence and thorough knowledge of all aspects of the POSA contract and City by-laws. In our opinion, the team is competent and qualified to manage this contract and parking operations. Furthermore, the team have demonstrated an understanding of the issues around the contract and sound knowledge of trends and technological developments in the field.

Since inception of the POSA contract, the management team has received the support of external expertise (consultant) in strategic and financial project related areas.

While current staff have demonstrated competency and skill in managing the contract, the volume of administrative tasks required in managing the day-to-day activities and monitoring of the POSA appeared to be beyond the capacity of the small team to manage. Until recently, the contract management activities were limited. Samson noted several recent initiatives in monitoring and managing the contract. As the City staff undertakes these new initiatives and the required monitoring for the contract, additional resources may be required. We have noticed that the team is forced to make choices in prioritizing the most critical aspects of managing this contract and certain aspects of control and monitoring suffered from a lack of available time and resources.

Recommendation #6: In order to address appropriate contract management activities, including several of the recommendations in this report, we recommend the addition of full-time resource with financial and management expertise to support Transitway & Parking in the execution and monitoring of the POSA extension. Furthermore, this resource will prove invaluable in the development of a need's assessment after the 5-year extension.

3.10 Assessment of Parking Services Identification, Documentation and Mitigation (to the extent possible) of Operational Risks Associated with the POSA

A risk assessment was performed by management initially at the beginning of contract negotiations back in 2010 and reviewed during the analysis of the extension of POSA in 2020. The risks identified by management were: Vendor Performance, Continuation of Contract Costs, Revenue Projections/Guarantee Impacts, Revenue Verification and Fixed Technology Options. Risks were ranked for likelihood and potential impact on a Low, Moderate or High scale. Mitigation strategies were identified and were reasonable.

The risk assessment was limited in scope and focused on immediate contract issues and technologies.

Recommendation #7: The risk assessment could be developed further to include Political, Economic, Social, Technological, Environmental and Legal perspectives to broaden the risk analysis. The succession planning of key parking management resources is also a risk that could be considered.

3.11 Gaps and Recommendations for Improved and/or More Efficient Processes

Recommendations were made throughout the report in relevant sections. The comments below were of a more general nature and added to support recommendations throughout the report. Processes were recently developed for several aspects of the contract management. The revenue verification process is still relatively new and is still evolving and improving. There is currently no peer review of the revenue verification process. Such a review would provide additional assurance and assist in detecting any errors or omissions.

In our opinion, while the management of the contract was evidently lacking in the years prior to 2018, it is moving in the right direction and several improvements have been recently made to provide assurance the City is receiving appropriate value from this contract. Continued improvement, as already initiated, and supported by management will be beneficial to the City's capacity to receive maximum benefits. The current culture supports this type of improvement and should be encouraged.

The City has yet to exercise their right to audit performance, revenue and warranty and renewal of the P&D machines. It would be in the best interest of the City to conduct or outsource the audit of revenue prior to finalising the extension of the contract. An agreement in principle can be negotiated pending completion of audits resolved to the City's satisfaction.

4. Part 2 – Review of Potential Extension Observations

4.1 Alternatives Related to System Replacement in 2021

For the uninterrupted continuation of parking operations, the City of Ottawa has a few alternatives available.

1. Take over the infrastructure and operate the parking operations system with City of Ottawa staff
 2. Launch a request for proposal process to solicit interest from contractors for a new system
 3. Extend the POSA contract for 5 years
 4. Let the contract expire and extend month to month
-
- 1- Taking over the infrastructure and operating the system using the City staff would require expertise in system operation, significant increase in staffing levels and reduced efficiencies in the operation of the system and logistics. Precise Parklink has designed and operated this system and is an efficient operator. This also would require settlement of the capital investment account of between \$6.5M and \$8.1M depending on whether additional inventory is required to expand operations to Westboro and Wellington West. Finally, terminating the contract and taking over operations implies the termination of the Revenue Guarantee currently provided by Precise Parklink. This Revenue Guarantee, if conditions remain the same for the duration of the contract, are projected to be between \$6.2M to \$6.5M in reduction of capital investment balance for the 5-year extension.
 - 2- While launching a request for proposal to solicit interest from contractors for a new system has the benefit of competing (validating) for the best solution, it also has some drawbacks. The current POSA is rapidly approaching extension deadline and drafting requirements in a changing industry in the middle of a technological disruption, as discussed in section 4.4, could lead to missed opportunities as the market evolves. Our research also suggests that any Revenue Guarantee is unlikely to be agreed upon by any new contractor considering a bid on the project. The City does not need to settle the capital investment account of approximately \$6.5M with Precise for machines already installed if POSA is not extended. The City can walk away from the terminals and return them to Precise or choose to settle the account and keep the terminals, which is unlikely if POSA is not extended. A new RFP process would likely not lead to expanding the current fleet with additional machines for Westboro and Wellington West in the short or medium term. A new system is also likely to lead to a new user interface and disrupt the user experience, leading to discomfort during the adaptation period. Finally, changing the operator would most likely lead to a complete replacement of the P&D terminals and infrastructure, resulting in a loss of all capital paid for machines that were recently refurbished and are appropriate to operate for 5 years.
 - 3- Extend the POSA contract for 5 years would lock in the Revenue Guarantee, and while some adjustment to the calculation methodology has been agreed in principle with Precise Parklink, the additional revenue contributed in reduction of the capital account is still significant. At the end of the 5-year extension, the projections are that Precise will have contributed \$11.1M to

