



**SYSTEM AND SERVICES AGREEMENT BETWEEN
BROWARD COUNTY AND GENFARE, A DIVISION OF SPX CORPORATION**

This System Services Agreement (the "Agreement") is made and entered into by and between Broward County, a political subdivision of the State of Florida ("County" or "Customer"), and GENFARE, a division of SPX Corporation, a Delaware corporation licensed and authorized to transact business in the State of Florida ("Provider" or "Contractor").

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

ARTICLE 1. DEFINITIONS

- 1.1 Board. The Board of County Commissioners of Broward County, Florida.
- 1.2 Business hours or business day. 7 a.m. to 7 p.m. Eastern Time during weekdays that are not County holidays and on which County has not otherwise declared its offices closed.
- 1.3 Contract Administrator. The Director of Broward County Transportation or such person's successor as designated by County in writing.
- 1.4 Documentation. All manuals, user documentation, specifications, and other related materials pertaining to the System and other hardware and software that Provider customarily furnishes to purchasers of the System.
- 1.5 Easy Card Subsystem. The Software, Equipment, and other property identified in Phases 6-10 of Exhibit A being provided to County pursuant to this Agreement.
- 1.6 Equipment. The hardware and other tangible property identified in Exhibit A being provided to County pursuant to this Agreement, including any embedded software and firmware incorporated therein or customarily provided by Provider to purchasers of the Equipment.
- 1.7 Mobile Ticketing Subsystem. The Software, Equipment, and other property identified in Phases 1-5 of Exhibit A being provided to County pursuant to this Agreement.
- 1.8 Purchasing Director. The Broward County Purchasing Director as appointed by the Broward County Administrator.
- 1.9 Services. All required installation, integration, programming, configuration, customization, and enhancements of the System, together with necessary and appropriate consulting, training, and project management services, to meet County's ongoing needs in connection with the System, as further specified in Exhibit A.
- 1.10 Software. All proprietary or third-party software (including embedded firmware, software and the Subscription Services) or other intellectual property rights, and the Documentation for same, provided or licensed to County or third party users pursuant to this Agreement, including the computer programs (in machine readable object code form) listed in Exhibit A and any subsequent updates, upgrades, releases, or enhancements thereto developed by Provider during the term of this Agreement.
- 1.11 Subscription Services. The mobile ticketing services, as hosted by or on behalf of Provider, as set forth in Exhibit A and Exhibit F. The Subscription Services shall be considered part of the Services, as defined in Section 1.9 above.
- 1.12 Subsystem. The Easy Card Subsystem or the Mobile Ticketing Subsystem, as applicable.

1.13 Support and Maintenance Services. The maintenance and support for the Software required to maintain optimal performance of the Software as described in the Documentation and Exhibit C, as well as the support and maintenance services required for County to achieve and maintain optimal performance of the Software.

1.14 System. The Software, Equipment, and other property identified in Exhibit A being provided to County pursuant to this Agreement.

ARTICLE 2. EXHIBITS

The following exhibits are attached hereto and incorporated into this Agreement:

Exhibit A	Statement of Work
Exhibit B	Payment Schedule
Exhibit C	Support and Maintenance Services
Exhibit D	Insurance Coverages
Exhibit E	Work Authorization Form
Exhibit F	Service Level Agreement
Exhibit G	Additional Terms for Federally-Funded Programs
Exhibit H	Federal Transit Administration Supplement

If there is a conflict or inconsistency between any provision contained in Articles 1 - 14 and any provision contained in any of the Exhibits, the provision of Articles 1 - 14 shall prevail and be given effect unless expressly stated to the contrary.

ARTICLE 3. SCOPE OF SERVICES & SOFTWARE LICENSE

3.1 Scope of Services. Provider shall complete all Services required in this Agreement inclusive of the Exhibits. Unless stated otherwise in this Agreement, the work required of Provider includes all labor, materials and tasks, whether or not enumerated in the Agreement, that are such an inseparable part of the work expressly stated in the Agreement that exclusion thereof would render Provider's performance impractical, illogical, or unconscionable.

3.2 Support and Maintenance Services. For as long as Broward County is paying for Support and Maintenance Services in accordance with Exhibit B, Provider shall provide Support and Maintenance Services at the rates set forth in Exhibit B to ensure the proper functioning and optimal performance of the Software (as set forth in the Documentation) pursuant to the terms of Exhibit C.

3.2.1 Updates, Upgrades and Releases. For as long as Broward County is paying for Support and Maintenance Services in accordance with Exhibit B, Provider shall promptly provide to County, with advance notice and at no additional cost, any and all updates (including error corrections, bug fixes, security updates, and patches), upgrades, or new releases to the Software (as well as any firmware included with the Equipment), including all that Provider has made available to other licensees of all or part of the Software licensed hereto. All such updates, upgrades, and new releases shall remain the sole property of Provider and shall be deemed to be included within the scope of the license granted under this Agreement.

3.2.2 Compatibility. For as long as Broward County is paying for Support and Maintenance Services in accordance with Exhibit B, Provider will ensure the continued compatibility of the Software and System with all major releases, updates, or upgrades of any third party software used by County for access or operation of the System with Provider's knowledge and consent, including, but not limited to, Microsoft SQL Server, Microsoft OS, and any other third-party software used by County for access or operation of the System with Provider's knowledge and consent. In the event Provider is not be able to support any such third party software update, upgrade or new release that is not backwards compatible with the Software or System, Provider shall use all reasonable efforts to resolve such issues and to provide optimal functionality of the Software and System in accordance with this Agreement. If Provider is unable to provide continued optimal functionality of the Software and System in accordance with this Agreement due to any such applicable third party software release, update or upgrade, County shall be entitled to terminate the Agreement for convenience.

3.2.3 Software Enhancements or Modifications. If requested by County, Provider shall incorporate certain features and enhancements into the licensed Software, and the source code for those features and enhancements shall be the property of Provider. Any such request shall be formalized into a Statement of Work that shall define in detail the services to be performed, the financial terms, and the proposed project staffing and schedule. Any such Statement of Work shall be incorporated into a Work Authorization, to the extent permitted by Section 3.4 below, or otherwise into a proposed amendment to this Agreement.

3.3 License. Provider grants to County (1) a perpetual, royalty-free, nonexclusive, non-transferable, non-sublicensable license, for an unlimited number of users, to the Software (in object code form only), including to any software embedded in or provided with the Equipment, and (2) a nonexclusive, non-transferable, non-sublicensable right to access and use, for an unlimited number of users, the Subscription Services, in each case, for use solely (a) for County governmental and business purposes, including on- and off-site access and use of the System by authorized third party users, including those persons or entities with which County may contract to operate the System or components thereof; and (b) for County's use of the Software in connection with the Equipment and/or System in the United States. The license does not include any rights with respect to the source code form of the Software.

3.3.1 Authorized Users and Additional Licenses. Unless otherwise stated in Exhibit A (Statement of Work), County and any of its authorized third party users shall have the right to concurrently operate and use the System for County governmental or business purpose. If anything less than unlimited, concurrent use is expressly provided under this Agreement and additional licenses are required, County's Purchasing Director is authorized to execute a Work Authorization (Exhibit E) to purchase additional licenses for the fee specified in Exhibit B.

3.3.2 Additional Uses. County may, if required by reason of an emergency, disaster or operational need, or for testing of recovery resources, temporarily use the Software on recovery resources at no additional cost, including recovery resources that may not be owned by County. County may, at no additional cost, copy the Software for backup and archiving purposes for the purposes of support or maintenance by County or others hired by County to provide such support or maintenance. County may, at no additional cost, utilize a hosted environment, including without limitation through a third party hosting provider, for all otherwise permitted uses of the Software.

3.3.3 Prohibited Uses. Except as otherwise provided for in this Agreement or required under Florida law, County shall not reproduce the Software. County shall not (a) modify, translate, reverse

engineer, disassemble, decompile or otherwise attempt to discover the source code for the Software or any portion thereof, (b) remove any proprietary or confidential notices or labels from or included in the Software, or (c) copy, distribute, publish, license or transmit the Software. County's rights under this license may not be leased, sublicensed or otherwise transferred or made available for use by third parties, in whole or in part, by County without Provider's prior written consent or as expressly permitted in this Section 3.3.

3.4 Change of Scope Procedures. Provider acknowledges that Contract Administrator has no authority to make changes that would increase, decrease, or otherwise modify the scope of services to be provided under this Agreement except as expressly provided herein. To the extent any goods or services under this Agreement, or the quantity thereof, are optional ("Optional Services"), County may select the type, amount, and timing of such goods or services pursuant to a Work Authorization (Exhibit E hereto) executed by Provider and County pursuant to this Section, and provided that no such selection, when combined with those goods or services required under the Agreement, would result in a payment obligation exceeding the applicable maximum amount stated in Section 5.1. Notwithstanding anything to the contrary in the Agreement, Work Authorizations for Optional Services pursuant to this Section shall be executed on behalf of the County as follows: the Contract Administrator may execute any Work Authorization for which the total cost to County, in the aggregate, is less than \$50,000.00; the Purchasing Director may execute any Work Authorization for which the total cost to the County is within the Purchasing Director's delegated authority; any Work Authorizations above the County's Purchasing Director delegated authority shall require Board approval. Subsequent to the full execution of any Work Authorization, the Contract Administrator will issue a Notice to Proceed for those authorized Optional Services. Provider shall not commence work on any Work Authorization until after receipt of the applicable Notice to Proceed.

3.5 Contract Administrator Authority. Unless otherwise expressly stated herein or in the applicable Procurement Code, Code of County Ordinances, or County Code of Administrative Procedure, the Contract Administrator may act on behalf of County to exercise the authority and powers of County under this Agreement.

ARTICLE 4. TERM AND TIME OF PERFORMANCE

4.1 Term. The Agreement shall become effective on the date it is fully executed by the parties (the "Effective Date"). The initial term of the Agreement shall be for a period of three (3) years from the date of Mobile Ticketing Final Acceptance (the "Initial Term").

4.2 Extensions. County shall have the option to renew this Agreement, for some or all services provided hereunder, for seven (7) additional one (1) year terms (each a "Renewal Term"). For example, the County may choose to only renew the Agreement for the purpose of purchasing spare parts in accordance with the procedures set forth in Exhibit B or to acquire support and maintenance services as per Exhibit C. The County may exercise its right of renewal by sending notice thereof to Provider at least thirty (30) days prior to the expiration of the then-current term. If County is renewing only some of the goods or services provided, the notice of renewal shall specify the relevant goods and services that are being renewed. The Purchasing Director is authorized to exercise this renewal option. In the event that unusual or exceptional circumstances, as determined in the sole discretion of the Purchasing Director, render the exercise of an extension not practicable or if no extension is available, and expiration of this Agreement would result in a gap in the provision of services necessary for the ongoing operations of the

County, then this Agreement may be extended on the same terms and conditions by the Purchasing Director for period(s) not to exceed six (6) months in the aggregate.

4.3 Fiscal Year. The continuation of this Agreement beyond the end of any County fiscal year shall be subject to both the appropriation and the availability of funds, in accordance with Chapter 129, Florida Statutes.

4.4 Delivery. Provider shall deliver the Equipment and Documentation to County within the period of time set forth in Exhibit A at the address to be provided by County. Transportation cost and risk, and the cost of delivery, assembly and installation, including any applicable taxes and all actions necessary to integrate the Equipment into County’s existing system, shall be the responsibility of Provider, except to the extent (if any) expressly provided in Exhibit A.

4.5 Timetable. If the System or a Subsystem, as applicable, fails to achieve Final Acceptance within the time set forth in Exhibit A, County shall have the option to terminate the Agreement by written notice from its Contract Administrator, in which event Provider shall, within fifteen (15) days, pick up the Equipment for the applicable System or Subsystem which failed Final Acceptance at Provider's expense and reimburse all sums paid by County under this Agreement for the applicable System or Subsystem that failed Final Acceptance, if any. For purposes of this paragraph, any delays caused by County prior to Final Acceptance shall extend the Final Acceptance deadline by the same number of days as the delay caused by County.

4.6 Time is of the essence for all performance required under this Agreement.

ARTICLE 5. COMPENSATION

5.1 For the duration of the Agreement, County will pay Provider in accordance with Exhibit B up to the following maximum amount(s):

Services/Goods	Term	Not-To-Exceed Amount
Equipment, Software, System and Services (including Hosting, Support and Maintenance Services) per Exhibits A and C	Initial Term	\$ 7,179,084.00
Optional Renewal Terms (Hosting)	Each one-year renewal term	\$15,700.00 (total \$ 109,900.00 for all renewal terms)
Optional renewal terms (Extended Software Maintenance)	Each one-year renewal term	\$122,100.00 (total \$854,700.00 for all renewal terms)
Optional Services (including Optional Professional Services and Optional Hardware)	Duration of the Agreement (inclusive of any renewals)	\$717,908.40

Services/Goods	Term	Not-To-Exceed Amount
Spare Parts	Duration of the Agreement (inclusive of any renewals)	\$1,083,899.58
TOTAL NOT TO EXCEED		\$9,945,491.98

Payment shall be made only for work actually performed and completed pursuant to this Agreement or as otherwise set forth in Exhibit B (Payment Schedule), which amount shall be accepted by Provider as full compensation for all such work. Provider acknowledges that the amounts set forth herein are the maximum amounts payable for the respective terms and constitute a limitation upon County's obligation to compensate Provider for its work under this Agreement. These maximum amounts, however, do not constitute a limitation of any sort upon Provider's obligation to perform all items of work required under this Agreement. Unless otherwise expressly stated in this Agreement, Provider shall not be reimbursed for any expenses it incurs under this Agreement.

5.2 Method of Billing and Payment

5.2.1 Invoices. Provider may submit invoices only for goods provided and services completed in accordance with the Payment Schedule set forth in Exhibit B. Unless otherwise indicated in Exhibit B, an original plus one copy of each invoice must be submitted within fifteen (15) days after the end of the month for which payment is sought, except that the final invoice must be submitted no later than sixty (60) days after all services are completed. Provider shall submit with each invoice a Certification of Payments to Subcontractors and Suppliers on the form provided by County, as may be modified in County's reasonable discretion. If applicable, the certification shall be accompanied by a copy of the notification sent to each subcontractor and supplier listed in item 2 of the certification form, explaining the good cause why payment has not been made. Unless otherwise stated in Exhibit B or the applicable Work Authorization, any Optional Services shall be invoiced in accordance with the existing invoicing schedule for any like goods or services provided under this Agreement, including (if applicable) invoiced pro rata for the initial invoice period.

5.2.2 Payments. County shall pay Provider within thirty (30) days of receipt of Provider's proper invoice, as required by the "Broward County Prompt Payment Ordinance" (Broward County Ordinance No. 89-49). Payment shall be made to Provider at the most recent address designated under the "Notices" provision of this Agreement. To be deemed proper, an invoice must comply with all requirements set forth in this Agreement and must be submitted pursuant to any instructions prescribed by the Contract Administrator. County shall have the right to withhold payment of the invoice based on Provider's failure to comply with any material term, condition, or requirement of this Agreement. The parties hereto agree that any amounts so withheld shall not be subject to payment of any interest by County.

5.2.3 Unless a shorter period is required under applicable law or under the applicable contract, Provider shall pay its CBE subcontractors and suppliers within fifteen (15) days following receipt of payment from County and shall pay all other subcontractors and suppliers within thirty (30) days following receipt of payment from County.

5.3 Travel. With respect to travel costs and travel-related expenses, Provider agrees to adhere to Section 112.061, Florida Statutes, except to the extent, if any, that Exhibit B expressly provides to the contrary. County shall not be liable for any such expenses that have not been approved in advance, in writing, by County.

5.4 Fixed Pricing. Except where otherwise provided in Exhibit B, the prices set forth in Exhibit B shall remain firm and fixed for the term of the Agreement, including any Renewal Terms. However, Provider may offer incentive or volume discounts to County at any time.

ARTICLE 6. WARRANTIES

6.1 Ownership and License Rights. Provider represents and warrants that it is the owner of all right, title, and interest in and to the Equipment and other property being sold to County under this Agreement, that it has the right to sell such Equipment and other property to County, and that such sale is free and clear of any lien or interest of any other person or entity. Provider further represents and warrants that it has the right to grant to County the rights and the licenses granted under this Agreement as to the Software and System. Provider warrants that it has not knowingly granted rights or licenses to any other person or entity that would restrict rights and licenses granted hereunder, except as may be expressly stated herein.

6.2 System Warranty. Provider represents and warrants to County that for a period of one (1) year from the date of Mobile Ticketing Final Acceptance, the Mobile Ticketing Subsystem will perform substantially as described in the Documentation and the Statement of Work (Exhibit A), will be free from defects in workmanship and material, and will have all of the qualities and features and be capable of performing all of the functions described in the Documentation and Statement of Work for such Mobile Ticketing Subsystem. Provider represents and warrants to County that for a period of one (1) year from the date of Easy Card Final Acceptance, the Easy Card Subsystem will perform substantially as described in the Documentation and the Statement of Work (Exhibit A), will be free from defects in workmanship and material, and will have all of the qualities and features and be capable of performing all of the functions described in the Documentation and Statement of Work for such Easy Card Subsystem. This warranty shall not cover any failure of the System resulting from (a) use of the System in other than the manner for which it was intended; (b) modification of the System by County not authorized by Provider; or (c) any improper installation, operation, or maintenance by County or a third party other than an agent of Provider or an independent contractor or other person or entity acting on Provider's behalf.

6.3 Warranty Regarding Viruses. Provider further represents, warrants, and agrees that the System and any software or firmware provided under this Agreement are free from currently-known viruses or malicious software (at the time the System and any subsequent version thereof is provided to County), and that Provider has and will continue, for the full term of this Agreement, to use commercially reasonable security measures to ensure the integrity of such software and firmware from data leaks, hackers, denial of service attacks, and other unauthorized intrusions.

6.4 Intellectual Property Warranty. Provider represents and warrants that at the time of entering into this Agreement, no claims have been asserted against Provider (whether or not any action or proceeding has been brought) that allege that any part of the System or other property provided to County under this Agreement infringes or misappropriates any patent, copyright, mask copyright, or any trade secret or other intellectual or proprietary right of a third party, and that Provider is unaware of any such potential claim. Provider also agrees, represents and warrants that the System (or any portion thereof) and services to be provided pursuant to this Agreement will not infringe or misappropriate any patent, copyright, mask copyright, or any trade secret or other intellectual or proprietary right of a third party.

6.5 Quality of Performance and Materials. Provider represents and warrants that all Services provided under this Agreement will be performed by a person duly qualified and sufficiently experienced

to perform such services and, where required, licensed by all appropriate governmental authorities in the applicable area(s). Provider agrees that all Services under this Agreement shall be performed in a skillful and respectful manner, and that the quality of all such Services shall meet or exceed prevailing industry and professional standards for such services. Provider represents and warrants that all materials, Equipment, and products furnished pursuant to this Agreement shall be of good quality and free from defective or inferior workmanship; any items found not to be in conformance with the foregoing and with the Documentation or applicable specifications (if any) in Exhibit A shall be corrected or replaced, at County's option, by Provider at no additional cost to County. If requested by County's Contract Administrator, Provider shall develop and utilize a quality assurance plan approved by County to ensure the appropriate quality of the work and materials provided under this Agreement.

