Update on Parking Equipment

ITEM 6C

STAFF REPORT

CITY COUNCIL OF THE CITY OF SAUSALITO

AGENDA TITLE

Status of Parking and Revenue Control Systems (PARCS) Equipment Contract for City Parking Lots 1, 2, 3 and 4

RECOMMENDED MOTION

No Action Recommended – Note and File Only

SUMMARY

With Resolution No. 4996 of January 27, 2009 the City Council approved a professional services agreement with Walker Parking Consultants to provide parking and revenue control systems (PARCS) consulting services to help identify and prepare the drawings and technical specifications necessary for the procurement and installation of new parking equipment, to be implemented first in Lots 1 and 3. In its final report under that scope, Walker concluded that while the existing system has provided a relatively high level of service to parking patrons, particularly during the peak weekend exiting periods, it is extremely labor intensive and costly to operate. Walker recommended installation of a multi-space meter (MSM) replacement system because it would allow vehicles to exit the lots at a faster rate, improving not only the efficiency of the exits, but also the vehicular circulation for entering traffic, as congestion and cross-traffic between entering and exiting vehicles would be reduced. Walker Parking completed preparation of Bid Documents for the furnishing and installation of the recommended equipment.

After a bid rejection and rebidding, Council unanimously awarded a contract for replacement of the equipment to Aparc Systems with Resolution No. 5122 of March 16, 2010. Since that time, Staff issued notice of award and notice to proceed to Aparc and the equipment installation was successfully completed in early July, 2010. Despite best efforts of Aparc and its team, and significant participation from City Police, Parking Enforcement, Parking and Public Works Staff, the system is not yet ready for acceptance and full-service use. Aparc continues to be open, objective and constructive in working with the City to resolve the operational issues necessary to satisfy the City's bid requirements, the needs of the City's customers, residents and visitors. It is anticipated, based on the information available to the City and Aparc, that the remaining issues associated with the basic system requirements for acceptance will be resolved by the end of the calendar year. Aparc has prepared the attached summary of the issues and actions taken since early July, and has prepared a brief presentation for Council and the community this evening.

FISCAL IMPACT

None at this time. Aparc is carrying the ongoing operating costs of the equipment until the system can demonstrably satisfy the City's requirements.

ATTACHMENTS

Aparc Status Report and Related Information

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SUBMITTED BY:

Adam W. Politzer
City Manager

Aparc systems

Jonathon Goldman
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Dear Jonathon,

In April 2010, Aparc Systems Inc. ("Aparc") was awarded the contract with the City of Sausalito to deliver a new parking access and revenue control system (PARCS), which included multi-space meters, wireless vehicle space sensors and a wireless real-time integrated handheld enforcement system. In addition, the City also specified a secondary requirement to incorporate an integrated Pay-by-Phone system, online vehicle validation system and a smart card program that could address the City's commuter and resident parkers.

To successfully commission the complete PARCS program, specific deliverables were divided into (3) phases, as outlined below:

Phase 1: Primary Hardware Deliverables

- (21) SIEMENS Pay-by-Space Pay-Stations, including all first-level maintenance training
- (533) Individual Vehicle Space Sensors
- (4) Handheld Enforcement Devices, including all systems training

Phase 2: Secondary System Deliverables

- Pay-by-Phone System
- Integrated web based Vehicle Registry System for Merchants and Hotels
- Commuter Smart Card & Resident Smart Card - stored value card system

Phase 3: Resident Smart Card System Development **(New Development Item)**

- (3) Hour free parking (daily) with anytime functionality and multiple in/out privileges
- Automated account billing system
- Smart Card account validation system protocol and PCI compliance

Aparc has completed all Primary Hardware Deliverables (Phase 1), including all training but excluding the final stage of the enforcement system's integration with Duncan Technologies ("Duncan"). Aparc has provided single data files to Duncan for testing; completion of this work is underway but Duncan is awaiting City approval to release certain Duncan Inglewood System data in order to move forward with the integration.