the capital account under the new methodology. The change in calculation methodology results in only 2.4% variance or \$0.5M for the entire duration of the contract. Additionally, the complete fleet of P&D terminals are scheduled to be refurbished before the extension, which is likely to be a good use of assets to continue to use the equipment for the 5-year extension. Precise Parklink upgraded the parking facilities (PFPS) to credit/debit tap and in /out technologies making the facilities operating with modern technology. The equipment acquired from Precise Parklink is adaptive and can be retro-fitted to alternative kiosk technologies such as Pay-by-Plate, tap and go, if desired. Finally, extending the contract for 5 years can provide the City with the opportunity to analyse data on new emerging trends and technologies such as Pay-by-Phone and develop strategies around adoption rates in the population. There are no current advances in technology that requires immediate action, however a 5-year extension may provide such an opportunity.

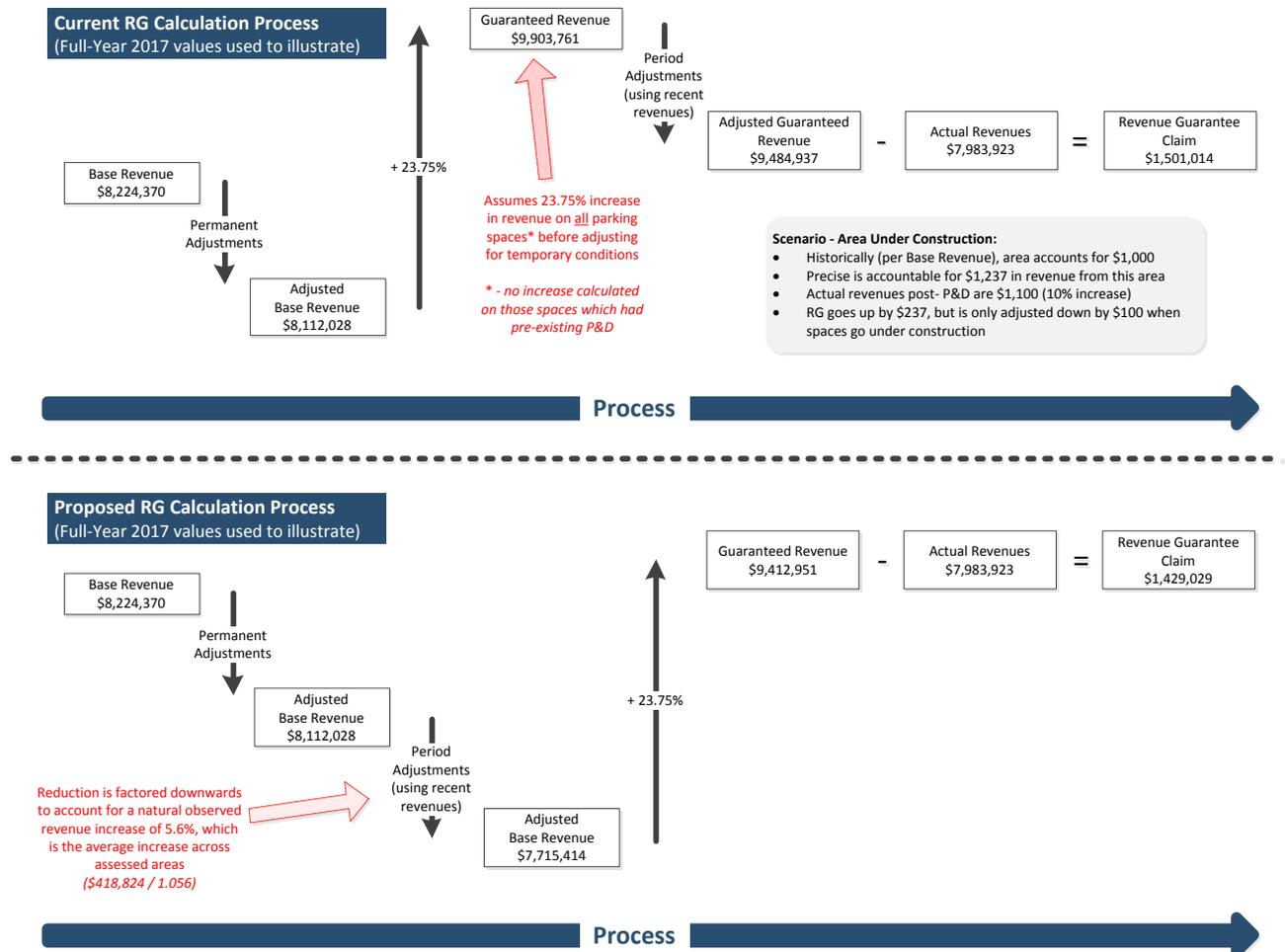
- 4- Letting the contract expire and operating with Precise Parklink on a month to month basis has significant drawbacks as well. One advantage is that the City would remain free to explore other options as the contract evolves. However, if the contract is not extended it is unlikely that Precise Parklink would agree to continue to cover the Revenue Guarantee or to extend the capital repayment period. This would lead to a significant reduction of revenue for the City and a large outflow of funds to settle the capital account.