6.6 Remedy for Breach of Warranty. In the event of written notice from County of a breach of warranty, Provider shall, at no charge to County, promptly correct the warranty breach including, when required, by, at the County's option, (a) correcting, replacing, or updating the Software, or (b) correcting or replacing the affected Equipment, or (c) providing to County other commercially reasonable measures that correct the breach. In addition, upon notice from County of any warranty breach or other error or defect in the System, Provider will immediately provide to County any known reasonable methods of operating the System in a manner that eliminates the adverse effects of the error or defect. If Provider is unable to correct a material breach of this Article within a reasonable period of time not to exceed ten (10) business days, County shall be entitled to cancel the Agreement by providing written notice from its Contract Administration, in which event Provider shall, within (15) days reimburse to County the depreciated value of the Equipment (so long as such amount does not exceed the amount paid by County for such Equipment) as well as any prepaid, unused Services associated with the Equipment. Provider shall arrange for the return of the Equipment at Provider's expense, and neither party shall have any further obligation under the Agreement except as to any provision that expressly survives the Agreement's termination or expiration. In the event of replacement of any of the Software or Equipment, the Software or Equipment as replaced will be warranted as provided above from the date of installation. The remedies in this Section are in addition to any other rights and remedies County may have under this Agreement or applicable law.

6.7 EXCLUSIVE WARRANTY. THE FOREGOING WARRANTIES ARE IN LIEU OF, AND PROVIDER EXPRESSLY DISCLAIMS, ALL OTHER WARRANTIES, EXPRESS OR IMPLIED IN FACT OR BY LAW, INCLUDING WITHOUT LIMITATION ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE. THE FOREGOING WARRANTIES STATE PROVIDER'S ENTIRE AND EXCLUSIVE LIABILITY FOR WARRANTY MATTERS.

ARTICLE 7. DELIVERY, TESTING AND ACCEPTANCE

7.1 Software. Unless otherwise stated in Exhibit A, Provider shall, within seven (7) days after the installation of the Equipment, make the applicable Software available to County and deliver to County a master copy of the Software licensed hereunder in object code form, suitable for reproduction in accordance with this Agreement, in electronic files unless otherwise requested by County. All County license keys, usernames, and passwords shall be authenticated by Provider and perform according to Exhibit A (Statement of Work).

7.2 Documentation. Provider shall deliver copies of the Documentation to County concurrently with delivery of the applicable Equipment and Software, and thereafter shall promptly provide any updated Documentation as it becomes available during the term of this Agreement. Provider represents and

warrants that the Documentation is sufficiently comprehensive and of sufficient quality to enable a competent user to operate the applicable portions of the System efficiently and in accordance with Exhibit A. County has the right to copy and modify the Documentation as it deems necessary for its own internal use.

7.3 Final Acceptance Testing. For all Software and associated Services under this Agreement, there shall be a testing period during which County, with the assistance of its Enterprise Technology Services (“ETS”) to the extent applicable under Broward County Administrative Code Section 22.148, shall determine whether the Software and System: (i) properly functions on the Equipment and with all applicable Software or other operating software; (ii) provides the capabilities as stated in this Agreement and in the Documentation; and (iii) to the extent stated, meets the Acceptance Criteria set forth in Exhibit A (the criteria referenced in (i), (ii), and (iii) are collectively referred to as the criteria for “Final Acceptance”). In the event of a conflict between the Acceptance Criteria and the Documentation, the Acceptance Criteria shall prevail. To the extent set forth in Exhibit A or otherwise approved by the Contract Administrator, final acceptance testing may be conducted in phases or on Subsystems. The terms of this Section 7.3 (and subsections) are subject to the Acceptance Criteria and other acceptance terms as set forth in Exhibit A.

7.3.1 The testing period shall commence on the first business day after Provider informs County in writing that it has completed the Services required to be performed prior to testing and that the System is ready for testing, and shall continue for a period of up to thirty (30) days, unless otherwise agreed to in writing by County or specified in this Agreement.

7.3.2 During the testing period, County may notify Provider in writing of any error or defect in the System so that Provider may make any needed modifications or repairs. If Provider so elects in writing, testing will cease until Provider resubmits for Final Acceptance testing, at which time the testing period shall be reset to that of a first submission for testing.

7.3.3 County shall notify Provider in writing of its Final Acceptance or rejection of the System, or any part thereof, within fifteen (15) days after the end of the testing period, as same may be extended or reset. If County rejects the System, or any part thereof, County shall provide notice identifying the criteria for Final Acceptance that the System failed to meet. Following such notice, Provider shall have thirty (30) days, unless otherwise agreed to by County, to (a) modify, repair, or replace the System or any portion thereof, or (b) otherwise respond to County's notice. If Provider modifies, repairs, or replaces the System or portion thereof, the testing period shall re-commence consistent with the procedures set forth above in this Section 7.3.

7.3.4 In the event Provider fails to remedy the reason(s) for County's rejection of the System (or Subsystem), or any part thereof, within ninety (90) days after County's initial notice of rejection, County may elect, in writing, to either accept the System (or Subsystem) as it then exists or to reject the System (or Subsystem) and terminate the Agreement or applicable Work Authorization. If County elects to reject the System (or Subsystem) and terminate the Agreement or applicable Work Authorization, all sums paid by County under the Agreement or applicable Work Authorization for the rejected System or Subsystem shall be reimbursed to County by Provider within 15 days after such election is made. If County elects to accept the System as it then exists (partial acceptance), Provider shall continue to use its best efforts to remedy the items identified in the applicable notice of rejection. If, despite such continuing best efforts, Provider fails to remedy the issue(s) identified by County within a reasonable time as determined by County, then County shall be entitled to deduct from future sums due under the

Agreement the value of the rejected portion of the System as mutually determined by the parties. If the parties cannot agree upon such value, County shall have the right to reject the System and terminate the Agreement or applicable Work Authorization on the terms stated above in this paragraph.

ARTICLE 8. PROTECTION OF SOFTWARE AND PROPRIETARY RIGHTS

8.1 County Proprietary Rights. Provider acknowledges and agrees that County retains all rights, title and interest in and to all materials, data, documentation and copies thereof furnished by County to Provider hereunder, including all copyright and other proprietary rights therein, which Provider as well as its employees, agents, subconsultants, and suppliers may use only in connection with the performance of Services or Support and Maintenance Services under this Agreement. All rights, title and interest in and to certain ideas, designs and methods, specifications, and other documentation related thereto developed by Provider and its subconsultants specifically for County (collectively, "Developed Works") shall be and remain the property of Provider. Accordingly, neither County nor its employees, agents, subconsultants or suppliers shall have any proprietary interest in such Developed Works.

8.2 Ownership. County acknowledges that all copies of the Software (in any form) provided by Provider are the sole property of Provider. County shall not have any right, title, or interest to any such Software or copies thereof except as expressly provided in this Agreement, and shall take all reasonable steps to secure and protect all Software consistent with maintenance of Provider's proprietary rights therein.

ARTICLE 9. CONFIDENTIAL INFORMATION, SECURITY AND ACCESS

9.1 Public Records Law. As a political subdivision of the State of Florida, County is subject to Florida's Public Records Law, Chapter 119 of the Florida Statutes. Notwithstanding anything else in this Agreement, any action taken by County in compliance with, or in a good faith attempt to comply with, the requirements of Chapter 119 shall not constitute a breach of this Agreement.

9.2 Provider Confidential Information. Provider represents that the Software contains proprietary products and trade secrets of Provider. Any other materials of Provider or third parties that qualify as trade secrets under applicable Florida law must be conspicuously designated as such. Provider's Software and properly designated trade secret materials constitute "Provider Confidential Information." To the full extent permissible under applicable law, County agrees to treat Provider Confidential Information as confidential in accordance with this Article unless otherwise ordered by a court of competent jurisdiction.

9.3 County Confidential Information.

9.3.1 All materials, data, transactions of all forms, financial information, documentation, inventions, designs, and methods that Provider obtains from County in connection with this Agreement, or in which County holds proprietary rights, constitute "County Confidential Information."

9.3.2 All County-provided employee information, financial information, and personally identifiable information for individuals or entities interacting with County (including, without limitation, social security numbers, birth dates, banking and financial information, and other information deemed exempt or confidential under state or federal law) also constitute County Confidential Information.

9.3.3 County Confidential Information may not, without the prior written consent of County, or as otherwise required by law, be used by Provider or its employees, agents, subconsultants or suppliers for any purpose other than for the benefit of County pursuant to this Agreement. Neither Provider nor its employees, agents, subconsultants or suppliers may sell, transfer, publish, disclose, display, license or otherwise make available to any other person or entity any County Confidential Information without the prior written consent of County.

9.3.4 Provider expressly agrees to be bound by and to defend, indemnify and hold harmless County and its officers and employees from the breach of any federal, state or local law by Provider or its employees, agents, subconsultants or suppliers regarding the unlawful use or disclosure of County Confidential Information.

9.3.5 Upon expiration or termination of this Agreement, or as otherwise demanded by County, Provider shall immediately turn over to County all County Confidential Information, in any form, tangible or intangible, possessed by Provider or its employees, agents, subconsultants, or suppliers.

9.4 Maintenance of Confidential Information. Each party shall advise its employees, agents, subconsultants, and suppliers who receive or otherwise have access to the other party's Confidential Information of their obligation to keep such information confidential, and shall promptly advise the other party in writing if it learns of any unauthorized use or disclosure of the other party's Confidential Information. In addition, the parties agree to cooperate fully and provide reasonable assistance to ensure the confidentiality of the other party's Confidential Information.

9.5 Security and Access. Provider shall comply with the Service Level Agreement (“SLA”) attached hereto as Exhibit F. If Provider has access to or may be required to access the County network in connection with any of the work or services provided under this Agreement, Provider will cooperate with County and provide any and all information that County may request in order to determine appropriate security and network access restrictions and verify Provider's compliance with County security standards. Any access by Provider to any aspect of the County's network must comply at all times with all applicable County access and security standards, as well as any other or additional restrictions or standards for which County provides written notice to Provider. If at any point in time County, in the sole discretion of its Chief Information Officer, determines that Provider's access to any aspect of the County's network presents an unacceptable security risk, County may immediately suspend or terminate Provider's access and, if the risk is not promptly resolved to the reasonable satisfaction of the County's Chief Information Officer, may terminate this Agreement or any applicable Work Authorization upon ten (10) business days' notice (including, without limitation, without restoring any access to the County network to Provider).

9.6 Data and Privacy. Provider shall comply with all applicable data and privacy laws and regulations, including without limitation the Florida Information Protection Act of 2014, Florida Statutes Section 501.171. Provider may not sell, market, publicize, distribute, or otherwise make available to any third party any personal identification information (as defined by Florida Statutes Section 817.568 or Section 817.5685) that Provider may receive or otherwise have access to in connection with this Agreement, unless expressly authorized in advance by County. If and to the extent requested by County, Provider shall ensure that all hard drives or other storage devices and media that contained County data have been wiped in accordance with the then-current best industry practices, including without limitation DOD 5220.22-M, and that an appropriate data wipe certification is provided to the satisfaction of the Contract Administrator.

9.7 Injunctive Relief. The parties represent and agree that neither damages nor any other legal remedy is adequate to remedy any breach of this article, and that the injured party shall therefore be entitled to injunctive relief to restrain or remedy any breach or threatened breach.

9.8 Survival. The obligations under this Article 9 shall survive the termination of this Agreement or of any license granted under this Agreement.

ARTICLE 10. INDEMNIFICATION AND LIMITATION OF LIABILITY

10.1 Indemnification. Provider shall be fully liable for the actions of its current and former officers, employees, subcontractors and other agents under this Agreement. Provider shall at all times hereafter indemnify, hold harmless and defend County and all of County's current and former officers, employees and other agents (collectively, "Indemnified Party") from and against any and all lawsuits, causes of action, demands, claims, losses, fines, penalties, damages, judgments, liabilities and expenditures of any kind, including attorneys' fees, litigation expenses, and court costs (collectively, "Claim"), raised or asserted by any person or entity that is not a party to this Agreement, to the extent such Claim is caused or alleged to be caused, in whole or in part, by any intentional, reckless, or negligent act or omission of Provider or any current or former officer, employee, subcontractor or other agent of Provider, arising from any obligation or performance under this Agreement. In the event any Claim is brought against an Indemnified Party, Provider shall, upon written notice from County, defend each Indemnified Party against each such Claim through counsel satisfactory to County or, at County's option, pay for an attorney selected by the County Attorney that is satisfactory to Provider (in Provider's reasonable discretion) to defend the Indemnified Party. The provisions and obligations of this Section shall survive the expiration or earlier termination of this Agreement. To the extent considered necessary by the County Attorney, in his or her reasonable discretion, any sums due Provider under this Agreement may be retained by County until all Claims subject to this indemnification obligation have been resolved. Any sums so withheld shall not be subject to the payment of interest by County.

10.2 Limitation of Liability. Neither Provider nor County shall be liable to the other party for any damages under this Agreement that exceed the largest of the following amounts: (a) \$100,000; (b) twice the total amount owed by County to Provider per Exhibit B of this Agreement; or (c) the amount of insurance Provider is required to provide under Article 11. These limitations of liability shall not apply to (i) any Claim resulting from Provider's actual or alleged disclosure of County Confidential Information or resulting from an actual or alleged data breach in violation of applicable law, (ii) any Claim resulting from an actual or alleged infringement of any interest in any intellectual property, or (iii) any indemnification obligation under this Agreement.

10.2.1 Neither party shall be liable for the other party's special, indirect, punitive, or consequential damages (including damages resulting from lost data or records other than costs incurred in the recovery thereof), even if the party has been advised that such damages are possible, or for the other party's lost profits, lost revenue, or lost institutional operating savings.

10.3 Infringement Remedy. If any Equipment, Software, or portion of the System is finally adjudged to infringe, or in Provider's opinion is likely to become the subject of such a Claim, Provider shall, at Provider's option: (i) procure for County the right to continue using the applicable portion of the System; (ii) modify or replace the System (in part or in whole) to make it noninfringing; or (iii) remove the applicable portion of the System, provided the System functions in accordance with Exhibit A to County's reasonable satisfaction without the infringing portion, and refund to County the depreciated purchase price. Provider shall have no liability regarding any infringement claim caused by any County modification of the System not authorized in writing by Provider, or Provider's compliance with the specifications or design of County. EXCEPT FOR PROVIDER'S INDEMNIFICATION OBLIGATIONS SET FORTH HEREIN, THE FOREGOING CONSTITUTES THE ENTIRE LIABILITY OF PROVIDER AND THE SOLE AND EXCLUSIVE REMEDY OF COUNTY FOR PATENT OR TRADEMARK INFRINGEMENT RELATED TO THE EQUIPMENT.

10.4 Third Party Pass Thru Rights. Provider shall extend to County all rights and benefits Provider has from any third party as to the Equipment or Software, including any and all indemnification and hold harmless rights, to the extent permitted under any applicable agreement with the third party equipment or software supplier or otherwise available to Provider. Provider shall at all times use all reasonable efforts to cooperate with County in the event of an infringement claim involving the System.

ARTICLE 11. INSURANCE

11.1 Provider shall maintain at its sole expense, on a primary basis, at all times during the term of this Agreement (unless a different time period is stated herein), at least the minimum insurance coverage designated in Exhibit D in accordance with the terms and conditions stated in this Article.

11.2 Such policies shall be issued by U.S. Treasury approved companies authorized and licensed to transact business in the State of Florida, with a minimum AM Best financial rating of A-, unless otherwise approved in writing by County. If any deductible amounts are permitted in Exhibit D, Provider shall be responsible for the payment of all such deductible amounts.

11.3 Provider agrees to include County as an additional insured under Provider's commercial general liability and automobile insurance policy. General liability shall be on a primary and non-contributory basis as respects the additional insured. General liability, automobile, and workers compensation policies will include a waiver of subrogation in favor of Broward County. The listed certificate holder on all required policies shall be "Broward County."

11.4 Coverage shall be provided on forms no more restrictive than the latest edition of the applicable forms filed by the Insurance Services Office.

11.5 Provider shall notify County in writing within thirty (30) calendar days after Provider learns of any claim against Provider's professional liability insurance policy in which damages claimed plus defense costs incurred to date exceed \$250,000.

11.6 Within fifteen (15) days of execution of this Agreement, Provider shall provide County with proof of insurance in the form of Certificate(s) of Insurance and applicable endorsements. Failure to timely provide acceptable proof of insurance, as determined by County, shall entitle County to terminate this Agreement without any liability to Provider.

11.7 For all insurance policies required under this Article, Provider must provide County with at least thirty (30) calendar days' written notice of expiration, cancellation, or restriction of coverage. Provider shall provide certified copies of any policy to County upon County's request.

11.8 If Provider subcontracts any work under this Agreement, Provider shall require that each subcontractor names County as an additional insured under the subcontractor's general liability insurance policy and any excess liability insurance policy.

ARTICLE 12. EEO and CBE COMPLIANCE

12.1 Nondiscrimination. Provider may not discriminate on the basis of race, color, sex, religion, national origin, disability, age, marital status, political affiliation, sexual orientation, pregnancy, or gender identity and expression in the performance of this Agreement, except that any project assisted by U.S. Department of Transportation funds shall comply with the nondiscrimination requirements in 49 C.F.R. Parts 23 and 26. Provider shall include substantially similar language in its contracts with any and all permitted subcontractors providing goods or services under this Agreement.

12.2 Failure by Provider to carry out any of the requirements of this article shall constitute a material breach of this Agreement, which shall permit County to terminate this Agreement or to exercise any other remedy provided under this Agreement, Broward County Code of Ordinances, Broward County Administrative Code, or under other applicable law, all such remedies being cumulative.

ARTICLE 13. TERMINATION

13.1 This Agreement may be terminated for cause based on any breach that is not cured within thirty (30) calendar days after written notice from the aggrieved party identifying the breach, unless stated otherwise in this Agreement. This Agreement may also be terminated for convenience by the Board upon providing written notice to Provider of the termination date, which shall be not less than thirty (30) days after the date such written notice is provided. If County erroneously, improperly, or unjustifiably terminates for cause, such termination shall, to the full extent permissible under applicable law, be deemed a termination for convenience, which shall be effective thirty (30) days after such notice of termination for cause is provided.

13.2 County may terminate this Agreement if Provider is found to have submitted a false certification pursuant to Section 287.135, Florida Statutes, if Provider has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or if Provider has failed to promptly implement corrective action for audit deficiencies upon reasonable notice by County. Notwithstanding anything contained in this Agreement to the contrary, the rights and obligations of the parties under this paragraph shall be governed by Section 287.135, Florida Statutes, to the full extent applicable.

13.3 Provider represents that neither it nor any of its affiliates has been placed on the discriminatory vendor list, as defined by Section 287.134, Florida Statutes. County may terminate this Agreement effective immediately, without any further obligation to Provider, upon learning that such representation is false or if Provider or any of its affiliates is placed on the discriminatory vendor list.

