Memorandum

MIAMI-DADE COUNTY

Date: January 21, 2010

Supplement to
Agenda Item No. 8J1A

To: Honorable Chairman Dennis C. Moss
and Members, Board of County Commissioners

From: George M. Burgess
County Manager

Subject: Supplement to Resolution Authorizing the Execution of a Participation Agreement Between Miami-Dade County and the South Florida Regional Transportation Authority for the Provision of Services Related to the Automated Fare Collection System (AFCS)

This supplement provides additional information on Miami-Dade Transit's (MDT) computer system for the Automated Fare Collection System (AFCS) and the methodology used to assign estimated costs that the South Florida Regional Transportation Authority (SFRTA) will pay Miami-Dade County to provide clearinghouse services for their future AFCS. Also attached is a revised Clearinghouse Cost Table clarifying the description of service functions and associated costs.

The SFRTA will be required to make a substantial capital investment in the procurement of computer equipment for their AFCS (hardware, software, engineering and installation) of approximately $670,000 in order to interface with MDT's computer system.

MDT will be using existing staff to support SFRTA's AFCS. The department expects to be able to handle additional AFCS related tasks generated by SFRTA's estimated 5,000 riders without the need for increased staffing. As a result, the estimated $240,000 annually that SFRTA will pay MDT represents additional revenue for which there would be no anticipated increases in budgeted expenses.

BACKGROUND:

In December 2004, in an effort to encourage more regional transportation projects, the Federal Transit Administration (FTA) recommended that SFRTA develop an AFCS for the South Florida region. MDT worked with SFRTA to develop specifications for a regional system.

The County and SFRTA originally envisioned a Universal Automated Fare Collection System (UAFCS) to serve as a regional system encompassing Tri-Rail, Palm Tran and Broward transit systems (R-167-07). In March 2006, SFRTA issued an RFP for the procurement of a regional UAFCS. Five firms responded to the solicitation, however, two protests were received which significantly prolonged the process. On July 13, 2007, SFRTA and the County mutually agreed to terminate the joint procurement after more than a year of delay due to issues raised in the protests. SFRTA cancelled the solicitation on July 16, 2007.

The computer system architecture that was advertised in the SFRTA solicitation included an independent (third party), privately operated regional clearinghouse computer system which would interface and provide clearinghouse services between the individual MDT and SFRTA computer systems with the capacity to add Broward and Palm Beach County's transit systems. In essence, the framework was proposed to consist of three separate computer systems; one each for MDT and SFRTA and one regional host computer system. The regional hosted clearinghouse computer system would perform tasks such as reconciliation and settling of revenues between MDT and SFRTA and the recording and retaining of all transactional information for both systems. The UAFCS procurement was terminated before a Best and Final Offer (BAFO) could be submitted and negotiated; therefore, the cost

for the regional clearinghouse computer system and MDT and SFRTA's computer systems were never presented. However, internal working documents from this procurement show that the cost of the regional clearinghouse computer system infrastructure was estimated to cost $3 million; MDT's computer system was estimated to cost $1.8 million; and SFRTA's computer system was estimated to cost $800,000. It was also anticipated that MDT would assume approximately fifty-percent of the cost associated with the regional clearinghouse computer system ($1.5 million) based on its system size and ridership when compared to SFRTA, Broward and Palm Beach counties transit systems. Therefore, MDT computer infrastructure cost could have been as high as $3.3 million and SFRTA's at $1.3 million. The operational staff support for the regional host computer was to have been a separate and additional expense.

Miami-Dade County Procurement of AFCS

The County's RFP for the AFCS, issued in September 2007, required Proposers to provide technology capable of supporting a regional system to allow patrons the convenience of accessing any of South Florida's transit systems that elect to become part of the regional system. The contract was awarded to Cubic Transportation Systems, Inc (Cubic) on May 6, 2008 and Notice to Proceed (NTP) was issued on June 16, 2008. MDT fully launched the system on October 1, 2009.The AFCS procurement included a computer system which cost the County $1,058,917.