Based on this analysis, Samson agrees with the City that extending the current contract appears preferable and we support a recommendation to extend the contract for 5 years, pending audits of revenue and contract performance.

4.2 Contract Terms Related to Guaranteed Revenue and Capital Payments

The early negotiations initiated with Precise Parklink on terms of a potential extension include a change in methodology for the calculation of Revenue Guarantee. The general terms of the Revenue Guarantee are remaining, however the methodology used to calculate the Revenue Guarantee amount is expected to be updated. The initial Revenue Guarantee increased total revenue by 23.75% and took into consideration a set percentage for Pay-by-Phone transition.

The sequence of the calculation is expected to be adjusted as follows:



Current Revenue Guarantee calculation method assumes adjustments calculated using the P&D Revenue data are subtracted AFTER the addition of the 23.75% increment to the Revenue Guarantee – effectively a default assumption that the P&D implementation has achieved the 23.75% increase in revenue. If it is instead assumed the P&D revenues have increased by an average of 5.6% (average of several assessed areas), the Revenue Guarantee payments would decrease.

The City has also agreed to consider the true impact of construction activities on the ability for P&D terminals to collect revenue. In consideration of Precise Parklink’s claim that there are longer-lasting and/or broader impacts from large-scale construction projects, based on detailed analysis that revenue loss from certain projects exceeded the RG allowance for example:

- Valid for Queen Street, Laurier Avenue (bike lanes) and Rideau Street
- Not valid in other instances (e.g. Glebe, Sussex Street, Somerset Street)

Consideration is also added for impacts on side streets when a main street is completely shut down due to construction.

10 years ago, neither Precise Parklink nor the City of Ottawa had anticipated the high adoption rate of Pay-by-Phone technology. At the time, a 5% rate of payment by phone was assumed as reasonable, however actual use has fluctuated from 1% in the early days of the contract to around 11% recently. To allow for the opportunity to promote Pay-by-Phone adoption, the City has agreed to reduce Revenue Guarantee with actual numbers of Pay-by-Phone use. Given the lower amount of use in the early years of the contract, the City has estimated that Revenue Guarantee would only be impacted if the actual use reaches 15% before the final year of the contract.

Overall, the Revenue Guarantee has been a significant benefit to the City of Ottawa and is unlikely to be offered by any competitor in a bid process. This is a key component of the decision to extend the contract for 5 additional years.

4.3 Status of Equipment and Warranty Provisions under POSA

Under the agreement, the City of Ottawa has contributed an average of \$51.47 monthly plus \$11.42 in user transaction fees for each P&D terminal in service. The total estimated contribution to the end of the contract in November 2021 is \$6,228 for average monthly costs and \$1,426 in transaction costs for a total cost of \$7,654 per P&D terminal. Total contribution under the WARP is estimated at \$4.8M overall.