13.4 Additionally, and notwithstanding anything to the contrary in this Agreement, County may terminate this Agreement without any further liability to Provider upon the decertification of Provider as

a Certified Business Entity ("CBE") by County's Office of Economic and Small Business Development ("OESBD"), if Provider's status as a CBE was a factor in the award of the Agreement and such status was misrepresented by Provider. However, such termination shall not be effective until expiration of any timely-filed review or appeal of the decertification decision.

13.5 Notice of termination shall be provided in accordance with the "Notices" section of this Agreement.

13.6 In the event this Agreement is terminated for convenience, Provider shall be paid for any goods and services properly provided through the termination date specified in the written notice of termination. Provider acknowledges that it has received good, valuable and sufficient consideration from County, the receipt and adequacy of which are hereby acknowledged by Provider, for County's right to terminate this Agreement for convenience, and Provider hereby waives, to the full extent permissible under applicable law, any and all rights to challenge the adequacy of such consideration or the validity of County's right to terminate for convenience.

ARTICLE 14. MISCELLANEOUS

14.1 Rights in Documents and Work. Provider retains title to all intellectual property, patents, trademarks, know-how, copyrights, Software, engineering work product, designs, models, production prints, drawings, and technical data ("Provider Intellectual Property") that relates directly to the System and Services sold to County. Unless otherwise agreed to by Provider in writing, all such Provider Intellectual Property disclosed or delivered by Provider to County are to be deemed proprietary to Provider and shall be used by County solely for inspecting, installing, operating, marketing, and maintaining the System or Services sold to County and not used by County for any other purpose. Any and all reports, photographs, surveys, and other data and documents provided or created in connection with this Agreement, exclusive of Provider's Intellectual Property, shall be and remain the property of County and, if a copyright in any such reports, photographs, surveys, data or documents is owned by Provider, Provider hereby grants to County a nonexclusive perpetual license to use such copyrighted item(s) to prepare derivative works and to make and distribute copies for County's internal use. In the event of termination or expiration of this Agreement, any reports, photographs, surveys, and other data and documents prepared by Provider, whether finished or unfinished, exclusive of Provider's Intellectual Property, shall become the property of County and shall be delivered by Provider to the Contract Administrator within seven (7) calendar days of termination or expiration of this Agreement by either party.

14.2 Audit Right and Retention of Records. County shall have the right to audit the books, records, and accounts of Provider and its subcontractors that are related to this Agreement. Provider and its subcontractors shall keep such books, records, and accounts as may be necessary in order to record complete and correct entries related to the Agreement and performance thereunder. All books, records, and accounts of Provider and its subcontractors shall be kept in written form, or in a form capable of conversion into written form within a reasonable time, and upon request to do so, Provider or its subcontractor, as applicable, shall make same available at no cost to County in written form.

Provider and its subcontractors shall preserve and make available, at reasonable times within Broward County for examination and audit by County, all financial records, supporting documents, statistical records, and any other documents pertinent to this Agreement for a minimum period of three (3) years after expiration or termination of this Agreement or until resolution of any audit findings, whichever is

longer. County audits and inspections pursuant to this Section may be performed by any County representative (including any outside representative engaged by County). County reserves the right to conduct such audit or review at Provider's place of business, if deemed appropriate by County, with seventy-two (72) hours' advance notice.

Any incomplete or incorrect entry in such books, records, and accounts shall be a basis for County's disallowance and recovery of any payment upon such entry. If an audit or inspection in accordance with this Section discloses overpricing or overcharges to County of any nature by Provider in excess of five percent (5%) of the total contract billings reviewed by County, the reasonable actual cost of the County's audit shall be reimbursed to the County by Provider in addition to making adjustments for the overcharges. Any adjustments and/or payments due as a result of such audit or inspection shall be made within thirty (30) days from presentation of County's findings to Provider.

Provider shall ensure that the requirements of this Section are included in all agreements with its subcontractor(s).

14.3 Public Records. To the extent Provider is acting on behalf of County as stated in Section 119.0701, Florida Statutes, Provider shall:

- a. Keep and maintain public records required by County to perform the services under this Agreement;
- b. Upon request from County, provide County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time and at a cost that does not exceed that provided in Chapter 119, Florida Statutes, or as otherwise provided by law;
- c. Ensure that public records that are exempt or confidential and exempt from public record requirements are not disclosed except as authorized by law for the duration of this Agreement and following completion of this Agreement if the records are not transferred to County; and
- d. Upon completion or termination of this Agreement, transfer to County, at no cost, all public records in possession of Provider or keep and maintain public records required by County to perform the services. If Provider transfers the records to County, Provider shall destroy any duplicate public records that are exempt or confidential and exempt. If Provider keeps and maintains public records, Provider shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to County upon request in a format that is compatible with the information technology systems of County.

The failure of Provider to comply with the provisions of this Section shall constitute a material breach of this Agreement entitling County to exercise any remedy provided in this Agreement or under applicable law.

A request for public records regarding this Agreement must be made directly to County, who will be responsible for responding to any such public records requests. Provider will provide any requested records to County to enable County to respond to the public records request.

IF PROVIDER HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO PROVIDER'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS (954) 357-8323; jafernandez@broward.org; 1 N. UNIVERSITY DRIVE, PLANTATION, FL 33324.

14.4 Truth-In-Negotiation Representation. Provider's compensation under this Agreement is based upon representations supplied to County by Provider, and Provider certifies that the information supplied is accurate, complete, and current at the time of contracting. County shall be entitled to recover any damages it incurs to the extent such representation is untrue.

14.5 Public Entity Crime Act. Provider represents that it is familiar with the requirements and prohibitions under the Public Entity Crime Act, Section 287.133, Florida Statutes, and represents that its entry into this Agreement will not violate that Act. In addition to the foregoing, Provider further represents that there has been no determination that it committed a "public entity crime" as defined by Section 287.133, Florida Statutes, and that it has not been formally charged with committing an act defined as a "public entity crime" regardless of the amount of money involved or whether Provider has been placed on the convicted vendor list. Notwithstanding any provision in this Agreement to the contrary, if any representation stated in this paragraph is false, County shall have the right to immediately terminate this Agreement and recover all sums paid to Provider under this Agreement.

14.6 Independent Contractor. Provider is an independent contractor under this Agreement. Provider shall not have the right to bind County to any obligation not expressly undertaken by County under this Agreement.

14.7 Third Party Beneficiaries. The parties acknowledge that there are no third party beneficiaries under this Agreement.

14.8 Notices. In order for a notice to a party to be effective under this Agreement, notice must be sent via U.S. first-class mail with a contemporaneous copy via e-mail to the addresses listed below and shall be effective upon mailing. The addresses for notice shall remain as set forth herein unless and until changed by providing notice of such change.

NOTICE TO COUNTY:

Broward County Transportation Department
Attn: Chris Walton
1 N. University Drive, Suite 3100A
Plantation, FL 33324
Email address: cwalton@broward.org

NOTICE TO PROVIDER:

Genfare
Attn: Kim Green
800 Arthur Avenue
Elk Grove Village, IL 60007
Email address: kim.green@spx.com

14.9 Assignment. Except for subcontracting approved by County at the time of its execution of this Agreement or any written amendment hereto, neither this Agreement nor any right or interest herein may be assigned, transferred, subcontracted, or encumbered by Provider without the prior written consent of County. If Provider violates this provision, County shall have the right to immediately terminate this Agreement.

14.10 Conflicts. Provider agrees that neither it nor its employees will have or hold any continuing or frequently recurring employment or contractual relationship that is substantially antagonistic or incompatible with Provider's loyal and conscientious exercise of the judgment and care required to perform under this Agreement. Provider further agrees that none of its officers or employees shall, during the term of this Agreement, serve as an expert witness against County in any legal or administrative proceeding in which he, she, or Provider is not a party, unless compelled by court process. Further, such persons shall not give sworn testimony or issue a report or writing, as an expression of his or her expert opinion, which is adverse or prejudicial to the interests of County in connection with any such pending or threatened legal or administrative proceeding unless compelled by court process. The limitations of this Section shall not preclude Provider or any person from in any way representing themselves, including giving expert testimony in support thereof, in any administrative or legal proceeding. Provider agrees that each of its contracts with subcontractors performing under this Agreement shall contain substantively identical language to ensure that each subcontractor and its officers and employees meet the obligations contained in this paragraph.

14.11 Waiver of Breach. The failure of either party to enforce any provision of this Agreement shall not be deemed a waiver of such provision or modification of this Agreement. A waiver of any breach under this Agreement shall not be deemed a waiver of any subsequent breach.

14.12 Compliance with Laws. Provider shall comply with all applicable federal, state, and local laws, codes, ordinances, rules, and regulations in performing under this Agreement.

14.13 Severability. In the event any part of this Agreement is found to be unenforceable by any court of competent jurisdiction, that part shall be deemed severed from this Agreement and the balance of this Agreement shall remain in full force and effect.

14.14 Joint Preparation. This Agreement has been jointly prepared by the parties hereto, and shall not be construed more strictly against either party.

14.15 Headings and Interpretation. The headings contained in this Agreement are for reference purposes only and shall not in any way affect the meaning or interpretation of this Agreement. All personal pronouns used in this Agreement shall include the other gender, and the singular shall include the plural, and vice versa, unless the context otherwise requires. Terms such as "herein," "hereof," "hereunder," and "hereinafter," refer to this Agreement as a whole and not to any particular sentence, paragraph, or section where they appear, unless the context otherwise requires.

14.16 Governing Law, Venue and Waiver of Jury Trial. This Agreement shall be interpreted and construed in accordance with, and governed by, the laws of the state of Florida. The parties agree that the exclusive venue for any lawsuit arising from, related to, or in connection with this Agreement shall be in the state courts of the Seventeenth Judicial Circuit in and for Broward County, Florida. If any claim arising from, related to, or in connection with this Agreement must be litigated in federal court, the parties agree that the exclusive venue for any such lawsuit shall be in the United States District Court or United

States Bankruptcy Court for the Southern District of Florida. **BY ENTERING INTO THIS AGREEMENT, PROVIDER AND COUNTY HEREBY EXPRESSLY WAIVE ANY AND ALL RIGHTS EITHER PARTY MAY HAVE TO A TRIAL BY JURY OF ANY CAUSE OF ACTION OR CLAIM ARISING FROM, RELATED TO, OR IN CONNECTION WITH THIS AGREEMENT.**

14.17 Amendments. No modification or amendment to this Agreement shall be effective unless it is in writing and executed by authorized representatives of each party. Without limiting the foregoing, the terms of this Agreement shall prevail over and against any additional or contrary terms and conditions in any format or medium whatsoever including, without limitation, shrinkwrap, click-through, or terms and conditions associated with any upgrade, update, release, patch, or other modification of the System or Software, unless expressly agreed to in writing by an amendment hereto executed by authorized representatives of each party.

14.18 Prior Agreements. This Agreement represents the final and complete understanding of the parties regarding the subject matter hereof and supersedes all prior and contemporaneous negotiations and discussions regarding that subject matter. There is no commitment, agreement, or understanding concerning the subject matter of this Agreement that is not contained in this written document.

14.19 Payable Interest

14.19.1 Payment of Interest. County shall not be liable to pay any interest to Provider for any reason, whether as prejudgment interest or for any other purpose, and in furtherance thereof Provider waives, rejects, disclaims and surrenders any and all entitlement it has or may have to receive interest in connection with a dispute or claim arising from, related to, or in connection with this Agreement. This paragraph shall not apply to any claim interest, including for post-judgment interest, if such application would be contrary to applicable law.

14.19.2 Rate of Interest. If, for whatever reason, the preceding subsection is determined to be invalid or unenforceable by a court of competent jurisdiction, the annual rate of interest payable by County under this Agreement, whether as prejudgment interest or for any other purpose, shall be, to the full extent permissible under applicable law, 0.25% (one quarter of one percent) simple interest (uncompounded).

14.20 Incorporation by Reference. Any and all Recital clauses stated above are true and correct and are incorporated herein by reference.

14.21 Representation of Authority. Each individual executing this Agreement on behalf of a party hereto represents and warrants that he or she is, on the date of execution, duly authorized by all necessary and appropriate action to execute this Agreement on behalf of such party and does so with full legal authority. Provider represents that it is an entity authorized to transact business in the State of Florida.

14.22 Drug-Free Workplace. It is a requirement of County that it enter into contracts only with firms that certify the establishment of a drug-free workplace in accordance with Chapter 21.31(a)(2) of the Broward County Procurement Code. Execution of this Agreement by Provider shall serve as Provider's required certification that it has or will establish a drug-free workplace in accordance with Section 287.087, Florida Statutes, and Chapter 21.31(a)(2) of the Broward County Procurement Code, and that it will maintain such drug-free workplace for the full term of this Agreement.

14.23 Contingency Fee. Provider represents that it has not paid or agreed to pay any person or entity, other than a bona fide employee working solely for Provider, any fee, commission, percentage, gift, or other consideration contingent upon or resulting from the award or making of this Agreement. If County learns that this representation is false, County shall have the right to terminate this Agreement without any further liability to Provider. Alternatively, if such representation is false, County, at its sole discretion, may deduct from the compensation due Provider under this Agreement the full amount of such fee, commission, percentage, gift, or consideration.

14.24 Living Wage Requirement. If Provider is a "covered employer" within the meaning of the Broward County Living Wage Ordinance, Broward County Code sections 26-100 – 26-105, Provider agrees to and shall pay to all of its employees providing "covered services," as defined therein, a living wage as required by such ordinance, and Provider shall fully comply with the requirements of such ordinance. Provider shall be responsible for and shall ensure that all of its subcontractors that qualify as "covered employers" fully comply with the requirements of such ordinance.

14.25 Force Majeure. If the performance of this Agreement, or any obligation hereunder, is prevented by reason of hurricane, earthquake, or other casualty caused by nature, or by labor strike, war, or by a law, order, proclamation, regulation, or ordinance of any governmental agency, the party so affected, upon giving prompt notice to the other party, shall be excused from such performance to the extent of such prevention, provided that the party so affected shall first have taken reasonable steps to avoid and remove such cause of nonperformance and shall continue to take reasonable steps to avoid and remove such cause, and shall promptly notify the other party in writing and resume performance hereunder whenever and to the full extent such causes are removed. However, if such nonperformance exceeds sixty (60) days, the party that is not prevented from performance by the force majeure event shall have the right to immediately terminate this Agreement upon written notice to the party so affected. This Section shall not supersede or prevent the exercise of any right the parties may otherwise have to terminate this Agreement.

14.26 County Logo. Provider shall not use County's name, logo, or otherwise refer to this Agreement in any marketing or publicity materials without the prior written consent of County.

14.27 Federally Funded Contracts. Provider certifies and represents that it will comply with the Federally Funded Contract Requirements attached hereto and incorporated herein as Exhibits G and H.

14.28 Counterparts. This Agreement may be executed in multiple originals, and may be executed in counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute one and the same agreement.

(The remainder of this page is intentionally left blank.)

IN WITNESS WHEREOF, the Parties hereto have made and executed this Agreement: BROWARD COUNTY through its BOARD OF COUNTY COMMISSIONERS, signing by and through its Mayor or Vice-Mayor, authorized to execute same by Board action on the ____ day of _____, 2018, and GENFARE, a division of SPX Corporation, signing by and through its _____, duly authorized to execute same.

COUNTY

ATTEST:

BROWARD COUNTY, by and through
its Board of County Commissioners

Broward County Administrator, as
Ex-officio Clerk of the Broward County
Board of County Commissioners

By: _____

____ day of _____, 2018

Insurance requirements approved by Broward
County Risk Management Division:

Approved as to form by:

By: Tim Erndex
Name: Tim Erndex
Title: Property Specialist

Andrew J. Meyers
Broward County Attorney
Governmental Center, Suite 423
115 South Andrews Avenue
Fort Lauderdale, Florida 33301
Telephone: (954) 357-7600
Telecopier: (954) 357-7641

By: Rocio Blanco Garcia 1/3/2018
Rocio Blanco Garcia (Date)
Assistant County Attorney

By: Rene D. Harrod 1/5/18
Rene D. Harrod (Date)
Deputy County Attorney

RDH/RBG
2017-12-22 Genfare System Services Agreement
12/22/17
#209550

PROVIDER

WITNESSES:

GENFARE, a division of SPX Corporation

[Signature]
Signature

By: [Signature]
Authorized Signor

Terese Gillum
Print Name of Witness above

Kim R Green, Executive Director
Print Name and Title

Signature

27th day of December, 2017

Andrew Cran
Print Name of Witness above

ATTEST:

[Signature]
Corporate Secretary or other person
authorized to attest
Ben Andrews, CFO

(CORPORATE SEAL OR NOTARY)

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Exhibit A – Statement of Work

Provider and County agree that Provider shall provide the following work under this Agreement:

1 Project Request

This is a project by Broward County Transit (“BCT” or “County”) to develop, implement, support, operate and maintain a comprehensive and secured end-to-end fare collection system (“System”) with Mobile Ticketing and the capability of accepting the EASY Card. The System will improve the travel experience for riders (“Customers”) that use the BCT system as well as those transferring to and from all four transit systems in the Southeast Florida Region: BCT, Miami-Dade Transit (“MDT”), Palm Tran, and Tri-Rail.

The goals of this project are twofold. The first goal is to add Mobile Ticketing as a fare payment option, with all necessary equipment and back office support, for BCT. The second goal is to add the capability of accepting the EASY Card as a fare payment option. EASY Card is a smart card currently accepted for fare payment when riding MDT and Tri-Rail.

Provider will meet the following BCT objectives for Mobile Ticketing:

- Institute a robust and flexible platform to support single and multi-agency fare transactions (ticket types, prices, validity and expiration).
- Support existing pass products and single trip payments.
- Support future pass products and programs.
- Implement a System which supports mobile tickets for Proof-of-Payment (“POP”)
- Allows integration of credit card payments with the present Point of Sale (“POS”) system at BCT locations.
- Ensure convenience and ease of use for all Customers.
- Make the boarding process easier for bus operators and Customers.
- Reduce the use of cash-for-fare payment onboard buses to minimize dwell time and reduce operating costs.
- Reduce onboard fare processing time to improve on-time performance.
- Address the issue of fare validation and verification of single and multi-pass tickets in an effective approach that does not compromise the rider’s experience.
- Provide integrated reporting for fares collected through the existing GFI farebox and the new Mobile Ticketing System.
- Use centralized server/account-based fare payment processing. In an account-based system, the validator only identifies and authenticates the card/ticket. Fare calculation and payment are completely carried out in the back office.
- Maintain accountability for all fare transactions and revenue management data.
- Allow retrieval of accurate and timely ridership and revenue data which can be used for detailed analysis and reporting to determine transit trends among riders.