Aparc Evaluation:

Installation of all (Phase 1) Primary Hardware Deliverables was successfully completed according to project deadlines. During the testing and system acceptance phase of installation, Aparc experienced various issues, specifically relating to the following items:

- Customer Screen LCD Display Instructions on the pay-station – not displaying user-friendly language.
- Customer Convenience and Equipment Interaction – system not interacting well with customers.
- American Express Credit Card Declines – certain American Express Cards were not being accepted at the pay-stations.
- Frequent Modem Resetting – modems would reset causing the pay-station to be inoperable for 2-3 minutes.
- Vehicle Sensor Readings – were not above 95% accuracy guarantee.
- Inaccurate Occupancy Data on the handheld screen displays.
- Handheld Enforcement System Delays
- Inability to add additional time to a parking session

Issue Resolve & System Status

Over the course of the last (6) weeks, Aparc has successfully resolved the majority of issues. Further details have been provided below:

- Customer LCD Display instruction screens on the pay-stations – not displaying user-friendly language.

  Resolution: The instruction screens on the Pay-Stations have been adjusted to make screen instructions more intuitive to the public within the current limitations of the hardware and firmware. The machine instructions now provide additional guidance on how to execute payment, making customer interactions much more user-friendly.

- Customer Convenience and Equipment Interaction – customers not interacting well with the system.

  Resolution: The instruction screen adjustments have provided additional assistance to Sausalito customers. Aparc noticed that the dark green color of the acceptance button on the pay-stations was also confusing to the public so Aparc enhanced the button with a bright green decal for additional visibility.

  Aparc has noticed that there is a noticeable lack of communication and instructional signage within the parking facilities. Many customers when they enter the parking facility do not even understand that payment is required. Foreign tourists do not read English, and are having difficulty understanding how to make payment. If instructional signage were in place to facilitate foreign tourists (e.g. Mandarin, Italian) many of the visiting customers would have greater success with the system. Handicap parkers are also not aware that pay-for-parking is in effect, many handicap parkers believe they are exempt from pay parking because of their special parking

privileges. Furthermore, off-street pay-stations that are closely positioned next to the old single-head coin meters, making it extremely difficult for on-street parkers to understand which payment terminal is most appropriate.

Recommendations:

1.) A comprehensive signage program is an essential element of any parking program and is strongly recommended for the City of Sausalito's parking facilities in Phase 3. Aparc recommends that the City develop a comprehensive directional and user-instructional signage program for general parkers, multi-lingual parkers and handicap parkers to improve customer interaction with the parking facilities and pay-station equipment. Aparc will prepare a proposal for these services upon request.

2.) The current on-street coin only meters are confusing to the public because they are closely positioned to the off-street SIEMENS pay-stations. Aparc recommends that the City of Sausalito commission the next phase of parking equipment (pay-stations and vehicle sensors), as budgeted for this fiscal year, to improve user convenience and to bring consistency and cohesiveness to the on-street and off-street parking. Commissioning the remaining pay-stations (next phase) would provide even more opportunity to capitalize on the added value programs being delivered in phase 2 (pay-by-phone and online vehicle registry system for merchants and hotels).

- American Express Credit Card Declines – certain American Express Cards were not being accepted at the pay-stations.

  Resolution: Aparc advised SIEMENS (equipment manufacturer) of the AMEX credit card issue. SIEMENS provided Aparc with new credit card firmware for the pay-stations and this issue has been satisfactorily resolved as of September 24, 2010.

- Frequent Modem Resetting – modems would reset causing the pay-station to be inoperable for 2-3 minutes.

  Get Well Plan: Aparc advised SIEMENS (equipment manufacturer) of a frequent modem resetting issue. Aparc has now installed new communication modems, new Central Processing Units (CPU's) and new firmware from SIEMENS into the pay-stations most frequently affected. Since these changes were made on September 24 there has been a significant reduction in the frequency of modem resets, particularly in unit #22 which had the worst performance prior. For the month of October less than 1% of transactions have failed due to the modem resetting issue.

  Although modem resets are now below 1%, Aparc is still working with SIEMENS on new firmware to adjust the instructional screens on the pay-stations when modem resets do occur. Having an instruction message on the pay-station screen to indicate the 2-3 minute delay will ensure customers understand there is a temporary delay and to use another pay-station for their

transaction. Adding this screen instruction will remove multiple attempts during the reset and will mitigate customer frustration.

Aparc will continue to monitor and implement system changes into the pay-stations to improve performance further below the standard acceptance level of 1%. Aparc has attached statistics on the modem resetting issue. The statistics provided clearly outline the significant decrease in modem resets since the program went operational and outline that the pay-stations were well below the 1% benchmark.