MDT's current AFCS computer system includes essentially the same functionality as that originally envisioned by SFRTA and the County in the 2006 solicitation. While MDT's computer system is designed to support expansion to the neighboring South Florida agencies, there is clear demarcation at the Dade/Broward County line which would require SFRTA, Broward or Palm Beach transit systems to purchase computer equipment to interface with MDT's computer system. All equipment and IT support required to interface with MDT's computer system is the sole responsibility of SFRTA. SFRTA's procurement with Cubic Transportation includes the engineering design, configuration, software and hardware (data servers, hubs, routers and switches), installation and testing which is estimated to cost $670,000. SFRTA would also assume all costs for recurring circuit data, Payment Card Industry (PCI) standard equipment to secure sensitive credit card data and all labor required to integrate the equipment to MDT's computer system.

Additionally, to ensure that the County does not incur any expenses for supplemental hardware and software integration, MDT included a $120,000 contingency amount (to be paid by SFRTA) in the Participation Agreement if SFRTA required MDT's assistance with network integration.

MDT's AFCS computer system's physical data storage space is substantial – 6 terabytes of storage capacity. To put this in perspective, this is enough storage capacity to handle three fare collection system's the size of MDT. MDT currently processes approximately 250,000 boardings per day compared to approximately 5,000 potential daily SFRTA riders transferring into MDT.

This nominal increase in physical data for SFRTA is marginal when considering the amount of available storage capacity. Additionally, the Clearinghouse Cost Table in the Participation Agreement includes a unit cost for retention of data generated by SFRTA patron transactions. For example, every time a transaction is performed at SFRTA's Ticket Vending Machine (purchases, balance inquiries, etc.), MDT charges SFRTA a fee of $0.07. MDT estimates that 5,000 SFRTA users will conduct approximately 2,500 transactions per day; therefore, we estimate that SFRTA will pay MDT $43,750.00 annually for this activity. If transactions exceed 2,500 per day, the annual payment increases incrementally.

Additionally, MDT's computer system has a warranty which covers maintenance of the software and hardware for three (3) years. MDT will revisit this category once the warranty expires to ensure that SFRTA assumes a proportionate share of on-going maintenance service costs.

Staff Allocation

MDT will be using existing staff to handle additional AFCS related tasks generated by SFRTA's estimated 5,000 riders. As a result, the estimated $240,000 annually that SFRTA will pay MDT represents a new source of increased revenue to the department for which there would be no anticipated increases in budgeted expenses. The SFRTA will pay the County an allocated share (25%) of eleven (11) MDT employee's salaries, fringes and benefits, which total $165,000 annually. This figure was a negotiated amount agreed to between MDT and SFRTA.

Function	Staffing	Task Description	25 % of Cost
Customer Service Operations	5	Three (3) existing Administrative Officers, a Clerk 3 and Clerk 4 to provide customer service related activities to support SFRTA's AFCS.	$40,000
Financial Management	2	An existing Accountant and Clerk to perform general accounting, financial reporting and auditing functions to support SFRTA's AFCS. It should be noted that the Computer System is designed to provide these reports electronically which minimizes manual preparation.	$30,000
Systems Management/ Information Technology (IT)	4	An existing Database Administrator, Network Manager, Operating System Programmer and System Analyst to perform systems related functions for SFRTA's AFCS.	$95,000
Total:	11		$165,000

The remaining $75,000 that SFRTA is estimated to pay the County is for recurring phone system charges, card fulfillment, Ticket Vending Machine (TVM) and reader activity detailed in the attached Clearinghouse Cost Table.

Clearinghouse Cost Table Methodology

Since August 2009, MDT and SFRTA staff held numerous meetings to frame operational service support needs and responsibilities, and to negotiate the cost that MDT will charge SFRTA to provide clearinghouse and back office support for their future AFCS.

MDT and SFRTA mutually agreed to use the clearinghouse cost sharing methodology used during the joint procurement in 2006 to estimate the costs for providing these services. The basic cost sharing assumption used to estimate clearinghouse and back office services is largely based on SFRTA ridership and transaction activity.