- Protect customer privacy and transaction security by complying with the security standards of the financial payments industry, ensuring the security and confidentiality of customer information and protecting it against threats or hazards.
- Achieve cost efficiencies through the reduction of cash handling, number of forms of fare media and operating cost.
- Maximize the reach to Customers while minimizing the reliance on retail distribution network.
- Ensure optimized functionality for network connectivity onboard the buses.
- Support open architecture and be extensible to support new technologies as they mature in the industry.

Provider will meet the following BCT objectives for EASY Card Integration:

- Provide BCT with the ability to accept the EASY Card as a method of cashless fare collection for a single-trip passenger fare, or the appropriate BCT transfer fare on BCT buses. BCT will not sell or distribute the EASY Card, nor be responsible for customer service related to the EASY Card.
- Implement fare devices and supporting communication systems with the ability to send the necessary data for each revenue day to MDT, in a format acceptable to MDT.
- Integrate a communication system with the ability to process information related to EASY Card use on BCT vehicles between the central computers maintained by BCT and the central computers maintained by MDT.
- Establish back-office functionalities that can submit data for each revenue day to MDT in a format acceptable to MDT. The data shall identify each trip that was taken on a BCT vehicle and the fare that was utilized for the trip.
- Communicate with existing EASY Card back office in MDT, which processes and handles EASY Card transactions, auto load assignments and tracking of E-Cash purse activity, hotlist, accounting and reconciliation processes.

Provider represents that the software, equipment, and related services provided under this Agreement will meet the goals, objectives and requirements specified within this Statement of Work ("SOW") and provide the requisite functionalities and solutions.

2 Services Description

Provider shall develop, implement, support and maintain the System that is integrated with the existing Genfare fare collection software and equipment at BCT to create a single fully functional fare collection process. Provider shall provide all software, equipment, and related services as specified in this Section.

Provider shall provide, install and configure new Fast Fare validating fareboxes that meet the requirements specified in Section 3.1 of this SOW.

Provider shall upgrade the existing cashbox vaulting system at BCT to support the Fast Fare cashboxes and meet the requirements specified in Section 3.2 of this SOW.

Provider shall integrate the System with the existing data collection and reporting system (“DCRS”) at BCT to facilitate extraction of operating data from the fareboxes, downloading of fare tables and system configuration parameters to the fareboxes, and generation of management reports. Provider shall be responsible for all hardware and software upgrades required for the DCRS to be complete, fully functional, and meet the requirements specified in Section 3.3 of this SOW. Provider shall provide, install and configure equipment required for wireless data probing and meet the requirements specified in subsections 3.3.2.3 and 3.3.4.2 of this SOW.

Provider shall provide and install the latest version of Genfare Network Manager Application for the System. The Genfare Network Manager Application, System 7, Release 2, as updated to the latest version, shall be referred to herein as the “Network Manager Application.” The Network Manager Application shall meet the requirements specified in Section 3.4 of this SOW.

Provider shall provide, install and configure an onboard fare collection system that operates as specified in Section 3.5 of this SOW.

Provider shall develop and implement a Mobile Ticketing solution that meets the requirements specified in Section 3.6 of this SOW.

Provider shall cooperate with BCT and provide any and all information that BCT may request in order to determine appropriate security and network access restrictions and verify Provider compliance with BCT security standards as specified in Section 3.7 of this SOW.

Provider represents the System is capable of supporting new transit fare collection systems as specified in Section 3.8 of this SOW.

Provider shall complete all testing specified in Section 8 of this SOW.

2.1 Software List

Provider shall provide and install the software, using the latest version upon installation, listed in the tables immediately below:

Software Suite, Version & Module	Quantity & Type of License	Functionality & Expected Operation of Software
Upgrade existing Genfare Network Manager Application at BCT to Genfare Network Manager Application System 7, Release 3, version 3.1.4 or latest version	One server license with up to 25 concurrent users/workstations.	End-to-end fare collection System and data collection and reporting platform

(inclusive of Data Collection and Reporting System (“DCRS”) and Mobile Ticketing Management Tools)		
Upgrade existing GDS to 3.1.4 or latest version	(2) Data System licenses - one for each garage	Communication to fareboxes for transaction and event data extraction; communication to vault to extract cashbox identification from cashboxes; communication for data probing; generation of comprehensive management reports
Mobile Ticketing App (“App”) for iPhone and Android	Available for unlimited downloads from the Google and Apple App stores, free of charge to the Customers.	Allows Customers to purchase transit tickets using a mobile device whether connected to the Internet or not
Mobile Ticketing Web Portal	One enterprise license with unlimited concurrent users.	Allows Customers to purchase, replenish and manage mobile tickets using a web browser connected to the internet.
EASY Card Back Office Software	One enterprise license with unlimited concurrent users	Allows County resources to manage and execute all business processes and functions needed to interoperate with the EASY card.
Genfare FastFare Farebox Software	One enterprise license with unlimited concurrent users	Included in all Fareboxes purchased under this Agreement. Software for FastFare operation.

For all software provided, notwithstanding any reference herein to a particular model number or version, Provider shall provide the current or most recent version of the item at the time of installation.

All Third Party Software shall be at no additional cost to County, and any all upgrades and releases of such Third-Party Software shall be made available to County by Provider under the same terms and conditions as any Software manufactured by Provider. Prior to Final Acceptance, Provider shall ensure that BCT has all necessary rights to the Third Party Software as part of the System, including perpetual license rights to all Third Party Software.

2.2 Equipment List

Provider shall provide, install and configure the following Equipment:

2.2.1 Garage Equipment

Provider shall provide, install and configure the garage equipment, of the latest model or the latest engineering change level upon delivery, listed in the table immediately below:

Quantity	Equipment	Comments
1 Unit	Upgrade existing network manager computer, as necessary, to support the System	1 existing network manager computer located at BCT data center
2 Units	Upgrade existing GDS computer, as necessary, to support the System	1 existing GDS computer at Copans and 1 existing GDS computer at Ravenswood
11 Units	Upgrade existing vaults to support Fast Fare cashboxes – includes cashbox ID upgrade and electronic timer upgrade	3 existing vaults installed at Copans; 3 existing vaults installed at Ravenswood; 2 existing spares; and 3 existing mobile units
8 Units	Replacement of Infrared probes with Dynamic probes to support Fast Fare fareboxes	2 existing probes installed at Copans, 1 existing probe installed at Ravenswood; 4 existing spares stored at Copans; and 1 existing spare probe stored at Ravenswood
1 Units	New equipment for wireless data exchange via WiFi	All new equipment as required per Section 2.5 of the SOW

2.2.2 Bus Equipment

Provider shall provide, install and configure the latest bus equipment listed in the table immediately below:

Quantity	Equipment	Comments
399 Units	<p>41" Fast Fare validating farebox equipped with Operator Control Unit, Magnetic Card Reader, Smart Card Reader, 2D Bar Code Reader, and WiFi</p> <ul style="list-style-type: none"> • Genfare part number #D28700-1004 • Firmware version – 27246-427 or latest (controller), 27238-111 or latest (lid), 27237-108 or latest (pedestal) • OCU – firmware version – 22933-234 or latest • Smart card reader – firmware version 	See Section 3.1 for technical specification.

	<p>0.1.5.14i or latest</p> <ul style="list-style-type: none"> • Barcode reader • Magnetic TRiM • WiFi capability • Coin Validator – 03.11-U01L or latest • Bill Validator • G.v22 <p>Include all the wiring, protective devices and mounting hardware necessary for the proper installation and operation of the fareboxes</p>	
Varies	Spare Parts as ordered by County in writing	Subject to not-to-exceed amount in Section 5.1 of the Agreement.

For any Equipment, notwithstanding any reference herein to a particular model number or version, Provider shall provide the current or most recent model/release of the item at the time of delivery. Upon prior written approval of County Contract Administrator, Provider may substitute any Equipment listed above with substitute equipment of equal or better quality and functionality.

Provider shall deliver spare parts as may be ordered by County (whether manufactured by Provider or another commercial source) in accordance with the procedures set forth in Exhibit B.

Following implementation, for the duration of the Agreement:

- Provider agrees to make available and provide such parts, components, devices and/or assemblies used in the equipment and which are designed, made or otherwise controlled by the Provider for a period of not less than ten (10) years from the date of equipment installation.
- For commercial parts purchased by Provider from commercial sources and over which the Provider has no control, Provider agrees to monitor the availability of such parts. If a part is to be discontinued and no longer available from the original source, Provider shall notify BCT not less than six (6) months prior to the date of discontinuance to enable BCT to procure an adequate supply of the discontinued part.

2.3 Documentation

2.3.1 Operations and Maintenance Manual – Fareboxes

In addition to compliance with Section 7.2 of the Agreement, Provider shall provide operations and maintenance manuals that explain the functions and features of the farebox in detail and provide instruction on the various operations and remedial actions to be taken by the driver. Provider shall also provide pocket-sized driver's reference brochures describing how the farebox shall be operated, with simplified flow charts of actions to take when pulling out (logging onto the farebox), changing fare tables, and responding to problems such as coin and bill jams.

The maintenance portion of the manual shall contain, but not be limited to, the following

information:

- Description of operation
- Installation procedures
- Complete parts identification diagram and list
- Troubleshooting procedures
- Inspection procedures
- Diagnostic procedures
- Written diagrams
- Electrical schematics with board and cable identification
- Adjustment procedures.

2.3.2 Software and System Manuals

Provider shall provide System manuals, which must include, but not be limited to, the following information:

- Maintenance information on the data probes, junction boxes, and interface boxes supplied with the system, including interconnect diagrams and parts lists
- System startup
- Changing system parameters, including the fare table
- Report generation, including detailed description of all menus and screens and procedures for filtering and sorting data for each standard report
- Troubleshooting information.

In addition to the Provider-developed System manual, the Provider shall provide any commercial operations manuals for the computer and equipment which are normally supplied with the equipment by the original equipment manufacturers.

2.3.1 Manuals/Drawings – Vaults

Provider shall provide manuals and drawings identifying the various parts and assemblies in the vault equipment, including parts identification and repair procedures.

2.4 Installation Services

2.4.1 General Installation Requirements

Provider shall meet the following general requirements for system installation:

- Perform installation of equipment between the hours of 7 p.m. and 3 a.m. Monday thru Friday, and anytime on Saturday and Sunday.
- Provide all equipment, tools, personnel and supervision necessary for installation.
- Provider shall be responsible for all work involved in the removal of old equipment, the running of any overhead or underground conduits for data cable, stringing supported or unsupported cables from probe points to the computer, and providing adequate electrical service for the equipment provided, in accordance with BCT's current infrastructure, and in the presence of BCT staff.

- Use the existing DC electrical power available on BCT vehicles for installation.
- Inspect the AC power available for the Systems and inform BCT of any necessary modifications if existing power is inadequate. BCT or BCT-designated staff or contractors shall be responsible for making any requisite modifications to the type, capacity and quality of power lines.

2.4.2 Farebox Installation

Provider shall install the Fast Fare validating fareboxes in accordance with the following requirements:

- Perform all farebox installation onsite at the County-designated BCT facility.
- Supply all labor, supervision and materials required for the proper installation of the fareboxes in vehicles owned by BCT.
- Remove existing fareboxes and install the new fareboxes in the same location as the removed fareboxes, provided, however, that:
 - The chosen placement must maximize passenger movement and driver operation and be in compliance with accessibility requirements.
 - The placement of the fareboxes must allow an entering passenger to quickly and easily insert or present the required fare using coins, paper currency, magnetic fare document, mobile tickets or smart card.
 - The placement of the fareboxes must allow for complete, unrestricted opening of all farebox maintenance and cashbox doors. To the extent handrails or other equipment on BCT vehicles may interfere with the unrestricted opening of the farebox, Provider must reposition any such handrails or other equipment.
 - The placement of the fareboxes must allow for easy access for all required maintenance tasks and removal of the cashbox.
 - The mounting location for the farebox and OCU must be approved by BCT prior to installation.
- Return removed fareboxes to BCT for the storage and security of the fareboxes if desired by BCT.
- Survey BCT vehicles to identify and report any problems that may impede the normal and usual installation of equipment.

- Supply and install all the necessary wiring, protective devices and mounting hardware for the proper installation and operation of the fareboxes.
- Protect all new undercarriage wiring against the road elements.
- Fasten all new undercarriage wiring so as not to interfere with normal bus operation and/or maintenance. No "butt connectors" shall be utilized under the bus.

2.5 WiFi for Wireless Data Probing

Provider shall conduct an onsite WiFi survey to gather WiFi coverage requirements for the System at both BCT garages at Copans and Ravenswood. Provider shall install WiFi equipment at both BCT garages and any additional necessary equipment including, but not limited to, routers, switches and controllers, in addition to any electrical or necessary cabling work. Provider shall integrate the new WiFi equipment into BCT's current network.

2.6 Database Migration

Provider shall migrate the Network Manager database from existing Sybase versions to MS SQL 2012, which is required to operate and support the System. Provider shall migrate the GDS computer database from Sybase v. 9 to a proprietary data structure. BCT will be responsible for acquiring the MS SQL 2012 licenses.

2.7 Computer-Aided Dispatch/Automatic Vehicle Locator ("CAD/AVL") Interface

Provider shall design and implement an interface for the fareboxes to receive logon information (operator ID, route, run, trip, and direction) from the CAD AVL system as it is currently designed. Furthermore, Provider shall design and implement an interface that requests GPS locations and bus stop numbers from the existing CAD/AVL system. Details for the interface shall be finalized during the system design phase, subject to County approval. Genfare shall work with BCT's CAD/AVL provider onsite, as reasonably determined to be necessary by Broward County, to implement and test the CAD/AVL interface functionality.

The Fast Fare farebox shall geotag all transactions (cash, physical media, and mobile). The data system reporting shall reflect GPS locations (and bus stop numbers if provided by CAD/AVL system) for each transaction.

2.8 EASY Card Integration

At BCT's request, Provider shall work with MDT and its vendor(s) to acquire information and technical assistance in order to:

- Read the card serial number
- Read the remaining value on the card

- Read any pass/transfer information necessary to validate the ride, including but not limited to “tap-on”/”tap-off” time, transit authority, and type of vehicle where card was last used.

It is also understood by the Parties that:

- Palm Tran can only be included if it has equipment similar to MDT
- BCT must provide a list of locations where Easy Card is accepted as transfer in order for the backend analysis to determine whether full fare or transfer should be collected from MDT
- MDT must be able to reconcile against BCT’s invoice
- MDT must provide a bad-list for Easy Card at a minimum of once per day
- MDT or TriRail must be able to perform the required calculations and update the card appropriately with the BCT transactions when the card is used on their system

Based on these understandings, Provider shall provide the following services with respect to EASY Card integration:

- Work with MDT and its vendor(s) to develop the technical details for EASY Card integration during the EASY Card Integration system design phase. To the extent required, Provider shall do the following:
 - Configure the System for the integration to accept the processing of EASY Cards including transfer rules and bad card lists as agreed during design review.
 - Work with MDT to establish separate fare tables, including transfer rules for BCT in MDT’s back office.
- Work with MDT and its vendor(s) to develop and implement a method to load the EASY Card Encryption Keys (“EKs”) to the farebox smart card reader/validator without compromising the EASY Card system integrity and security.
- Implement measures to safeguard the security of the encryption key and other sensitive details concerning the EASY Card provided by MDT.
- Configure the farebox smart card reader/validator to process EASY Cards for fare payment onboard BCT bus fleet. The smart card reader/validator will only read the EASY Card, and it will not write to the card nor implement auto load transactions or make deductions from stored value or rides.
- Implement a back-end process that will generate files of EASY Card transactions to be placed periodically in a pre-defined location for further processing by MDT. The format of the files and the location for data file sharing will be determined by all parties during the system design phase.
- Work with MDT to implement data file sharing functionality with MDT’s back-office system utilizing FTP upload/download between the two agencies for the push of EASY

Card bad card lists, fare tables, transfer rules, auto load assignments, and fare transactional data.

Unless otherwise approved in writing by County, Provider shall enable the System to support the following fare rules when an EASY Card is presented for fare payment on a BCT Vehicle:

- The EASY Card can be utilized for a transfer between MDT, BCT, Palm Tran or Tri-Rail systems as follows: (a) within three (3) hours after the most recent “tap on” by the EASY Card on a MDT Metrobus, BCT or Palm Tran vehicle; or (b) within three (3) hours after the most recent “tap off” by the EASY Card on MDT Metrorail or Tri-Rail (collectively, the “Transfer Period”).
- If the EASY Card is utilized on MDT's public transit system or Tri-Rail and the transit customer transfers to either a BCT or Palm Tran vehicle at a designated transfer location within the Transfer Period, the appropriate transfer fare(s) shall be deducted from the EASY Card to reimburse BCT or Palm Tran as applicable.
- If the EASY Card is utilized on a BCT vehicle and the transit customer transfers to a Palm Tran vehicle at a designated transfer location within the pre-defined Transfer Period, the appropriate transfer fare shall be deducted from the EASY Card to reimburse PALM BEACH.
- If the EASY Card is utilized on a Palm Tran vehicle and the transit customer transfers to a BCT Vehicle at a designated transfer location within the Transfer Period, which the appropriate transfer fare shall be deducted from the EASY Card to reimburse BROWARD.
- If the EASY Card is utilized on a BCT or Palm Tran vehicle outside the Transfer Period, the full fare shall be deducted from the EASY Card to reimburse BROWARD or PALM BEACH, as applicable.
- Each transfer is determined separately for any trip that has more than one transfer and each transfer is determined relative to the last use of the EASY Card to reimburse BROWARD and PALM BEACH, as applicable.
- BCT and Palm Tran will have the capability of accepting the EASY Card as a method of cashless fare payment for a single trip or a qualified transfer trip, provided there is sufficient cash value stored on the EASY Card at the time of use.

2.9 Regional Enhancement Options: Mobile Ticketing and Account-Based Upgrade

At County's reasonable request, at any time(s) during the duration of the Agreement, Provider shall participate in technical approach discussions with BCT's regional transportation partners to develop a regional Mobile Ticketing solution. Provider shall provide a report of agreed upon technical approach and a proposal for Optional Services within 30 calendar days of any such discussion.

At County's reasonable request, at any time(s) during the duration of the Agreement, Provider shall participate in technical approach discussions with BCT's regional transportation partners to develop an account-based fare payment processing option with read-only EASY Card processing.

Provider shall provide a report of agreed upon technical approach and a proposal for Optional Services within 30 days of any such discussion.

2.10 Payment Processing Plan

Provider shall work with BCT staff to integrate electronic payments through the Provider's recommended payment processing gateway and/or processor for credit and debit card transactions. If Provider does not have a certified payment processing solution in place, Provider shall work with BCT to integrate credit and debit card acceptance with the County's current payment processing gateway and/or processor BAMS/Cybersource/FirstData.

2.11 PeopleSoft Interface

Provider shall provide export files on fare sales and usages in a format approved by County for interface with the Broward County's PeopleSoft system. The file format and export frequency will be determined during the system design phase. Provider shall also cooperate in the development of the interface and coordinate with County's Enterprise Resource Planning (ERP) vendor as reasonably required by County.