- Vehicle Sensor Readings – were well below the 95% accuracy guarantee.

  Get Well Plan: The vehicle sensor readings and the software interaction with the enforcement system has required a significant level of effort since going into service in July. Over the course of the last 10 days a new filtering device was applied to the sensor logic to improve enforcement performance. Aparc has been working with Streetline Sensors to reach the system acceptance milestone for the sensors in Sausalito. Following the last logic update, Aparc initiated another test period on October 21, 2010 and will be testing the system twice daily through Monday November 01, 2010. The thorough testing of the sensors will help Aparc and Streetline identify system issues and make any necessary further improvements to improve handheld display accuracy. Streetline must provide Aparc with a minimum acceptance level of 95% accuracy in order to gain complete system acceptance. Although a minimum acceptance level of 95% has been determined as acceptable, Streetline sensors have committed that their objective is to continuing improving sensor accuracy.

- Handheld Enforcement System Delays

  Aparc has experienced some difficulty with commissioning the handheld enforcement system because of equipment delays from the manufacturer, training coordination delays and some integration issues with the Streetline vehicle Sensors.

  An equipment backlog at Zebra Printing Technologies delayed the initiation of the City's enforcement program by 4-weeks. Aparc could not proceed with systems training until the City's equipment was available, allowing enforcement personnel to practice on the equipment once training had completed. However, a combination of class study and in-field training took place and is now complete.

  Enforcement activity went live but inaccuracies in the sensor data resulted in unacceptable performance. When the enforcement system went live the sensors were not performing at a read accuracy of 95% or better, resulting in inaccurate handheld screen displays (i.e. red spaces when a vehicle was not present). Since enforcement went live, Aparc and Streetline have made significant improvements to the system, repositioning repeater communication devices and looking at the logic interpretation to improve performance. Although we have made progress with the Streetline sensors, significant equipment debugging and repositioning has delayed

system acceptance. Aparc has outlined to Streetline that sensors must provide a minimum of 95% read accuracy in the User Acceptance Test for Aparc to accept the sensor program for the City of Sausalito. Aparc will have User Acceptance Test results by November 09, 2010.

Aparc anticipated project delays and additional time for system debugging because of the complexity of the integrated systems within the City's parking system. Although some performance issues are still requiring resolution, the majority of outstanding issues are primarily related to the vehicle sensors and the enforcement system that partly relies on the sensor data information for enforcement. Aparc fully intends to have an integrated vehicle sensor program fully operational but we are prepared to recommend an alternate form of enforcement or an alternate sensor technology should sensor accuracy of 95% not be achievable. The City of Sausalito's program has the complete attention of Aparc and our partners Streetline and we are working to resolve all systems issues for November 09, 2010.

- Inability to add additional time to a parking session

SIEMENS pay-stations were engineered for efficient communications and increased performance using a one-way communication methodology. Although this feature reduces ongoing costs, this methodology creates limitations with add-time purchases. City of Sausalito customers have the ability to purchase additional time from any pay-station but unused time cannot be recalculated and displayed on the payment section of the customer receipt. The unused time is recorded along with the new purchase at the backend, making it possible for Aparc to properly handle enforcement but the customer receipt only reflects the new purchase.

Get Well Plan: The one-way communication methodology of the SIEMENS pay-station is a system design issue that cannot be easily fixed with new firmware to accommodate the add-time feature. Alternatively, Aparc can place standard messaging on the bottom of every receipt to notify the customer that: *"When additional time is purchased at the pay-station the balance of unused time will not be reflected on the receipt but will be recorded by enforcement"*. Should this alternative messaging be sufficient, Aparc can provide add-time purchases at the pay-stations.