The refurbishment of terminals included new 3G modem technology upgrade, a complete test of all components, improved coating that is graffiti and corrosion resistant and upgrade of the solar panels to increase power and manage power more efficiently. On a continuous basis, terminals are maintained beyond the renewal program, parts and labour are covered, credit card readers were updated to comply with PCI requirements, coin selectors were reprogrammed for new coins and ticket rolls were updated.

The renewal plan is on track to have half of the P&D inventory upgraded by the end of April 2020 and the complete inventory is scheduled to be refurbished before the end of the contract. This results in a completely renewed fleet on P&D machines entering the 5-year extension.

City of Ottawa officials are pleased with the progress of the renewal program and feel the progress of the refurbishment initiative is satisfactory.

4.4 Industry/Market Trends and Options

At present, the major trend in the parking industry from the perspective of municipalities is the idea of “Smart Parking” which at its core involves using technology to improve the everyday lives of its citizens. Specifically, by leveraging the Internet of Things (IoT), sensors and actuators, a smart parking system collects information on each parking space to detect the presence or absence of a vehicle and relays it back to a central hub. The collected information is then made accessible in real time via mobile applications with the goal of improving the efficiency of the parking experience for both drivers and management.

Smart parking technology improves the drivers' experience by identifying available parking spaces in real time thus promoting more efficient use of the available inventory. This also has the effect of reducing traffic flow and vehicular pollution by shortening the search for parking and reducing the time drivers spend idling and circling while searching for available parking. Another benefit of smart parking is that it creates new revenue opportunities with the potential for dynamic pricing allowing for management to modify pricing according to factors such as time of day, location, weather, length of the vehicle and unique demand characteristics. Smart parking also permits multiple payment options including pay by plate, E-wallets and SMS payments while allowing for more effective enforcement of the parking regulations via cloud-based ticket management systems. Smart parking applications can be used to provide drivers with other information and services such as relaying the fastest route to available spaces, reserving and pre-paying for parking spaces, online portal to pay infraction tickets, transmitting emergency notifications and important citywide announcements or general information about events in the area. Overall, smart parking creates a unique and progressive approach to managing a City's parking inventory.

Smart parking technology is in its infancy but is being tested in large cities along with airports, hospitals, universities, and other organizations that manage large parking facilities. The roll out of the fifth generation of wireless technology (5G) and the growth in demand for Internet of Things (IoT) based technology is predicted to facilitate the adaptation of smart parking as part of a larger strategy by municipal governments to build "Smart Cities".

5. Conclusion

Based on the evidence discussed in this report, we are supportive of the current City recommendation that considers it is in the best interest of the City of Ottawa to extend the POSA contract. The extension will allow the City to benefit from the Revenue Guarantee, continue to utilize their inventory of P&D equipment and provide an opportunity to analyze data on the changing habits of users towards evolving technologies.

Furthermore, the extension will provide enough time to appropriately scope and launch a formal request for proposal for the next generation of parking operations systems.

5. Summary of Recommendations

Recommendations
<p>Recommendation #1: As evidence of review of the invoice requirements, a checklist should be produced and signed by the accounts payable responsible employees and signed by the manager in charge.</p>
<p>Recommendation #2: The monthly revenue verification and reconciliation should be peer reviewed or reviewed by a supervisor to ensure it is accurate and provide additional strength to this control.</p>
<p>Recommendation #3: Reported revenue should be subject to a full audit (as permitted by the contract) to assess whether there are any anomalies in the reported revenue.</p>
<p>Recommendation #4: Resolving all outstanding reconciling items and audit issues (if any) should be a condition for the extension of the contract.</p>
<p>Recommendation #5: WARP provisions should be considered during negotiations of the extension of the POSA contract. With the increase of Pay-by-Phone users rapidly growing, the 5-year extension presents an opportunity to gather data on the potential to reduce the number of P&D machines and therefore reduce the cost of the WARP program to include only a fraction of the current inventory.</p>
<p>Recommendation #6: The City of Ottawa should reassess its need for additional resources in managing and monitoring the POSA extension.</p>
<p>Recommendation #7: The risk assessment could be developed further to include Political, Economic, Social, Technological, Environmental and Legal perspectives to broaden the risk analysis. The succession planning of key parking management resources is also a risk that could be considered.</p>