2.12 Marketing Development Assistance

Provider shall ensure that the Mobile Ticketing solution provides BCT with the ability to create stories, campaigns, news releases, promote in social media and produce advertising without vendor approval. Provider shall assist BCT with marketing efforts to develop educational and promotional materials to inform and educate Customers of the upcoming fare collection equipment and operating instructions. Provider must assign to BCT one (1) qualified marketing-trained employee to assist BCT in these efforts (up to 160 hours, unless a greater amount is reasonably required by County), at no additional cost. Provider shall provide examples of materials, hardcopies and digital, used previously at other installations. At County's request, Provider must be prepared to discuss how effective any educational or promotional materials were at prior installations. Materials may include pamphlets, posters, videos, graphics, and digital and print advertising, among others. Provider shall also share its expertise with BCT to help promote and build customer awareness of Mobile Ticketing and EASY Card integration, including, without limitation, information regarding:

- Existing promotional opportunities on the property (signs, kiosks, etc.)
- Video running on digital signage
- Advertising campaign, digital and print
- Rack Cards for outreach events
- Press releases
- Posters
- Newspaper articles

- Leveraging BCT Facebook, Broward County Twitter and other social media sites
- On-Board Signage including bus placards and bus operator panel signs
- BCTV Slides
- Customer E-Newsletter (Transit Flash)
- Broward County E-News and *Bridges*

BCT shall, at its sole discretion, decide which promotional and marketing materials will be used.

2.13 Training

Provider shall use experienced and qualified instructor(s) to conduct all training onsite at BCT's facility. Provider's instructors shall make use of visual training aids including, but not limited to, viewgraphs and videos (if available) to reinforce the material presented, and distribute hard copy handouts to students. In addition to the foregoing, Provider shall provide training as follows:

2.13.1 Farebox Maintenance Training

Provider shall conduct two (2), three (3) day (8 hours/day) on-site (at Broward County) training session(s). This training session covers all aspects of farebox maintenance as well as revenue collection (cashbox receivers, vaults, and probes). This training session will train BCT's staff on comprehensive farebox (and related equipment) maintenance and repair. During this training session, each student will be required to tear-down and build-up a farebox in class. Due to hands-on training activities conducted during this session, class size must be limited to a maximum of eight (8) participants per class.

Training topics must include:

- Basic construction and operating features of the farebox and related equipment
- Examination and disassembly of major assemblies, including but not limited to:
 - Bill mechanism
 - Coin mechanism
 - Electronic chassis
 - Lower stanchion and cashbox
 - Electrical wiring harnesses
- Troubleshooting procedures
- Field-level repair of farebox and related equipment.

2.13.2 Revenue Collection System Training

Maintenance, troubleshooting, and repair of the revenue collection system will be provided as part of the Farebox Maintenance Training above.

2.13.3 Cashbox and Vault Operations Training

Following farebox installation, Provider shall conduct a brief demonstration, and training session on proper probing, cashbox removal, and cashbox vaulting at a time that is mutually agreeable by the Parties. This on-site training shall be scheduled and conducted in such manner as to ensure that, to the extent possible, any and all employees whose jobs requires knowledge on the operations of the cashbox and vault receive this training.

2.13.4 System Training (Back Office System Administrator, Power Users, and Business End-Users)

Provider shall conduct one (1), three-day on-site training session and one (1), two-day on-site refresher training session. The training program will use a train-the trainer format and train BCT staff in the proper operation and use of the data collection and reporting system. The training session must include the following topics:

- How to run the programs
- Descriptions of the individual programs
- Interpretation of all alarms, indicators and printed messages
- Restart procedures in event of a prolonged power failure
- How to access the database for additional analysis
- How to generate reports
- How to perform ticket purchase dispute resolution and customer services
- How to perform revenue reconciliation

For Mobile Ticketing

- How to configure the mobile application
- Discuss the underlying design of the mobile application
- How to configure fare structure for mobile ticketing
- How to monitor the status and operating conditions of the mobile application

For Easy Card (to be provided in the second session):

- How to set up the parameters for export of data to the Easy Card system
- Discuss the underlying design of the validation and data export procedures
- How to troubleshoot if export fails

2.13.5 Operator Training

Provider shall conduct two (2), one-day on-site training sessions and two (2) one-day on-site refresher training sessions. This training program will use a train-the trainer format to teach supervisory personnel, who in turn will train BCT's operators. Training sessions should be limited to

eight (8) personnel per 2 - 3 hour sub-session. The training program shall cover the operations of the farebox and OCU and shall make use of one of the fareboxes provided under this Agreement for illustrative purposes. Provider shall provide two (2) fareboxes configured for training purposes.

2.13.6 Customer Training and Educational Materials

Provider shall provide BCT with sample educational materials in a hardcopy and electronic version, suitable for use in a public relations campaign aimed at educating Customers about the new fareboxes, Mobile Ticketing and EASY Card.

3 Technical Approach and System Functional Specifications

3.1 Fast Fare Validating Farebox

3.1.1 General

The farebox shall be a bus-mounted, freestanding device used to process and, if necessary, collect and securely store a variety of fare media. The farebox shall be controlled by electronic logic and supported by electronic memory, displays and indicators. It shall permit the easy insertion of fare media by boarding passengers, provide a display for passenger information and have an attractive and uncluttered appearance.

The farebox shall automatically validate inserted fare media, determine if genuine, and comply with County's established conditions of use. The farebox shall be reliable in revenue service operations, accurate in its counting and data reporting, and secure in its retention and transfer of data and collected revenue. Under normal operating conditions, processing of fares shall require no driver intervention or inspection of fare media. Exceptions to this would be when it is necessary to process certain types of fare media such as reduced or other special fares.

The farebox shall function under the environmental and operational conditions stated herein and shall be designed and manufactured to provide a high degree of security against forced entry and/or unauthorized manipulation.

The farebox shall provide specific information regarding daily operation, including revenue collected, types and quantities of fares collected, driver/route identification, and other information needed to account for revenue and monitor the equipment.

3.1.2 Operating Environment

3.1.2.1 External Environment

Provider shall provide independent laboratory test results to BCT which certify that the farebox is able to operate without any degradation in performance under the following minimal environmental conditions:

Storage temperature	-25°F to +140° F (-32°C to 60°C)
Operating temperature	+32°F to +122°F (0°C to 50°C)
Storage humidity range	5% to 99% R.H. non-condensing
Operating humidity range	20% to 95% R.H non-condensing
Thermal shock	1° per minute drop in temperature over 15°F range between 110° and 60°
Vibration	1.5g (rms), 5 to 200 Hz
Shock	Up to 5g (instantaneous)
Dust	Airborne particles and dust encountered in revenue service or caused by general cleaning and sweeping. For cleaning using cyclone or high pressure air devices, use of water-resistant covers over the fareboxes is recommended.
Inclination	Up to 10° off vertical for short duration
Water/solvents	Water spray on equipment from cleaning bus floors and walls; industrial cleaning solvents; wet fare media; rain, mud, snow, and slush dripping from passengers' clothing or possessions
Electromagnetic interference	Immune to 400V spikes of up to 5 microseconds duration across the incoming power supply lines

The farebox shall remain fully operational in the presence of the following contaminants: airborne particles, grease, oil, and other contaminants accumulated on coins, tokens, and bills within reasonable limits.

3.1.2.2 Electrical Power

Provider shall ensure the farebox has the following electrical characteristics:

Power source	12 or 24 VDC nominal (bus battery)
Operating range	10 to 60 VDC
Power consumption	210 watts peak, 30 watts typical, 15 watts standby (sleep mode)

No converter or other special modification shall be required to permit the farebox to operate on either 12 or 24 VDC input voltage.

The farebox shall be protected against damage and/or loss or modification of data under the following conditions:

- Loss of voltage (zero volts).
- Undervoltage (0 to 10 VDC)
- Reverse polarity of the input voltage
- Fluctuating voltages between 10 and 60 VDC

Provider shall ensure the farebox power supply includes adequate filters and other provisions to regulate the bus-supplied voltage and suppress power spikes and noise that could contribute to erroneous registration or generation of data. Provider shall render the power supply immune to electrical interference caused by such items as fluorescent light, bus alternators, air conditioning units, radios, etc. To the extent necessary to prevent damage to electronic components, Provider shall incorporate adequate protection against transient surges in the bus power supply.

Loss or restoration of power shall not result in corruption of data in memory. If power fails or drops below 10 VDC while a transaction is in process, the transaction will resume after normal voltage is restored. Provider shall ensure that sustained farebox operation with voltage levels ranging from 10 to 60 VDC will have no adverse effect on farebox performance and will not cause permanent damage to the farebox nor result in loss or corruption of data.

The farebox shall be unaffected by electromagnetic radiation from bus equipment, including radio, lights, electronic destination signs, air conditioners, and generators. The farebox shall not emit electromagnetic interference (“EMI”) or radio-frequency interference (“RFI”) that produces harmful interference with other on-board electronic devices and systems.

3.1.3 Accuracy and Acceptance

3.1.3.1 Coins and Currency

Provider shall ensure the following functionality is present:

- The total amount of money registered by a single farebox or a combination of fareboxes in the form of coins and bills shall not vary from the actual amount by more than $\pm 1\%$ (plus-or-minus one percent) for amounts greater than \$100. Accuracy calculation shall be adjusted for bent or bogus coins, improper operation, and operation in environmental conditions beyond the limits specified herein.
- Valid coins shall be accepted at a rate of not less than 95% on first insertion, and 98% on second insertion. Valid bills shall be accepted at a rate of not less than 95% on first insertion, and 99% on second insertion.

3.1.3.2 Magnetic Swipe Card Reader

Provider shall ensure that magnetic fare documents swiped through the card reader are accepted and read on first proper insertion at a rate of not less than 99%, assuming each document is valid and the document is not damaged so as to destroy the ability of the reader to correctly read the encoded data. Acceptance following second swipe shall equal or exceed 99.5%.

3.1.3.3 Magnetic Card Processing Unit (“MCPU”)

Provider shall ensure that magnetic fare documents inserted are accepted and read on first proper insertion at a rate of not less than 99.5%, assuming each document is valid and the document is not damaged sufficiently to destroy the ability of the MCPU to correctly read the encoded data.

The magnetic fare document re-encoding verification rate shall be not less than 99.9%. Re-encoding failure is defined as a magnetic fare document that cannot be read by the MCPU after re-encoding.

3.1.3.4 Smart Card Processor

Provider shall ensure that smart cards are successfully read and processed on first proper presentment at a rate of not less than 99%, assuming each card is valid and not damaged so as to destroy the ability of the smart card processor to correctly read the encoded data.

3.1.3.5 Bar Code Processor

Provider shall ensure that bar coded tickets are successfully read and processed on first proper presentment at a rate of not less than 99%, assuming each ticket is valid and not damaged so as to destroy the ability of the bar code processor to correctly read the encoded data.

3.1.4 Reliability and Maintainability

3.1.4.1 Reliability

Provider shall design the farebox with the highest degree of reliability. Provider shall ensure the farebox operates at a minimum of sixty (60) days' mean time between failures ("MTBF"). Failure is defined as (a) the inability of the equipment to perform an essential function, such as the processing and recording of the various types of fares and the collection and secure storage of revenue, or (b) an occurrence in which continued operation poses a threat to the equipment, driver, passengers, garage personnel or others. Exposed money due to the cashbox exceeding the capacity specified herein or failures caused by passengers through the insertion of out of tolerance or mutilated coins/bills/passes/tickets will not be counted as a failure. The farebox's electronic circuit boards, including associated electronic components, shall be capable of operating an average of ten thousand (10,000) hours between failures provided there is no abuse, vandalism, operation beyond standards or lack of maintenance per the Provider's instructions.

3.1.4.2 Maintainability

Provider shall ensure that the mean time to repair an inoperative farebox does not exceed ten (10) minutes. Repair is defined as the diagnosis, removal and replacement of one or more defective assemblies (such as a coin mechanism, bill transport, electronic board, etc.) in order to restore the farebox to working condition. Repair of the defective assembly is not included in mean time to repair.

3.1.4.3 Modular Construction

Provider shall use modular construction throughout the farebox. Each module shall be self-contained and shall be inserted in a singular, correct fashion by means of guides and electrically connected by means of polarized plugs.

3.1.4.4 Component Removal without Tools

Provider shall ensure that the coin and bill modules, magnetic card processing unit, magnetic swipe reader, optional smart card processor, and farebox logic board are readily accessible when the top cover is opened and shall be capable of being removed and/or replaced without the use of any tools.

3.1.5 Coin Processing

3.1.5.1 Coin Slot

Provider shall position the coin slot on the top surface of the farebox and shall ensure that:

- Coin slots allow for the rapid gravity insertion of coins and tokens by passengers.
- Coin slots are shaped to direct inserted coins into the farebox and designed to deter the entry of paper or large foreign matter into the coin slot to minimize coin jams.
- There is sufficient space between the coin slot and the bill slot to prevent coins from being erroneously inserted into the bill validator.

3.1.5.2 Coin Validator

Provider shall ensure:

- The coin validator is capable of processing and validating coins and tokens.
- The coin validator determines the validity of inserted coins based on their metallic content and distinguishes between different valid coins/tokens provided each item has a distinctive metallic signature.
- The coin validator accepts, validates, and counts the value of pennies (1¢), nickels (5¢), dimes (10¢), quarters (25¢), and Susan B. Anthony and Sacagawea dollar coins (\$1.00).
- Up to two (2) sizes of tokens are validated by the coin unit provided that each token's metallic signature is readily distinguishable from other coins and tokens.
- The validator and associated logic are solid state, employing no motors or moving parts for the validation process.
- Coins accepted by the validator have their value posted to the logic and are displays and immediately directed to the cashbox.
- The coin validator is capable of handling deformed coins, i.e., coins that are bent or bulged, not perfectly round, or have attached foreign material, with the exception of:
 - Coins that are so bent, bulged, encrusted with foreign material, or otherwise damaged that they will not fit through the coin slot; and
 - Coins whose electrical characteristics have been so altered due to loss or addition of conductive material as to render them unrecognizable by the validator.

3.1.5.3 Coin Rejection

Provider shall ensure coins are rejected by the validator if the inserted coin is:

- Valid U.S. coinage, but not one of those that the validator is programmed to accept;
- Bogus, foreign or counterfeit; or
- Coins incapable of being recognized by the validator as described above.

Rejected coins shall be returned to the passenger via a coin return cup, located on the front of the farebox. Provider shall fit the coin return cups with a transparent spring-loaded door to prevent coins from falling from the cup and an internal lamp to provide illumination to the cup.

3.1.5.4 Coin Bypass

Provider shall ensure that in the event that the coin slot is jammed and/or the validator is inoperative, a means is available to permit coins to pass directly from the coin insertion slot to the cashbox, bypassing the coin validator. Coins processed in this manner shall not be counted or registered by the farebox. Provider shall further ensure that:

- Use of the coin bypass mechanism does not affect the security of the farebox or the collected revenue.
- Activation of the coin bypass mechanism requires deliberate action by the driver.
- Once the bypass has been activated, it is not possible for the driver to reset it from outside the farebox. Resetting the mechanism requires access to the farebox interior by authorized personnel.
- The farebox notes in its memory and retains for data transmission the exact times when the bypass was activated and deactivated.
- When the coin bypass is activated, bills and electronic fare documents continue to be accepted, registered and processed in a normal manner.
- When probed, any farebox which has been placed in bypass since the last time it was probed emits a tone that is noticeably different from the normal probe tone to indicate that the farebox is in the bypass mode and requires remedial action.

3.1.6 Bill Acceptor

Provider shall provide the farebox with a bill acceptance module (“bill acceptor”) capable of accepting, validating, and counting paper currency. The bill acceptor shall be mounted in the upper portion of the farebox and provide an entry bezel near the top of the farebox for easy entry of paper currency. The bill acceptor bezel shall accept bills that have been opened to their full size and inserted lengthwise. The dimensions of the bill acceptor bezel shall hinder the accidental entry of coins into it. The mechanism used to transport the inserted bills to the validator shall be positive and not require precise insertion by the passenger. A guide surface shall be provided to assist in the entry of the bill into the farebox. There shall be sufficient space between the bill acceptor and the coin acceptor to prevent the erroneous insertion of coins and bills into the inappropriate slots. Upon insertion of the bill, the bill transport shall become operational and advance the bill to the validator.

Provider shall ensure the bill transport has the capability of handling, without jamming, deformed paper media, i.e., paper media subject to daily "street" use, including wrinkled, torn, folded, or damp media. The limits of deformation and the corresponding action of the bill transport are described below.

The bill acceptor shall have indicator lights that let customers know when the module is or is not ready to accept bills

3.1.6.1 Currency Acceptance

Provider shall ensure:

- The bill acceptor accepts a bill that is inserted face up, face down, or with either end first.
- The acceptor logic examines the inserted bill and determines its validity and denomination.
- Invalid currency and denominations that have not been programmed for acceptance by the farebox are rejected.
- The bill acceptor accepts and validates the following U.S. banknotes:
 - One-dollar bills (1\$);
 - Five-dollar bills (\$5) (old and new style);
 - Ten-dollar bills (\$10) (old and new style);
 - Twenty-dollar bills (\$20) (old and new style);
- The acceptor processes and accurately registers:
 - Bills not uniformly flat or in new condition;
 - Bills that are damp but not saturated.
- Processing time is less than two (2) seconds per bill regardless of the denomination being processed, as measured from the time the bill acceptor begins to draw in an inserted bill until it is ready to accept another bill.

3.1.6.2 Currency Rejection

Provider shall ensure BCT is able to configure the System to reject any of the above bills for policy reasons. Provider shall further ensure:

- All bogus bills, foreign currency, and photocopies of valid currency are rejected. The farebox shall also reject:
 - Bills inserted into the transport in folded condition, thus reducing the overall length of the bill by more than 1/2" (one-half inch).
 - Paper media having tears more than 1/2" (one-half inch) long.
 - Paper media having internal holes or tears.
 - Bills having tape or other foreign material adhering to it.
 - Any inserted paper other than currency, including magnetic or other tickets.
- If a bill is rejected, the transport mechanism reverses and the bill is returned to the passenger via the entry bezel.

3.1.6.3 Bill Transport

Provider shall ensure:

- The bill validator feeds an accepted bill into a bill transport and advances the bill into the cashbox. The bill transport employs a pulley and belt mechanism to positively engage an unfolded bill, irrespective of condition.
- No force is required to cause the bill transport to start.
- Solid-state devices are employed to start the bill transport.
- The bill transport operates until the bill has been deposited into the cashbox.

3.1.6.4 Manual Bill Override

Provider shall ensure that upon examining a rejected bill and determining that it is genuine, the bus operator has the ability to activate an “accept next bill” feature using the farebox keypad. This feature shall allow the bill validator to accept the next inserted item without regard to its validity. The driver shall have the ability to input the denomination of the bill to be manually accepted. Only one bill shall be accepted at a time upon activation of the “accept next bill” feature. Following acceptance, the validator shall revert to normal operating mode. All uses of the “accept next bill” feature shall be recorded by the farebox and uploaded to the System. BCT shall have the ability to limit use of the feature to certain denominations of bills. It is understood that due to the possibility of human error, manually accepted bills are to be excluded from farebox accuracy calculation.