▲ IS YOUR SPACE NUMBER ▲
Paystation #10
CITY OF SAUSALITO
INCORPORATED
SEPT. 4, 1893
MARIN CO. CALIF.
▼ PARKING TIME EXPIRES AT ▼
11/03
11:39am
NOT REQUIRED TO BE DISPLAYED ON DASH
2010 Ticket 0000207/257
AMOUNT JETON
When additional time is purchased at the pay-station, the balance of unused time will not be reflected on the receipt but will be recorded by enforcement.
11/03/2010 11:39AM

The City of Sausalito parking program also has a dynamic pay-by-phone system that provides customers with a convenient way to add-time to their parking session. Should customers use the pay-by-phone service for their initial parking transaction they would have alternative ways of adding time, most notably the SMS text message, smart phone application, and the toll free dial-in service. Although a personal account needs to be registered in order to use the service, the pay-by-phone system is the most convenient interface (personal phone) for Sausalito customers to add parking time to their parking session. The pay-by-phone program is fully-integrated with Aparc's enforcement program and the City's merchant account making the program administratively friendly and extremely convenient.

Phase 2: Secondary System Deliverables

At the request of the City, Aparc is beginning to release 2nd Phase deliverables ahead of schedule to educate the City on some of the additional benefits of the parking system.

Aparc has agreed to set up BETA versions of the Vehicle Registry System, at no cost to the City, with Casa Madrona, Gene Hiller and the Inn Above Tides Hotel. Using the system, local businesses will have access to a web portal that would allow merchants to validate and register their customer's vehicles. Merchants benefit because they can provide their customers with enhanced customer service and the City benefits because they can profit off of the added value service, which promotes merchant satisfaction. Once implemented, the City of Sausalito could offer the Vehicle Registry System to retailers, hotels and restaurants with valet services. Assuming that the BETA testing is successful, Aparc will provide VRS services to the City and its customers based on a contract to be developed.

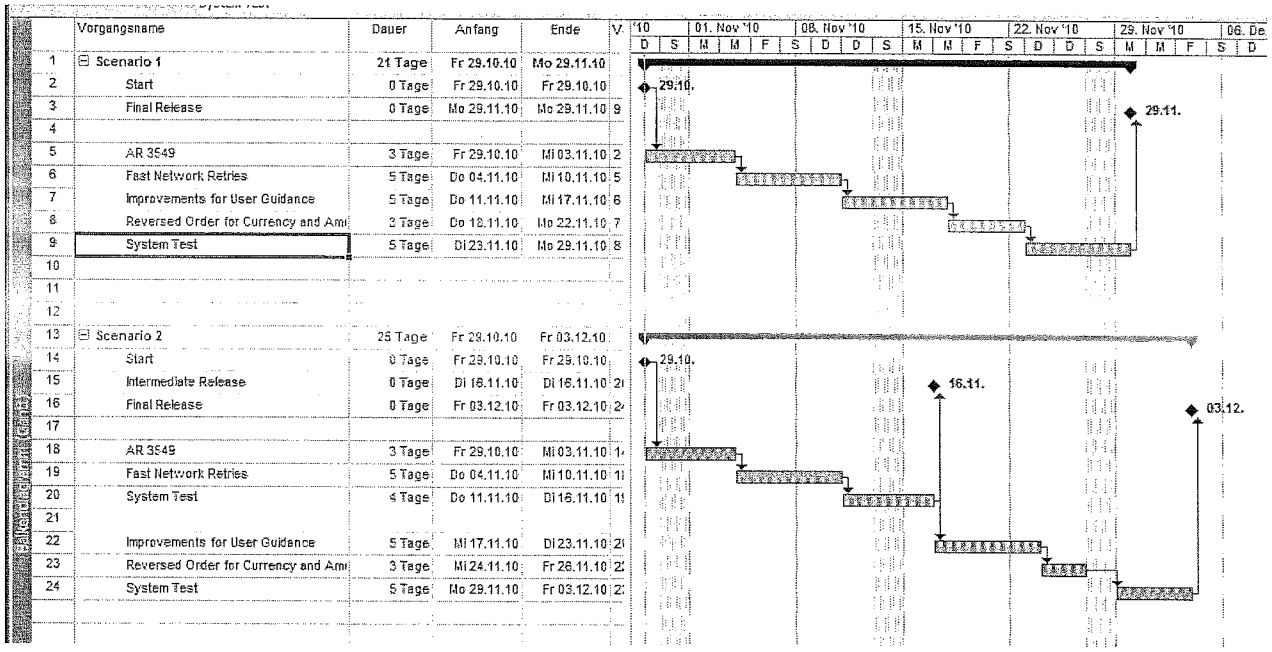
Aparc is also moving forward with the Commuter Card (Stored Value Smart Card). **The Commuter Smart Card is designed to make pay parking easier and more convenient for the commuter**. The card has a built in discounted rate structure that only applies to commuters. When inserted into the pay-station the special rate automatically adjusts the pay-station rate structure and prompts the customer to make his purchase accordingly. The Stored Value card is a pre-loaded card that deducts value with every purchase.