Additionally, MDT conducted market research to compare clearinghouse cost modeling and unit cost values to other transit properties providing clearinghouse services for neighboring transit systems. Detailed information is included in Attachment 2. To briefly review, there are nine (9) major transit properties that have smart-card technology that perform back office and clearinghouse services for

other transit agencies in the United States. Our research found that the pricing logic for provision of these services varies. For example, the Metropolitan Atlanta Regional Transit Authority (MARTA) in Atlanta, Georgia provides clearinghouse services for two transit properties (Cobb and Clay County transit agencies) that combine for approximately 479,000 trips per day. MARTA performs back office services for these counties and charges a flat rate of only $3,000 per month ($36,000 annually). MARTA administrators acknowledged that they are not covering their expenses with this rate and will be revisiting their cost model in the near future. Conversely, the Metropolitan Transportation Commission (MTC) in San Francisco, which outsources its clearinghouse services for the region (third party), provides clearinghouse services for five major transit properties in the Bay area that combine for approximately 1.2 million trips per day. Given the number of trips and transactions, MTC clearinghouse services cost these properties collectively $7 million annually. During the survey, staff found that third party, privately operated clearinghouses are profit-driven and their costs include a profit margin. Four of the nine major transit properties surveyed could not provide specific costs information related to clearinghouse and back office services due to confidentiality agreements. While the service and fee structures of these systems vary widely, such arrangements are not unusual in the transit industry and support regional efforts.

It is also important to note that the Participation Agreement stipulates that MDT and SFRTA will revisit all costs in six months after implementation of SFRTA's AFCS to ensure that the estimated costs listed in the Clearinghouse Cost Table reflect actual call volumes, transaction activity and staff allocation to support clearinghouse and back office functions for SFRTA.

Assistant County Manager

Attachment 1
Interim Clearinghouse Cost Table

SFRTA ACTIVE SMARTCARD ACCOUNTS BASIC OPERATING ASSUMPTIONS				COST/UNIT	Base Assumptions
				5,000	Assumes that approximately 1/3 of SFRTA daily passengers or 5,000 passengers will convert to the EASY Card in the first year. This assumption is used to calculate the activities shown below in Items
Monthly Transactions	Assumes number of touches of Tri-Rail riders for 250 days per year, excluding weekends (based on 2009 Calendar Year)			416,667	Assumes that each Tri Rail EASY Card user rides every weekday and will "tap" their card four times in using the Tri Rail system. **(5,000 riders x 4 taps x 250 days /12)**
Ticket Vending Machine Transactions	Assumes 50% of SFRTA patrons will use TVM daily			2,500	Assumes 2,500 daily transactions at Tri Rail TVMs. This assumption is used to calculate Item 8. TVM Transactions
Autoload Activation	Assume 15% of accounts			750	This assumes that a minimum of 15% of account holders will choose to autoload option their cards. This assumption is used to calculate the activities shown below in Item 4, Autoload
Autoload deactivation	Assume 5% of autoload accounts			38	This assumes that a minimum of 5% of account holders will de-activate the autoload option. This assumption is used to calculate the activities shown below in Item 5, Deactivation

ITEM/ACTIVITY	DESCRIPTION	UNIT	PAYMENT BASIS	ANNUAL COSTS	Base Assumptions
Card Management					
1. Card Fulfillment	Fee assessed for fulfilling new card order, not including cost of actual card	$0.60	Per card	$3,000.00	The unit cost estimate is the same unit cost estimate used during the joint procurement in 2006 for back office services for the region. This includes the following: salaries costs for encoding (.06/each); preparing envelopes (.10/each); and first class postage (.44) per card for mail-out. **(5,000 riders x $0.60)**
Customer Services					
2. Customer Service Basic Operations	**General tasks include, but are not limited to the following:** *Provide accurate and detailed information regarding fares, fare media options, and parking, including where to purchase fare media and obtain special passes * Provide accurate information in the use of equipment and systems, including TVMs, faregates, bus fareboxes, and POS equipment *Review reports produced by Nextfare *Explain restitution process to customer and process electronic Restitution Request for action from appropriate area	$3,333.33	Monthly	$40,000.00	This cost represents 25% salaries and time of three (3) Administrative Officers, a Clerk 3 and Clerk 4 to provide customer service support to SFRTA.
ACD/ IVR Phone System	Facility and phone infrastructure/equipment			$4,000.00	MDT's recurring cost for the ACD/IVR Phone System is $17,000 annually. MDT proposes that SFRTA pay a flat $4,000 annually to support ACD / IVR system cost or 23.5% of the recuring cost. **This is a fixed cost.**
3. Variable Account Management	Managing each active customer record, general inquiries, account info updates, and hotlist management	$0.19	Per account per month	$11,400.00	The unit cost estimate is the same unit cost estimate used during the joint procurement in 2006 for back office services for the region. **(5,000 riders x $0.19 x 12)**
Autoload Services					
4. Account setup, servicing/support	On-going service, processing and administration for each active Autoload account setup; credit card processing	$5.00	Per account	$3,750.00	This unit cost estimate is the same unit cost estimate used during the joint procurement in 2006 for back office services for the region. Salary cost for accessing and entering account information to database; setting up credit card accounts and processing; and any required customer contact. **(750 cards x $5.00)**
5. Account Deactivation	On-going service, processing and administration for each deactivated Autoload account.	$2.00	Per account	$76.00	This is the same unit cost used in the joint procurement in 2006 for back office services for the region. **(38 cards x $2.00)**