3.1.7 Magnetic Card Processing Unit

3.1.7.1 Functional Description

Provider shall provide the farebox with an integral magnetic card processing unit (“MCPU”) capable of processing a magnetically striped, thermally coated document.

Provider shall ensure the MCPU is capable of performing the following functions:

- Accept and read a previously issued magnetic fare document such as a stored ride/value card, transfer, or pass, and:
 - If the card is valid, encode, verify, and print on it as appropriate, and return it to the passenger;
 - If the card is invalid, reject it and return it to the passenger.
- Upon operator command, issue, print, encode and verify a transfer, day pass, change card, receipt, audit ticket or other agreed upon document from an internal cassette of blank un-encoded documents.

All documents processed in the MCPU shall be 2-1/8 inches wide by 3-3/8 inches long by 0.010 inches thick or approved equal. Documents to be printed shall have a thermal coating on the same side as the magnetic stripe. The coating shall be suitable for print conversion at 65 degrees C.

Provider shall ensure the MCPU shall be enclosed within and integral to the farebox with an illuminated entry bezel on top of the farebox in proximity to the coin and currency slots. Provider

shall design the MCPU to enable passengers to easily and rapidly insert cards into the slot and then remove them.

3.1.7.2 Magnetic Fare Document Processing Requirements

Provider shall ensure:

- The magnetic stripe of the magnetic fare documents is of the high coercivity type (typically 2700 Oersteds).
- All data is placed in ISO track 2 and encoded at a minimum density of 120 bits per inch.
- All data encoded by the MCPU is verified by the read head before the document appears at the exit bezel. If the data read does not match what was written, the MCPU shall automatically re-encode the document and attempt to verify it again.

3.1.7.3 Printing on a Document

Provider shall furnish the MCPU with a full width thermal print head, which may be used to print information in the form of text, symbols and graphics anywhere on the document, except for a 1/8 inch outer margin and over the magnetic stripe. Resident fonts shall include not less than three sizes in regular and reversed (white on black) print. The MCPU must be able to store special symbols for use, as required.

Provider shall ensure the MCPU can print the following:

- Remaining value on previously issued stored value documents
- Remaining rides on previously stored ride documents
- Expiration dates on previously issued rolling period passes
- Expiration date, time, etc., on newly issued transfers, and a time stamp on previously issued transfers
- Change cards, receipts, audit tickets, and other agreed upon documents.

Provider shall ensure that for nonrenewable stored ride/value cards (no reloading of rides or value permitted), the remaining value is printed on single lines and/or in columns and that for renewable cards, the remaining value is printed only when the value gets to a critical point representing one or two fares, indicating that the card should be recharged.

Provider shall further ensure that:

- Blank document stock has no value until printed and encoded by the MCPU.
- Printing is on the magnetic stripe side of the document.
- Printing is of the thermal type, made up of dots with a resolution of not less than 190 dots per inch.
- The MCPU is able to print in portrait or landscape orientation, up to 20 rows of type, not less than 16 characters per row, in a typeface of not less than 12 points.
- The MCPU is able to print text in a variety of fonts and sizes.
- The MCPU is able to print graphics of any size, except as limited by the printing area on the card.

- BCT is able to reserve certain areas on the document for such variable and/or conditional information as may be required by BCT.

3.1.7.4 Pass Issuance

Provider shall ensure that upon manual or automatic command, the MCPU is able to issue a paper pass (Transfer, Day Pass, etc.) which shall be encoded with the conditions of use and expiration on the magnetic track and printed in readable form. The pass shall be printed on the die cut thermal stock contained within the MCPU.

3.1.7.5 Pass Acceptance

Provider shall ensure that the MCPU accepts magnetic passes previously issued by older fareboxes used by BCT and magnetic passes issued by fareboxes installed pursuant to the terms of this Agreement and is able to determine their validity and authorized use. Provider shall further ensure that:

- The MCPU accepts the pass, reads it to determine validity based on criteria such as value remaining, expiration time, number of rides taken, direction, and/or other agreed-upon restrictions of use, prints on and re-encodes the pass as appropriate, registers the completed transaction in memory, and returns the pass if appropriate.
- If a pass is limited to a particular number of rides, the MCPU is able to re-encode it to reflect each use without issuing a new document, and imprint it with new information in human-readable format.
- If a pass is no longer valid, the MCPU prints “EXPIRED” or similar message on it in large, easily readable letters.
- The MCPU has the ability to be programmed to:
 - Process passes with or without driver intervention. For passes processed without driver intervention, downloadable acceptance parameters have the ability to:
 - Permit or exclude round tripping on transfers and to permit a stopover privilege on a continuing trip;
 - Accept transfers based on direction of continuing trip.
 - Issue a transfer, day pass, or proof of payment without changing document stock. Identification of the type of document shall be a downloadable text string printed on issue.
 - Condition transfer acceptance on payment of additional fare.

3.1.7.6 Change Cards

Provider shall ensure that the MCPU, under farebox logic command, has the ability to create and issue “change cards.” A change card is a document provided to the passenger in the event that more than the required amount is inserted into the farebox and the passenger would like to receive the difference between what was inserted in cash (coins and bills) and the required fare.

A change card shall function as a nonrenewable stored-value card on subsequent use.

3.1.7.7 Receipts

Provider shall ensure the MCPU under farebox logic command has the ability to print and issue a receipt from internal ticket stock. Such receipts may be provided for card upgrades, printout of one or more transactions using a smart card, or in conjunction with use of a credit card.

3.1.7.8 MCPU Card Stock Replenishment

Provider shall equip the MCPU with an internal removable cassette which shall hold not less than 600 cards 0.010 inches thick. The cassette shall be removable to enable additional cards to be inserted or another full cassette inserted in its place.

Provider shall further equip the MCPU with sensors to indicate when the card stock is low (when approximately 100 cards are remaining). The indications shall be visible on the driver's display. The farebox shall transmit an alarm to the GDS when the ticket stock falls below a trigger point. Additionally, the driver's console shall be equipped with buttons that allow the driver to determine, upon entry of a button combination, that the ticket stock has fallen below the trigger point.

Provider shall ensure the MCPU is able to accept additional card stock without discarding the existing stock.

3.1.7.9 MCPU Processing Time

On average, the MCPU shall process or issue a card in two (2) seconds or less.

3.1.8 Magnetic Swipe Card Reader

3.1.8.1 General

Provider shall provide the farebox with a swipe card reader to process read-only magnetic documents such as passes which have been previously encoded with data, including, but not limited to, serial number, card type, and validity dates. The card reader shall be integral to and flush with the top surface of the farebox near the coin and currency slots.

Provider shall ensure:

- The card reader permits passengers to easily and rapidly swipe cards through a slot.
- The reader has its slot oriented so that cards are swiped from right to left (from the passenger's viewpoint), in the general direction of passenger boarding.
- A guideway directs the card into the slot for swiping.
- The guideway shall be integral to the farebox and designed to prevent the card getting caught or torn during card swipe
- The guideway is illuminated for ease of use at night.
- The maximum speed at which a card can be swiped and still be accurately read is at least 70 inches per second.
- The read mechanism is spring loaded and accommodates passes with a minimum thickness of .006 inch and a maximum thickness of .030 inch.

3.1.8.2 Processing Time

Provider shall ensure the swipe card reader allows automatic processing of a correctly swiped, valid magnetic card in 0.5 seconds or less. Use of the swipe reader shall not impede passenger boarding or flow in any manner.

3.1.9 Smart Card Processor

Provider shall equip the farebox with a device (“Smart Card Processor”) capable of processing a Near Field Communication (NFC) enabled media including, but not limited to, contactless smart card, contactless bank card, and NFC enabled mobile devices. The Smart Card Processor shall be integral to the farebox and not an externally mounted component. It shall not be necessary for the passenger to remove the media from his/her wallet, purse, etc., for a media to be successfully processed. The Provider shall ensure the bar code processor is highly accurate and reliable with a 99% service availability and 99% accuracy. The Provider shall ensure the Smart Card Processor is designed with an open architecture to accommodate new reader technologies after initial deployment.

Provider shall provide safeguards to prevent the Smart Card Processor from accidentally processing two cards simultaneously. Provider shall further ensure that:

- Data on a media is not corrupted if the Customer withdraws the media before processing is complete. In such event the transaction in progress shall be canceled.
- Once processing of a given media is complete, the processor does not initiate another transaction involving the media unless and until it is withdrawn and re-presented to the target area.
- When the farebox is logged in, the Smart Card Processor is continuously active and looking for a NFC enabled media.
- When a media is placed within two inches of the farebox's media Processing target area, the information stored in the media is read for fare payment processing.

3.1.10 Bar Code Processor

Provider shall equip the farebox with a bar code reader specifically for the reading of 2D (QR-type) bar codes. The bar code reader shall consist of a scanning module mounted behind a clear plastic window on the passenger interface portion of the farebox. Customers shall be able to present barcoded fare media to the scanning module permitting the document to be scanned. Barcode media may be virtual (that is, displayed on a Customer’s mobile device) or paper.

Provider shall ensure that when the farebox is logged in, the bar code processor is continuously active and looking for a bar coded fare media. When a bar coded fare media is placed within two (2) inches of the farebox's bar code target area, the information on the fare media shall be read for fare payment processing. The Provider shall ensure the bar code processor is highly accurate and reliable with a 99% service availability and 99% accuracy.

3.1.11 Electronic Fare Document Operations

The following requirements apply to all electronic fare documents, whether magnetic, bar code or smart card.

3.1.11.1 Processing Requirements

Provider shall ensure that:

- Upon insertion in or presentation to the appropriate fare processing equipment and/or module, electronic fare documents are immediately read. If there is no data or the data is corrupted, unrecognizable, or invalid, the farebox shall reject the document. The farebox shall validate an electronic fare document against the currently active fare set with respect to the following parameters:
 - Expiration date – has the document expired?
 - Validity period – is the document being used during the permitted times/days?
 - Issuing agency – was the document issued by an acceptable agency?
 - Document type – is the document type valid?
 - Passenger fare category – is the fare category acceptable for the present time/date and class of service?
 - Remaining value/rides – is there sufficient remaining value or rides to pay the fare?
 - Transfer information – does the transfer comply with the conditions of use for the category of transfer?
 - Passback – is the document being used for a second time on the same bus within a predetermined time?
 - Bad number – is the document’s serial number on the bad number list?

3.1.11.2 Stored Ride/Stored Value Card Processing

3.1.11.2.1 General

Stored value and stored ride cards shall be pre-encoded for a specific amount or number of rides and distributed off the bus. Provider shall ensure that when a stored value or stored ride card is inserted or presented, the farebox is able to examine the card to determine that there is adequate value or rides to pay the required fare, deduct the proper amount and re-encode the card with the remaining value or rides, print the remaining value or rides on the card if appropriate (magnetic cards only), and return the card to the passenger.

In the event that the card does not have adequate value to pay the full fare required, Provider shall enable the farebox to accept “split payment” transactions in which a combination of cash and electronic media are used to pay the fare.

3.1.11.2.2 Operation

Provider shall ensure that when a stored value or stored ride card is processed, the farebox:

- Determines that the card has been properly read. If a misread is detected, the driver's information display indicates "MISREAD" or other similar message, and a distinctive tone sounds.
- Checks whether the card is valid for the present time/date and class of service. If the card is not valid, the display indicates "INVALID" or other similar message. If the card's expiration date (if any) has passed, the display indicates "EXPIRED" or other similar message.
- Checks whether the card serial number is on the bad-number list. If the number is found on the bad-number list, the display indicates "BAD PASS" or other similar message.
- Checks whether the card has sufficient rides or value to pay the fare.

Provider shall ensure that:

- If the card passes all the preceding tests, the farebox deducts the appropriate value or number of rides, re-encodes the card, sounds the "successful transaction" tone, registers the fare in memory, and displays the amount deducted and remaining on both the driver and passenger displays.
- In the event a stored value/ride card intended for reduced fares is used, an appropriate message such "STUDENT," "SENIOR," etc., appears on the driver's information display once the card is validated.
- BCT is able to configure the System to restrict use of a student fare card to weekdays.
- The farebox records in memory the quantity of each stored ride or stored value card processed, e.g., full, senior, student, etc., as well as detail on each transaction.

3.1.11.2.3 Embedded Transfers

Provider shall ensure the farebox is able to encode "embedded transfer" on a stored value card, whether magnetic or smart card. An embedded transfer must permit the stored value card to act as a transfer without issuance of a separate document. The transfer shall be embedded upon passenger request and, if desired by BCT, payment of a predetermined transfer fee. Alternatively, Provider shall ensure the farebox is able to automatically embed a "passive transfer" on a stored value card at the time of initial fare payment. If the card is subsequently presented for fare payment on another vehicle within the validity period for transfers, and if the transfer is otherwise valid for use, the farebox shall automatically deduct the transfer fee if any and register the fare.

3.1.11.3 Period Pass Processing

3.1.11.3.1 General

Provider shall ensure that three types of period (limited duration) passes are supported:

- Fixed period passes
- Post billing passes; and
- Rolling start period passes

Fixed period passes are previously encoded, read-only documents valid between specified calendar dates, typically a particular week or month. The farebox shall read the pass and check whether it is valid for the current date.

Post billing passes are previously encoded read-only documents used for employee billing programs. They are valid for a specified period, typically a year or longer, and have specific expiration dates. The farebox shall read the pass, check whether it is valid for the current date, and record the serial number in a specific record. The serial number, time of use, and bus and route number shall be subsequently uploaded to the System to permit the generation of a report for invoicing purposes.

Rolling period passes are previously encoded and valid for a specified period following first use, typically 7 days or 30 days. The first time the pass is used, the farebox shall encode and print on it the date of first use and the date on which the pass shall expire and no longer be valid. For all subsequent uses, the pass shall function as a read-only document.

3.1.11.3.2 Conditional Use Passes

A subset of all passes shall be conditional use passes such as "off-peak only," "peak only," and "anytime" passes. Peak hours shall be definable by BCT through the data system, and typically involve two time windows, one in the morning and one in the afternoon. "Off-peak only" passes shall not be valid during peak hours, while "peak only" passes shall be valid only during peak hours. "Anytime" passes shall be valid at all times.

3.1.11.3.3 Operation

Provider shall ensure that when a pass is processed, the farebox:

- Determines that the card has been properly read. If a misread is detected, the driver's information display shall indicate "MISREAD" or other message and a distinctive tone shall sound.
- Checks the pass's validity period. If the pass has not yet become valid, the display shall indicate "INVALID" or other similar message. If the expiration date has passed, the display shall indicate "EXPIRED" or other similar message.
- Checks for passback (same card previously used in the farebox within a pre-programmed time, typically 30 minutes). If the card's serial number is found in the passback file, the display shall indicate "PASSBACK" or other similar message.
- Checks whether the card serial number is on the previously downloaded bad-number list (stolen or otherwise invalidated cards). If the swiped card number is found on the bad-number list, the display shall indicate "BAD PASS" or other similar message.

Provider shall ensure that:

- If the card passes all the preceding tests, the farebox sounds a "pass accepted" tone, registers the fare in memory, and displays the pass type (such as "MONTHLY" or "WEEKLY." The card's serial number shall be added to the passback list.
- In the event a reduced fare pass is used, an appropriate message such as "STUDENT," "SENIOR," etc., appears on the driver's information display once the pass is validated.

- BCT is be able to restrict use of a student pass to weekdays.
- The farebox shall records in memory the quantity of each pass type processed, e.g., full, senior, student, etc.
- Acceptance of magnetic stripe cards is subject to control by the driver's keypad and requires the insertion of money in the farebox, as in the case of reduced fare passes for seniors or students.
- Passes are encoded with the date of issue and the date of expiration. Passes used prior to the date of validity or after the expiration date shall not be valid.
- The card reader shall function as a "read only" device and does not alter any of the encoded information on the pass.

3.1.11.4 Passback Check

Provider shall ensure the farebox checks for re-use of a magnetic pass within a preprogrammed time, typically 30 minutes, on the same bus (passback). If the card's serial number is found in the passback file, the display shall indicate "PASSBACK" or other similar message and the pass shall be rejected. The passback list shall have a capacity of at least 50 pass numbers.

3.1.11.5 Bad Number List

Provider shall ensure the farebox logic has the ability to check whether the serial number of a card being processed is on a previously downloaded bad-number list (stolen or otherwise invalidated cards). If the card number is found on the bad-number list, the display shall indicate "BAD PASS" or similar message and the card shall be rejected. The bad number list shall have a capacity of at least 20,000 individual cards.

3.1.11.6 Adding Value or Rides to a Card

Provider shall ensure:

- The farebox permits value to be added to a previously obtained stored value or stored ride card by the insertion and validation of bills and/or coins into the farebox bill validator.
- The driver has the ability to press a prescribed key or sequence of keys to prepare the farebox for an add-value or add-ride transaction, following which a passenger desiring to add value or rides to a card shall be able to insert the card in the farebox, followed by the insertion of bills and/or coins.
- The driver display and passenger display indicate the amount currently on the card, the amount inserted, and the total on the card if the add-value or add-ride transaction is accepted.
- Once the desired amount of bills and/or coins has been inserted, the passenger is able to press a key to instruct the farebox to encode the card to reflect the added value or rides and register the transaction in farebox memory.

3.1.12 Passenger Indications

3.1.12.1 Passenger Display

Provider shall provide the farebox with a passenger display, which is mounted on top of the farebox in proximity to the coin and bill slots. The display shall be a backlit color display consisting of at least four lines of 20 alphanumeric characters each, with each character a minimum of 2.95mm wide by 4.75mm tall, and shall be easily viewable by a passenger paying a fare.

Provider shall ensure that:

- When the farebox is in "ready" mode, the passenger display cycles through various instructional messages. These messages shall automatically adapt depending on the operational status of the farebox (example: if the coin validator or bill validator is out of service).
- When a cash transaction is initiated, the display shows the amount deposited and the amount of the fare.
- When a transaction involving a magnetic fare document, smart card or bar coded ticket is initiated, the display shows relevant information, e.g., the amount of rides/value deducted and remaining when a stored ride/value card is used. In the event a transaction fails, the display shall show the reason for failure, e.g., INVALID, EXPIRED, BAD READ, etc.

Provider shall equip the passenger display with a minimum of four buttons near the display, which shall enable BCT maintenance staff to quickly query the farebox for specific information, including card stock level and firmware versions, among other information. Each button shall be easily accessible by the passengers and shall show the passenger what each button denotes on the screen. The buttons shall prevent the ingress of any spilled liquids into the top be of the farebox.

3.1.12.2 Audio Signals

Provider shall equip the farebox with an audio transducer which shall be used to emit different sounds to indicate the status of a transaction and other farebox operations. At a minimum, two tones shall be provided: a continuous tone (beep) to indicate that a fare has been paid with proper documents or media, and an intermittent tone (warble) to indicate a failed transaction due to an invalid card/ticket or other cause.