The City of Sausalito expressed in the PARCS RFP for a parking card that provided Residents with (3) hours free parking. Aparc can deliver a Resident Card today that provides Residents with (3) hours free parking, but without in-and-out privileges. Further development is required to develop a Resident smart card that will provide the flexibility to perform all of the desired features, including multiple ins/outs, segmented parking and billing in excess of the allotted (3) free hours. Aparc has committed to work with the City of Sausalito on the development of a new Resident smart card with all flexibility required in Phase 3 of the parking program.

SIEMENS (Change Requests)

Aparc has approached SIEMENS regarding a few minor change requests to improve customer convenience at the SIEMENS pay-station. The following documentation clearly outlines what change requests have been submitted and the development schedule for these activities:

- AR 3549 (Auto coin jam option) – Aparc has requested new firmware to have better control of this feature.
- Improvements for User Guidance – Instruction screen during modem resetting instances.
- Reversed Order for Currency and Amount – ($) sign moved from the right side of the display to the left side.



	Vorgangsname	Dauer	Anfang	Ende	V
1	Scenario 1	21 Tage	Fr 29.10.10	Mo 29.11.10	
2	Start	0 Tage	Fr 29.10.10	Fr 29.10.10	
3	Final Release	0 Tage	Mo 29.11.10	Mo 29.11.10	9
4					
5	AR 3549	3 Tage	Fr 29.10.10	Mi 03.11.10	2
6	Fast Network Retries	5 Tage	Do 04.11.10	Mi 10.11.10	5
7	Improvements for User Guidance	5 Tage	Do 11.11.10	Mi 17.11.10	6
8	Reversed Order for Currency and Am	3 Tage	Do 18.11.10	Mo 22.11.10	7
9	System Test	5 Tage	Di 23.11.10	Mo 29.11.10	8
10					
11					
12					
13	Scenario 2	25 Tage	Fr 29.10.10	Fr 03.12.10	
14	Start	0 Tage	Fr 29.10.10	Fr 29.10.10	
15	Intermediate Release	0 Tage	Di 16.11.10	Di 16.11.10	2
16	Final Release	0 Tage	Fr 03.12.10	Fr 03.12.10	2
17					
18	AR 3549	3 Tage	Fr 29.10.10	Mi 03.11.10	1
19	Fast Network Retries	5 Tage	Do 04.11.10	Mi 10.11.10	1
20	System Test	4 Tage	Do 11.11.10	Di 16.11.10	1
21					
22	Improvements for User Guidance	5 Tage	Mi 17.11.10	Di 23.11.10	2
23	Reversed Order for Currency and Am	3 Tage	Mi 24.11.10	Fr 26.11.10	2
24	System Test	5 Tage	Mo 29.11.10	Fr 03.12.10	2

Aparc has recommended SIEMENS to follow scenario #2 for this development, which would provide us with two firmware releases over the course of the next 33 days so we can release new items as quickly as possible. To confirm the completion of these change requests, SIEMENS has provided a letter of commitment to the City of Sausalito (Attached). However, these change requests are minor changes that will not reflect significant increases in performance and thus should be excluded for system acceptance.

November 01, 2010

Dear Jonathan Goldman

Siemens Industry, Inc. Traffic Solutions business unit wishes to assure the City Counsel and the Director of Public Works for the City of Sausalito that we are diligently working to resolve difficulties identified by the City and have committed software engineering resources in Germany and the US to address these issues.

The following items are being aggressively addressed with a target date of Mid-November for first release (intermediate) and end of November / early December for final release of these software modifications addressing desired adjustments to user interface.

1. Escrow motor reject
2. GPRS communication attempts
3. User navigation and interface
4. Currency and amount appearance

We solicit your continued understanding as we fine tune our product to meet your requirements.

Best regards,

Bryan Stone
Parking Solutions Product Manager
Siemens Industry
Mobility Division
Intelligent Traffic Solutions

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