ITEM/ACTIVITY	DESCRIPTION	UNIT	PAYMENT BASIS	ANNUAL COSTS	Base Assumptions
Financial Management					
6. Basic Monthly Ops & Admin	General accounting, financial reporting, auditing	$2,500.00	Monthly	$30,000.00	This amount represents 25% of the salary cost for an Accountant and Clerk. These positions are required in order to prepare and process monthly transaction reports.
7. Reconciliation and Settlement	Every touch of the smart card to a target, plus autoload transactions.	$0.001	Per transaction per month	$5,000.00	This unit cost estimate is the same unit cost estimate used during the joint procurement in 2006 for back office services for the region. MDT estimates that Tri-Rail riders would touch the reader 4 times per day. 1. Entering Tri-Rail Station 2. Exiting Tri-Rail Station; Return Trip: 3. Entering Tri-Rail Station 4. Exiting Tri-Rail station. This cost is necessary for processing information and managing fare payment. Each record gets created in database. Every touch increases retention requirement in database **(416,667 transactions x $0.001 x 12)**
8. TVM Transactions	TVM transactions are compiled, reconciled and funds settled.	$0.07	Per TVM transaction per month	$43,750.00	TVM transactions are separate from touches. Every touch and purchase at the TVM represents a separate transaction. This include smart card purchases and tickets without microchip technology. Every sales transaction is recorded and retained in MDT's back office database. The database will also reconcile and settle funds. Assumes 2,500 Tri Rail TVM transactions every weekday. **(2,500 transactions x $0.07 x 250 days)**
Security Management					
9. Credit/Debit Chargeback Mgmt	Researching transaction disputes, managing fraud	$336.00	per incident	$4,032.00	Salary costs for monitoring and researching fraudulent activities. The annual cost represents an estimated one (1) incident per month. These incidents do not include external investigation for criminal activities. **($336 x 12)**
Systems Management (IT)					
10. Systems Management	• Design and implementation of network connectivity and security from SFRTA to MDT • PRI installation for CPOS units • Design and implement VLAN for TVM • PCI compliance vulnerability testing and configurations • Backup and Recovery of data • Scheduled maintenance • Disaster Recovery • Operating systems maintenance for TVM • System access control and capacity management • System security control • Network device management, administration and security monitoring • Database instrumentation, monitoring, troubleshooting and repair	$7,871.20	Monthly	$94,454.45	This is the combined salary for 25% of four (4) staff consisting of Database Administrator, Network Manager, Operating System Programmer, and System Analyst. With fringe benefits and on-call services, the cost of this effort is $94,454.
	• Database diagnostics and problem resolution • Database backup, restore and capacity management • Application version control • application monitoring and performance efficiency • Monitor data latency and accuracy • Central system software management and change control • Application issue research and resolution • Manage third party applications • Users access and account maintenance • Assist and manage external interfaces • Maintain issue tracking system • Provide application audit support • Standard and adhoc report/query development and support • EASY Card center user and application support • Website application, issue and functionality maintenance and support • Liaison with Government Information Center (GIC) for website publishing and deployment • Internal support of Finance and EASY Card Center staff who will be supporting the SFRTA transactions and activities				
	Sub Total			**$239,462.45**	Recurring Estimated Annual Cost