Provider shall ensure the farebox is capable of generating spoken messages using a digitized human voice and must be able to enable or disable the spoken messages via the System. Spoken messages shall be triggered by defined farebox operating conditions, (e.g., "transfer not valid" or "please swipe card again"). Provider shall equip the farebox with a list of standard spoken messages, from which list BCT can choose and assign messages to relevant farebox actions.

3.1.13 Operator Control Unit

3.1.13.1 General

Provider shall furnish the farebox with an operator control unit ("OCU") equipped with a keypad and display to operate the farebox. The OCU shall not be integral to the farebox but shall be housed in

a separate compact console constructed of high-impact plastic with no sharp edges or corners. Provider shall furnish appropriate hardware to permit the OCU to be mounted on the bus dashboard, a stanchion, or the driver's side of the farebox, as may be required by the configuration of a particular bus. Provider shall ensure the installed position does not interfere with any bus controls, blocks any bus indicators, or creates a safety hazard. The OCU mounting must be adjustable to allow each operator to achieve the optimal viewing angle. Once adjusted, the mounting hardware shall not allow the OCU to rattle or become loose as a result of shock and vibration encountered during normal bus operation.

Provider shall ensure the OCU is connected to and communicates with the farebox via cable(s). During normal operation, the driver shall be able to operate the fare collection system without having to view or touch the farebox or fare media.

3.1.13.2 Driver's Display

Provider shall provide the OCU with a display measuring three inches high by five inches wide (3"x 5"), or other dimensions approved by BCT, that would allow the driver to easily read what is on the display. The display shall be capable of showing text and graphics filling the full viewing area and show text in a variety of fonts, sizes, and orientations. Display contrast shall be adjustable. The display shall be of sufficient brightness to be visible in all forms of ambient lighting within the vehicle. The display shall be protected by a panel of clear plastic with a matte finish to reduce glare.

3.1.13.3 Display Indication

Provider shall ensure:

- The display is capable of indicating to the driver the status of any ongoing transaction and other information pertinent to the operation of the farebox, including:
 - The amount of money inserted into the farebox in the form of coins and bills.
 - The status of any transaction involving electronic fare documents.
 - The current function of the re-definable function keys, described below.
 - The quantities stored in the various farebox data registers.
 - The function of a given numeric button on the keypad when that button is depressed.
 - Confirmation for any driver input information.
- A portion of the display is reserved for information pertaining to the current transaction, including the amount of cash inserted. This part of the display shall be known as the "driver's digital display." Initially, the driver's digital display shall show "0.00." As coins and bills are inserted, this display shall count upward, reflecting the amount of money inserted. When the full fare is reached, or when the driver presses a button indicating acceptance of a reduced fare (student, senior, etc.), the "fare accepted" tone shall sound, the appropriate data registers shall be incremented, and the digital display shall automatically reset to "0.00."
- If a transaction is not completed, the driver's display automatically resets to "\$0.00" after a programmable amount of time after the last coin has been inserted. This may be between 15 and 30 seconds, and must be adjustable by BCT. Any numeric value indicated on the

display when this occurs is added to the "unclassified revenue" data register. It shall be possible to delay resetting by pushing a designated "hold" button.

3.1.13.4 OCU Driver Pushbuttons

Provider shall ensure that:

- The OCU keypad includes, at minimum, the digits 0 through 9, and a combination of letter, arrow, or other type of function keys that can be used to assist the driver in quickly and easily operating the farebox.
- The keys are of durable silicon rubber.
- Where the keys are marked, they are hot molded with the markings with filled characters. Surface printing is not acceptable.
- Keys are rated for a minimum of 500,000 keypresses.
- The keypad enables the driver to classify reduced or special fares and perform other tasks connected with the operation of the farebox.
- Each of the numeric and function keys on the keypad are configurable by BCT personnel to:
 - register a specific preset value \$0.01 to \$99.99;
 - increment a zero-value tally counter; or
 - be disabled (nonfunctional).
- The fare values assigned to each numeric or function key are individually programmable for each fare set activated by the driver and one or more of the buttons is capable of having a different value assigned.
- Each time a numeric keypad button is pressed, the driver's information display indicates the key number pressed and shows the value assigned to that button.
- When the farebox is in "ready" mode, the eight function keys show the most commonly used reduced-fare presets and farebox operations, with appropriate indications shown on the OCU display such as CHILD or SENIOR. The information display must continue to secondary information display screens by means of a single keypress.

3.1.13.5 OCU Operation

Provider shall ensure:

- A driver is able to press pushbuttons used to register a cash fare before, during, or after the insertion of money in the farebox to obtain the proper count.
- Pushbutton keys used as tally counters require no money to be inserted to obtain a count.
- Each time a pushbutton is depressed in the proper manner, a tone sounds indicating that a count has been made in the corresponding farebox data register.
- The operation of the farebox is not impacted when and if a pushbutton is disabled.
- The OCU display and keypad provide the ability to perform tasks, such as driver logon and logoff, creation of "route/run" records, and review of the contents of the farebox summary data registers and allows use of the display and keypad in connection with farebox maintenance.

- Prompts and menus are shown on the display to aid the driver or maintenance technician in performing such tasks.
- At a minimum, the OCU provides the following screens:
 - Logon screen to permit driver ID, route, run, trip, fare set, and similar information to be viewed and modified.
 - Maintenance screen to permit automatic sequence testing to be initiated and other maintenance tasks to be performed.
 - Farebox data review screen to permit the contents of the farebox summary data registers to be viewed.

3.1.14 Farebox Logic

Provider shall provide the farebox with programmable electronic logic to monitor and control operations. The farebox logic shall have the ability to record and store transactional and other operating data and upload it to the System.

If external power is interrupted, the farebox logic shall have the ability to automatically reload software from memory and resume normal operation (“reboot”) within one second from the time at which normal power is restored.

Provider shall ensure that a transaction in progress when external power is lost shall resume from the point of interruption when power is restored and shall continue without interruption. Modification of existing bus power shall not be required to resume interrupted transactions.

3.1.15 Fare Registration

Provider shall ensure that:

- Upon determining that an inserted item is a valid fare medium, the coin validator, bill transport, card reader, MCPU, smart card processor and/or bar code processor sends appropriate signals to the farebox's electronic logic. As each transaction is completed, the electronic data registers in the farebox shall record the following:
 - The total value received by the farebox since it was last probed.
 - The total value received by the farebox since installation or clearing of the farebox memory.
 - The total value of paper currency received since the farebox was last probed.
 - Count of tokens received since the farebox was last probed.
 - Fare transactions by type, including transfers accepted and issued.
- A separate "unclassified revenue" register is used to record the accumulated value of all cash displayed on the driver's digital display but not counted toward a completed and classified transaction.
- The farebox is able to identify and record the use of a minimum of forty-eight (48) non-cash revenue items. These items will be used to record fare products such as Tickets, Tokens, Magnetic Passes, Smart Cards or Bar Codes. Each time one of these fare products

is recognized by the farebox the farebox logic shall add one count to the tally for that category. The farebox shall beep to indicate that a fare has been paid.

- Summary farebox data is available for review via the OCU display.
- All data, summary and otherwise, is uploaded to the System computer during data probing for use in the preparation of management reports.
- The farebox is able to retain data in the non-volatile portion of its memory for at least 15 days after being removed from power. Lead-acid batteries, which may leak, shall not be used for this purpose.

3.1.16 Transactional Database

Provider shall equip the farebox with the functionality necessary to support a transactional database in which selected farebox transactions and/or events shall be individually time-stamped and recorded in farebox memory for uploading to the GDS during routine probing. BCT must have the ability to choose new configurations and make modifications to previous configurations for the farebox to provide recording for the following:

- Events only (e.g., farebox probed, cashbox door open, route/run record created)
- Events and non-cash fare transactions
- Events and both cash and non-cash fare transactions.

Provider shall ensure the farebox captures the serial number of the document used in any fare card transaction and reports it to the System and tracks all uses of a given card, category of card, or employer account for any time period, route, etc. Each transaction shall be individually recorded in such a way that it is possible to determine day, time, route, and run for each fare paid.

3.1.17 Fare Table

Provider shall ensure that:

- The farebox has a minimum of two (2) fare tables programmed into its electronic logic, one active and one pending. Each fare table shall consist of a minimum of 10 (ten) fare sets. Each fare set shall consist of a predetermined full fare plus various reduced fares. When a given fare set is used, the farebox shall count up and display the amount of inserted cash until the full fare is reached, at which time the fare shall register automatically. Within a given fare set, BCT shall be able to specify different fares for the various passenger categories for each type of fare medium in use and establish different fare sets for different classes of service, such as local, express, shuttle, holiday or promotional fares. The driver must have the ability to switch fare sets at any time via keypad entry. Switching the fare set, shall automatically cause the creation of a route/run record in farebox memory.
- BCT is able to program the pending fare table to become active and replace the previous fare table at a predetermined time and date.
- The fare table is stored in non-volatile memory in the farebox and is programmable via the keypad using appropriate devices and authorization codes or via the System as described below. Either of these methods shall be usable alone, without the use of the

other. Reprogramming shall not require the physical replacement of parts within the farebox.

- The fare table is maintained via the System and automatically downloaded to the farebox whenever the farebox is probed.

3.1.18 Farebox Diagnostic Reporting

Provider shall design the farebox and its electronic logic to provide trouble reporting and self-testing and diagnosis for the following:

- Automatic Sequence Testing.** The farebox logic shall be capable of sequentially exercising the coin validator, bill transport, MCPU, driver's display, passenger display, and audio transducer. Automatic sequencing shall be initiated by insertion of a test plug. Each assembly shall be exercised a minimum of four times during the automatic sequence. The testing sequence shall continue until the test plug or similar device is removed. The amount of time during which the testing sequence was run shall be recorded by the farebox in terms of minutes and seconds. This time shall be available for display on the information display.
- Preventive Maintenance Report.** The farebox logic shall track the operation of farebox modules requiring preventive maintenance. When the number of operating cycles for a given module reaches an agency-programmable threshold, the farebox shall generate a maintenance alarm. The alarm shall be transmitted to the System on probing for use in generating management reports.
- Power Supply Monitoring.** The farebox shall monitor and report the number of times the primary power source has gone to zero (0) volts and back to normal, indicating an intermittent power line, poor ground, or faulty switches.
- Security Door/Cashbox Alarms.** An alarm shall be recorded in the farebox memory if the cashbox door is open longer than a programmable period (typically three minutes) or if the time the cashbox is removed exceeds a programmable period (typically three minutes) from the time the farebox is probed. Both alarms shall be uploaded to the System the next time the farebox is probed. The alarms shall indicate the time of occurrence, duration (how long the door was open, how long between cashbox removal and probing), and the amount of money then in the cashbox.
- Cashbox Full Indicator.** The driver display shall indicate when either the coin or the bill compartments of the cashbox reach 80% of capacity and when they reach 100% of capacity. Once the cashbox is extracted, the coin and bill compartment registers shall be automatically set back to zero.
- Coin/Bill Totals.** The farebox logic shall provide counts for each type of coin and token processed. This is above and in addition to the requirements for cumulative value described above. The farebox shall also provide a count of bills and magnetic fare documents processed.

3.1.19 Route/Run Segmenter

Provider shall equip the farebox with a means that permits the driver, by pressing buttons on the keypad, to make a route/run record in the farebox memory reflecting accumulations in the data registers since the last route/run record was created. The farebox shall have sufficient memory to permit the creation of approximately 250 such records, whose length shall be not less than sixty (60) numbers ranging from 3 to 6 digits each.

Provider shall ensure that:

- The information stored in the segmenter is not accessible through the information display, but only available for transmission to the System computer.
- Data is not available to the driver for editing in any fashion.
- To create a primary route/run record, the driver must press specific buttons in a prescribed sequence to cause the log-on screen to appear on the OCU display. The driver shall then have the ability to change route, run, trip, or other information using the OCU keypad. If the driver does not enter a new number, the previously entered number shown on the display will be used for the new route/run record.
- A new route/run record is created automatically at set intervals based on the real time clock in the farebox. The default time period shall be for a one hour increment. Route/run records are automatically created whenever any of the following events takes place:
 - The driver, route, or run number is altered.
 - The driver pushes the prescribed buttons in the prescribed sequence to create a route/run record.
- Route/run records are also created when any of the following events take place, stamped with a special code indicating the type of event that took place:
 - Midnight
 - The farebox is placed in bypass
 - The farebox is removed from bypass
 - The cashbox is removed
 - A cashbox is inserted
 - The electronic key is used (key number shall be saved)
 - The cashbox access door has been opened at other than the time of normal data probing
 - The cashbox access door has been closed at other than the time of normal data probing
 - The farebox is probed
 - The farebox internal clock fails
 - The route/record memory capacity is about to overflow
 - Changing from one fare set to another.
- The farebox contains a real time clock which stores the time at which the route/run record was created and stored. This clock shall record hour, minute, and date. Each time a route/run record is made by the driver the farebox shall sound a tone indicating completion of the event.

3.1.20 Operator Logon/Logoff

Provider shall ensure that prior to the start of service, the farebox is disabled and remains disabled until the driver has logged on through the existing CAD/AVL, or manually using the OCU. When the farebox is logged off, any inserted coins shall be directed to the coin return cup, no bills shall be

accepted, no magnetic tickets shall be read, and no optional smart cards shall be processed. However, the OCU keypad and display shall be functional.

Provider shall ensure the driver is able to log on manually through the farebox OCU by pressing a prescribed sequence of keys on the OCU to cause the logon screen to appear on the display. The logon screen shall show the driver, route, run, and trip numbers and other pertinent information. The driver shall log on by entering the appropriate data using the OCU keypad and pressing a prescribed key or keys. This shall register the logon in farebox memory, following which the farebox shall be ready for service.

Driver logoff shall occur when:

- The driver presses the appropriate sequence of keys on the OCU keypad;
- Four hours (programmable) elapses without activity;
- The farebox is probed;
- The internal power switch is turned off.

3.1.21 External Interfaces

Provider shall ensure the bus fare collection system has the ability to communicate with compatible external devices for purposes of data exchange and integrated operational functionality. Provider shall design the external communication architecture in conformance with open systems standards and the external communication architecture shall be free of non-standard, proprietary technology. The fare collection system shall support the following interfaces:

- J1708/1587
- CAN Bus Expansion
- CAN–External 1939
- Ethernet –connected to on-board mobile router for 3G/4G communication with the Garage Data System (GDS)
- Wi-Fi 802.11 b/g

Provider shall ensure that, utilizing one or more of the interfaces immediately above, the farebox is able to, at a minimum, communicate with J1708/1587-compliant third party devices. Provider shall furnish the farebox with functionality to support:

- Single-point logon to enable the vehicle operator to log on to all on-board devices from a single control console. The farebox shall have the ability to accept and process logon information from a J1708-compliant third-party device, and shall be capable of transmitting logon data to such devices.
- Geotagging of farebox transaction and event records using location data (either latitude/longitude or bus stop number) transmitted by a third-party J1708-compliant automatic vehicle location (“AVL”) system.

3.1.22 Data Transfer

Provider shall furnish the farebox with a non-contact data port to permit high-speed communication between the farebox and the GDS, which communication includes, but is not limited to, the

uploading of farebox transaction and operating data, stored in memory, to the GDS computer and the downloading of the fare table and other configuration parameters from the GDS computer to the farebox memory.

Provider shall ensure that the data probing system ensures that the bus is at the service island when the cashbox door is opened and provides a positive indication to the garage service technician (vault puller) that data exchange has occurred. The data port shall be an integral part of the farebox. When infrared technology is used, Provider must position the data port so as to allow for easy interface by a probe operator.

Provider shall use wireless probing to allow for the transfer of data between the fareboxes and the garage data system (GDS) via a wireless (WiFi) communications path. Provider shall ensure that fareboxes communicate with the GDS at pre-set intervals or on demand, and Provider must have safeguards in place to prevent excessive bus battery drain.

3.1.23 Cashbox

3.1.23.1 General

The cashbox shall be rectangular to fit within the cashbox compartment in the lower portion of the farebox. The cashbox shall have two separate compartments, one for coins/tokens and one for bills.

The cashbox shall have a useful interior volume of not less than 580 cubic inches and shall be capable of holding approximately \$500 in mixed coins and a minimum of 600 items of U.S. paper currency in unfolded "street" condition (not "brick" or mechanically stacked or compressed) or paper equivalent.

The separation of bills from coins shall be positive. When empty, the cashbox shall weigh no more than 18 pounds. Provider shall furnish the cashbox with a handle to permit its being carried by a person with a gloved hand. Provider shall ensure that the cashbox can be removed only upon opening the cashbox access door in the lower portion of the farebox by activation of the electronic lock.

3.1.23.2 Construction

The cashbox shall be made of stainless and plated steel, 20 gauge minimum. It shall be of welded construction with no exposed external fasteners. The parts of the cashbox that come in direct contact with the farebox shall be abrasion-resistant. Rough service shall not cause the cashbox to become distorted.

Provider shall ensure:

- The cashbox is designed and fabricated in such a manner as to prevent extensive tolerance buildup and resultant vibration that could be detrimental to proper operation of the cashbox.
- The cashbox functions in a dependable manner in the transit environment.

- The mechanism and operation of the cashbox is positive and at no time during the collection or transfer of revenue exposes the interior of the cashbox or its contents.
- The cashbox fits into the farebox in a unique position and is placed into the ready position to collect revenue by a single continuous motion.
- The farebox remains inoperable until the cashbox is properly inserted and ready to accept revenue, and the cashbox access door is closed and locked.
- The cashbox has no lids, covers or other elements that may be detached from the cashbox.
- The operation of the cashbox is locked and sealed unless it is in a farebox or receiver for revenue transfer.
- There is no unauthorized means of gaining entry to the cashbox other than physical destruction of the cashbox, which shall be immediately noticeable through visual inspection.
- The locks and keys used on the cashbox are of the high security type. The operation of any keys within the locks shall not require excessive torque that would damage either the key or the lock.
- The mechanism employed to open and/or close the cashbox is positive and smooth in operation.
- Internal locking mechanisms are of strong and durable materials. The term "internal locking mechanisms" refers to all components, including levers, slides, cams, etc., that are required to release the cashbox from the farebox or lock it in place in the farebox.
- The interior of the cashbox affords gravity discharge of the contents during revenue transfer, while maintaining separation of coins and bills.
- There are no ledges or other areas where coins, bills or other fare media may lodge or impede the operation of the cashbox.
- A permanent serial number is inscribed on the cashbox in such a way that it is visible when the cashbox is in the farebox and the access door is closed and locked.

3.1.23.3 Cashbox Identification

Provider shall fit the farebox with a device to automatically read a minimum of four (4) digit serial identification number on the inserted cashbox. Identification numbers in the cashbox shall be stored in a way that does not use batteries. The method employed shall not require electrical contacts, plugs or other physical connections between the farebox and the cashbox. Reading of the cashbox ID number shall be automatic and continuous while the cashbox is installed. The cashbox ID number shall be stored in the farebox memory for subsequent data transmission. The System shall have the capability of inventorying the numbers of all cashboxes in the System.