ITEM/ACTIVITY	DESCRIPTION	UNIT	PAYMENT BASIS	ANNUAL COSTS	Base Assumptions
One Time Contingent Cost					
11 Set-Up Contingency (estimated)	The following estimate is provided in the event the fare collection contractor does not provide support for engineering, design, documentation, training, and hardware for SFRTA during the initial implementation.	10%	Not to Exceed (Estimated)	**$23,946.25**	This assumes a one-time charge for MDT in supporting the implementation of SFRTA system. This is an estimated amount to be evaluated and paid after 6 months of actual operation from the Implementation Date
12 Network Contingency (optional)	The following estimate is provided in the event the fare collection contractor does not provide support for Network Integration Hardware		Not to Exceed (Estimated)	**$94,374.42**	This is an initial hardware cost necessary for network services integration to SFRTA. It is optional as whether this equipment is purchased directly by MDT or SFRTA. If purchased by MDT, SFRTA will reimburse actual costs. This is an estimated amount to be evaluated and paid after 6 months of actual operation from the Implementation Date
			Total (estimate)	**$357,783.12**	First year cost (estimate)
13. Credit Card Processing Fees	Credit transactions processing fees pass through to the Miami-Dade County.	3.00%	monthly	$66,000.00	This is based on an estimated $2.2M SFTRA credit card sales. These costs are paid directly to Miami Dade Finance.
14. Fare Media Encoding Fees	The cost to perform Sections 4a and b, Provisions of Fare Media in Attached Participation Agreement will be calculated based on the hourly labor rate of revenue employees required to complete said task.				If these services are required, SFRTA will reimburse based on hourly labor rates.

Attachment 2

Clearinghouse and Back Office Comparisons

Agency / City	Back office Operated by:	Transit Properties Served	Payment Description and Unit Costs		Estimated Annual Cost
Miami-Dade Transit (MDT) Miami, FL	Agency	**One (1) property:** Tri-Rail (SFRTA) **5000 riders per day transferring into Miami-Dade** **416,667 transactions per year**	Reconciliation: TVM Transaction: Customer Serv: Financial Mgmt: Info Tech (IT):	$0.001 $0.07 $3,333 mo $2,500 mo $7,871 mo	$240,000
Metropolitan Atlanta Regional Transit Authority (MARTA) Atlanta, GA	Agency	**Two (2) Properties:** Cobb County Transit Clay County Transit **478,882 trips per day** **# of transactions unavailable**	Flat monthly fee:	$3,000	$36,000
New York City Transit Authority (NYCTA) New York, NY	Agency	**One (1) property:** Port Authority of New York and New Jersey (PATH) **278,472 trips per day** **47.4 million transactions per year**	Transaction fee:	$0.0213	$1 million
Metropolitan Transportation Commission (MTC) San Francisco, CA	Outsourced (third party)	**Five (5) Properties:** AC Transit Golden Gate Muni Caltran Bay Area Regional Transit (BART) **1.2 million trips per day** **# of transactions unavailable**	Transaction fee: Basic Operations and Administration:	$0.015 $585 K mo.	$7 million (Properties pay pro rata share based on ridership)
King County Metro Transit Seattle, WA	Outsourced (third party) Some functions shared between agency and third party	**Seven (7) Properties:** East King County Everett County Transit Kipsap County Transit Pierce County Transit Sound Transit Washington State Ferries **400,000 trips per day** **# of transactions unavailable**	Transaction fee: Software Maint: Financial Mgmt: Customer Serv:	$0.0025 $32,000 mo. $12,000 mo. $32,000 mo.	$1.5 million (Properties pay pro rata share based on ridership)

Note: The following transit properties have smart-card technology and perform back-office services to connecting transit systems. However, their back-office and clearinghouse functions are supported by a third party (outsourced). Due to confidentiality agreements, they were unable to provide their costs:

- Chicago Transit Authority (CTA)
- Massachusetts Bay Transportation Authority (MBTA)
- Washington Metropolitan Area Transit Authority (WMATA)
- Los Angeles County Metropolitan Transportation Authority (LACMTA)