3.1.23.4 Cashbox Access Door – Electronic Lock

Provider shall ensure that:

- Each farebox has a cashbox access door built into its lower portion that protects and conceals the cashbox within. The door shall have a full-length hinge on one side and four catch points on the opposite side. The door shall have a small opening on it so that the presence of a

cashbox may be observed. The door shall fit to the farebox using a labyrinth arrangement to deter prying.

- The cashbox access door is fitted with an internal electronic locking device that permits the door to open in the following manner: When a data probe is interfaced with the farebox, the security code is transmitted to the farebox. If this number exactly matches the number previously stored in the farebox, the farebox releases the locking pins on the door. The door then opens, permitting the cashbox to be removed.
- The farebox logic has the ability to retain a specific five digit security code number. This number shall be modifiable by BCT at any time by downloading from the System under authorized conditions.
- Closing the cashbox access door and holding it in the closed position for approximately one-half (0.5) second causes the locking mechanism to engage the door pins and lock the door. If the door is slammed, with rebound, the mechanism shall not engage.

3.1.23.5 Portable Electronic Key

Provider shall provide BCT with a portable electronic key to enable BCT to open the cashbox access door in an authorized manner, as an alternative to the data probe. Each time a portable electronic key is used, the farebox shall record the key's serial number for subsequent uploading to the System.

Provider shall ensure the electronics module contains the memory needed to receive and retain the unique code number used to unlock the cashbox access door. The portable electronic key shall be of all metal, water-resistant construction. It shall be sufficiently protected to withstand use in an outdoor service lane in all types of weather.

3.1.24 Farebox Construction

3.1.24.1 Mechanical Details

Provider shall use the highest degree of security in the design and manufacture of the farebox and the cashbox to discourage vandalism and theft. There shall be no seams or openings that would admit pry tools or permit removal of money in an unauthorized manner. Finishes shall resist corrosion. All exterior surfaces shall be clean and smooth with all corners rounded. There shall be no exposed bolt heads, nuts, sharp edges or cracks on the outside surfaces. Provider shall ensure the farebox is constructed with the following characteristics:

- a. Top Cover.** A top cover made of durable materials shall be provided on the upper portion of the farebox to house the entry bezels for coins, bills, and magnetic documents and allow maintenance access to the interior of the farebox. The surface of the cover shall be free of chips, blisters and other imperfections that may lead to chipping of paint or unattractive appearance. The top cover shall have affixed to it, by means of high yield adhesive, multi-color decals showing how to use the various fare media entry bezels. The top cover shall be secured to the farebox by means of a continuous hinge and a high security lock.
- b. Upper Portion of Farebox.** The upper portion of the farebox shall consist of a sheath made of stainless steel having an orbital satin finish, not less than 14 gauge. It shall be suitably reinforced

for rigidity and have no external and/or removable fasteners that would provide access to the interior of the farebox. The upper portion of the farebox shall contain an opening to permit retrieval of returned coins, and the viewing of magnetic fare document stock.

- c. **Lower Portion of Farebox.** The remainder of the farebox housing shall consist of a cabinet made of stainless steel with a satin finish. The material shall be not less than 14 gauge, reinforced for rigidity. The compartment housing the cashbox shall have a door attached by a full length hinge and secured a locking mechanism, actuated by a high security lock mounted adjacent to the door. There shall be no gaps which would allow the door to be easily pried or broken open. Breaking into the farebox shall entail damage so extensive so as to be easily noticeable. Keys and/or locks that are captive to the lower portion of the farebox and used to interface with the cashbox shall be securely fastened and removable only in an authorized manner. Guides shall be employed within the cashbox compartment to assure that the cashbox is properly aligned. Wires and cables which are run through the lower portion of the farebox to the upper portion shall be run in a protected channel and/or raceway. No wires shall be visible inside the cashbox compartment.
- d. **Base Plate.** The bottom of the farebox shall have a base plate to permit mounting to the bus floor. The dimensions and construction of this base plate shall provide the necessary lateral stability for the farebox without secondary anchorages. The base plate shall be affixed to the floor by means of carriage bolts from the interior of the bus, with the washers and nuts on the underside of the floor. The base plate shall be made of cast aluminum, suitably ribbed for added strength.

The lower part of the farebox shall be suitably designed and reinforced to prevent deformation in service, deterioration or loosening that would subject the farebox to increased vibration, wear, metal fatigue or other stress.

The upper and lower portions of the farebox shall be securely fastened together by means of high yield bolts, accessible only from the interior of the farebox. The completed farebox assembly shall measure not more than forty-three inches (43") high, or optionally thirty-six inches (36") or thirty-one inches (31") high, as measured from the bus floor, and not more than twelve inches (12") in cross section.

- e. **Modules.** The principal internal components of the farebox, including the coin validator, bill transport, swipe card reader, MCPU, smart card processor, bar code reader and main logic board, shall be modular in construction, consisting of self-contained units with polarized quick-connect electrical fittings to permit rapid removal and replacement.

The coin validator shall be a self-contained module which may be removed and replaced within two (2) minutes by a trained technician.

The bill transport shall be a self-contained module which may be removed and replaced within one (1) minute by a trained technician. It shall be built of sheet steel for rigidity, provided with

captive fasteners and be self-aligning upon insertion. It shall be capable of being locked within the farebox. There shall be no protrusions on which bills may snag, which could cause a jam.

All major modules including the coin validator, bill validator, bill transport, coin escrow, cashbox, circuit boards, upper case, and lower case shall be marked with unique serial numbers.

- f. **Baffles.** The farebox design, and in particular the chutes and mechanisms directing coins and bill to the cashbox, shall employ baffles and/or special geometry to prohibit access to or tampering of the cashbox upon removal of the coin or bill module from the farebox enclosure.

3.1.24.2 Electrical Details

Provider shall ensure the farebox meets the following electrical details:

- a. **Printed Circuit Boards.** Farebox electronics shall be of the solid state type, assembled on glass/epoxy printed circuit boards. These boards shall be modular (plug connected) and removable for inspection and/or maintenance. The components mounted on the board shall be soldered in place except for items intended for ready removal, which shall be seated in high quality sockets. Where electronic circuit boards are to be inserted and/or removed by means of board guides, they shall be provided with lifting tabs. All circuit boards shall be provided with polarized plug connectors. No harness wiring shall be directly connected by means of solder to any board which is intended to be removed for maintenance or inspection. All printed circuit boards shall be conformal coated to resist the effects of moisture. All circuit boards shall be factory pretested under power for a minimum of 24 hours prior to final inspection within the farebox. All segments of the electronic displays shall be tested for a minimum of 24 hours.
- b. **Connectors.** The farebox shall be connected to external bus power by means of a polarized, snap connect plug on the underside of the farebox. All major electrical/electronic subassemblies and devices shall be connected to the farebox by polarized positive plug connectors. Electrical contacts shall be made of durable materials. Wires and multi-conductor cables, where used, shall be color coded and/or marked to permit positive identification. Connectors shall be of the positive engagement type and be resistant to unplugging under conditions of vibration.
- c. **Switches and Fuses.** Fuses or other protective devices shall be used to protect the electronics, motors and other components from overload and damage. A master disconnect switch shall be provided inside the farebox to disconnect the farebox from external power. This switch shall be of the on-off type and shall be clearly marked.
- d. **Power Supply.** The farebox power supply shall be large enough to provide adequate power to the various farebox components and for any optional equipment required to operate the farebox and related components. The farebox electronics shall provide under-and over-voltage protection. The complete loss of power to the farebox shall not cause any data contained in electronic memory to be lost or altered. The electronic memory shall be capable of retaining data without bus power for a minimum of 15 days.

- e. Protection.** The farebox electronics shall be protected against electromagnetic interference (EMI), vibrations, ultraviolet light, or other environmental conditions that would cause the farebox to become inoperative and/or lose data.
- f. Counting Precedence.** The farebox logic shall give the counting of inserted coins or bills precedence over any other function, except security functions. The farebox processor shall be active at all times, requiring no manual intervention to start.
- g. Ventilation.** Electrical and electronic components shall be arranged to permit adequate ventilation to prevent heat buildup.
- h. Access.** Maintenance access to the electronics, power supplies, and other electrical components shall not require removal of the cashbox from the farebox or the removal of the farebox from the bus.

3.1.24.3 Locks and Keys

Provider shall ensure all locks and keys used in the farebox shall be of the high security type.

Security keys shall be registered by the Provider to BCT. Only authorized and registered BCT personnel shall have the authority to order new or additional keys from the Provider. The lock and key used for the cashbox shall be of the rare earth magnetic type, in MIWA brand, or BCT approved equal. This key shall not resemble a common house key in overall appearance, and shall not be removable from the farebox without incurring damage.

The lock and key used for maintenance access to the farebox shall be a high security pin and tumbler lock, in Medeco brand, or BCT approved equal.

3.2 Cashbox Vaulting System

Provider shall integrate the System with the existing cash vaulting system at BCT and ensure that:

- Revenue deposited into the cashbox in each farebox is transferred to a through-wall vault consisting of the following components:
 - A cashbox receiver, which shall accept a cashbox and by means of a mechanism operated in a secure manner allows opening of the cashbox and discharge of its contents (coins and bills) into separate compartments in the vault below.
 - A vault of the through-wall type, installed in the counting room and built into an exterior wall so that the cashbox receiver is accessible from the vehicle service lane. A mechanism operated in a highly secure manner will allow insertion of a cashbox into the cashbox receiver from the service lane, unlock and open it, and discharge its contents into two separate compartments in the vault below, one for coins/tokens and one for bills.

Revenues collected from the vault are removed through doors accessible from inside the counting room.

- The vault system's security features are primarily mechanical in nature and do not rely on external electric power to maintain the security of the collected revenue. Loss of external power shall not impair revenue security or the ability to continue vaulting operations. The vaulting system shall be service-proven.

3.2.1 Environmental Conditions

Provider shall ensure the garage equipment operates without any degradation of performance, corrosion, deterioration or abnormal wear under the following environmental conditions:

Temperature Range	0° to +120° F ambient temperature; surfaces may be heated by direct sunlight to +150° F
Humidity Range	5 percent to 95 percent R.H. (non-condensing)
Precipitation	Exterior condensation and icing effects, plus wind gusts of up to 50 mph
Contaminants	Airborne dust particles, diesel oil, lubricating oil, diesel engine exhaust
Interference	EMI from bus equipment and other electrical equipment in the vicinity.

3.2.2 Cashbox Receiver

Provider shall ensure the System is integrated with the existing cashbox receivers at BCT and that:

- The receiver permits the cashbox to be inserted in a unique correct position, and positively guided in and out, for revenue transfer. The receiver is equipped with a heavy interlocked door. Once the door is closed and locked, an internal mechanism operated by a crank opens the cashbox and securely transfer the contents into the dual compartments in the vault below. The receiver door remains locked until the revenue transfer process is complete. At no time during normal operation is the interior of the cashbox or the vault to be visible or accessible in any way.
- The revenue transfer process is manual in operation, requiring no electrical devices or components. In the event of power and/or battery failure, the transfer of revenue must continue operation in a secure manner.
- The receiver functions as follows: When the receiver door is open, the receiver mechanism and operating crank does not operate. Revenue shall not be transferred from the cashbox to the vault until the cashbox has been properly inserted in the receiver and the receiver door has been locked closed. Once the receiver door is closed, the operator may begin turning the receiver crank, which shall cause the receiver door to lock. The crank shall not be reversible once the operator has begun to turn it; a full revenue transfer cycle must be completed before the cashbox can be removed. The cashbox shall open and

emptying shall take place only when the crank is fully turned and all other interlocking conditions have been satisfied. At this point, a time delay shall be instituted to afford complete gravity discharge of the cashbox contents. This time delay shall be factory set for ten seconds and shall be field settable for one to fifteen seconds. At the completion of the time delay, the crank shall be turned in the reverse direction to close the cashbox. When the cashbox is completely closed, the interlocks shall release and unlock the door, permitting the cashbox to be removed.

- The automatic revenue transfer process takes no longer than ten (10) seconds, exclusive of the time delay, as measured from the time the cashbox receiver door is closed until the door is opened.
- The receiver is equipped with a locking device to restrain movement of the operating crank when the receiver is not in use and allows application of a hasp lock.
- All cashbox receivers are of the same dimensions and accept all cashboxes provided to BCT by the Provider.

Provider shall ensure the following:

- Indicators adjacent to the receiver door signify a "ready" condition and a "process" condition. The indicators shall not require electricity; they shall operate even in the event of power failure. In the "ready" condition, shown by a green indication, it shall be possible to open the door and insert or withdraw a cashbox. In the "process" condition, shown by a red indication, the door shall be locked and revenue transfer shall take place. The door shall remain locked until the "ready" indication appears again.
- A mechanical five-digit counter inside the receiver and viewable from the front when the receiver is open. The counter shall indicate the number of revenue transfer cycles the receiver has completed. This counter is not to be resettable from the outside.
- Appropriate maintenance openings, each secured by a high security locking system. Keys to this locking system shall be different from those employed elsewhere in the revenue handling system and fareboxes, and shall be of the high security type.
- All elements of the receiver shall be integral to it; no loose keys shall be used in normal (i.e., non-maintenance) operation. All engagements and alignments shall be positive and automatic.

3.2.3 Through-the-Wall Vault

Provider shall integrate the System with the existing through-the-wall vaults at BCT and ensure that:

- The through-wall vault contains the cashbox receiver described above and has separate compartments for the storage of coins/tokens and bills. The vault shall have two large revenue discharge doors, one for the coin compartment and one for the bill compartment. Each shall be secured by a high security lock.
- During the revenue transfer process, the coins from the cashbox go into the vault coin compartment while the bills remain separated and go into the bill compartment. The

vault shall hold a minimum of \$20,000 in "street" money, \$10,000 in the coin compartment and 10,000 items of U.S. paper currency in the bill compartment.

- When counting room personnel open the vault's coin access door, the coins empty into a bucket, coin conveyor, or other devices as BCT may choose to employ. Coins and tokens are discharged from the coin compartment by gravity; sloped stainless steel bottom surfaces shall aid in this process.
- Bills are stored in a lightweight, open-topped aluminum bin that can be easily removed by counting room personnel and placed on a table.

3.2.4 Mobile Bin Type Vault

Provider shall ensure that the System supports BCT's backup method to the through-the-wall vaulting, and that revenue deposited into the cashbox in each farebox is transferred to a vault of the mobile bin type consisting of the following components:

- A cashbox receiver, which shall accept a cashbox and by means of a mechanism operated in a secure manner to open the cashbox and discharge its contents (coins and bills) into separate compartments in the mobile bin located below the receiver.
- A vault structure, which shall contain the receiver (above) and one mobile bin. It shall be permanently installed at a BCT-specified location, convenient to the vehicle service lane and shall serve as a secure weather resistant housing for the receiver and mobile bin.
- A mobile bin, which shall accept separated coins and bills from the receiver and store them in separate compartments. The mobile bin shall be removable from the vault structure only in a closed and locked condition. The mobile bin must be made removable and transportable to the counting room or bank via BCT-supplied means, where its contents can be removed via security access doors. Bills shall be stored in a lightweight, open-topped aluminum container that can be removed by counting room personnel and placed on a table. Coins shall be stored in a vault compartment with a sloped bottom surface to facilitate emptying. When the bin's coin access door is opened, the coins shall empty into a bucket, coin conveyor, or such other device as BCT may choose to employ.

3.2.4.1 Security Requirements

Provider shall ensure the System supports the following security requirements of the existing mobile bin type vault at BCT:

- Revenue transfer from the cashbox to the mobile bin only begins when all of the following requirements are met:
 - The bin is in position and is properly sealed and locked within the vault enclosure;
 - The bin's cash inlet doors are fully open and ready to accept revenue; and
 - The cashbox has been properly inserted into the cashbox receiver and the receiver door is locked closed

- When a mobile bin is being placed in the vault, the vaults enclosure doors do not lock unless the mobile bin is properly positioned. The enclosure doors may be closed without the presence of a bin; however, in this case revenue transfer from the receiver will be prevented. The bin shall be removable from its enclosure only after all vault openings are securely closed.
- The receiver and vault system retains its security when a jam occurs, except for access by authorized personnel. Maintenance access openings are secured by a high-security locking system. The mobile bin is equipped with a high security locking system to assure that when it is removed from the vault, all revenue input mechanisms are closed and locked.
- When the mobile bin is inserted into the vault, it must allow locking into place, and thereafter allow for removal in an authorized manner. The key(s) used for this purpose shall be different from any others used in the revenue collection process, and shall be of the high security type.

3.3 Data Collection and Reporting System (“DCRS”)

3.3.1 General

Provider shall integrate the System with the existing DCRS at BCT. The DCRS facilitates extraction of operating data from the fareboxes, download of fare tables and System configuration parameters to fareboxes, and provides generation of management reports. The DCRS shall consist of one data system for all fare collection data including Mobile Ticketing and EASY Card transactions. All data shall be the property of BCT and shall reside within BCT. The database structure and any interfaces shall be documented to BCT. BCT shall be allowed royalty-free access to the database tables and royalty-free use of the data and interfaces. BCT may extend such access and use to third parties.

3.3.2 Garage Data System (“GDS”)

The DCRS shall operate with the existing garage data system (“GDS”) at BCT.

The GDS shall communicate with the fareboxes to extract transaction and event data and download operating parameters and related information. The GDS shall communicate with the vault to extract cashbox identification from cashboxes inserted in the receiver. The GDS includes data probes linked to an IBM PC-compatible computer capable of extracting and storing data from the bus fareboxes during routine servicing. BCT shall be able to generate comprehensive management reports using the GDS

3.3.2.1 GDS Components

The GDS shall consist of the following:

- Wired data probes with junction box, supporting poles, lock boxes to secure the probe when not in use, interconnecting cabling, and an isolation box for transient voltage protection.
- Wireless Data Probing System

- Computer system consisting of an IBM PC-compatible computer with display and keyboard, laser printer, and other hardware and software.
- Cashbox ID computer

3.3.2.2 Wired Data Probing

Provider shall integrate the System with the existing wired data probing equipment at BCT. A wired data probe serves as the means to open the farebox cashbox door and serves as a backup to the wireless probing system. It permits bi-directional communications between the farebox and the System by means of non-contact technology. Provider shall replace the existing infrared probes with dynamic probes to support the Fast Fare fareboxes. The dynamic probe shall dynamically adjust the transfer rate to the optimum baud rate for data transfer from farebox to GDS.

3.3.2.3 Wireless Data Probing

Provider shall ensure the wireless data probing complies with the current IEEE 802.11 standard and maintains compliance as versions update and/or change. Provider shall further ensure the wireless data probing provides accurate, interference-free exchange of data between the farebox and the System. The wireless system shall be the primary means of data transfer, with the wired probe acting as a back-up. Provider shall design an effective approach to provide wireless coverage in and around the garage based on BCT bus operations. Provider shall provide and install the appropriate wireless infrastructure to insure that buses are wirelessly probed effectively based on this approach.

3.3.2.4 GDS Computer Hardware

Provider shall integrate the System with the existing GDS computers at BCT.

BCT shall be responsible to ensure the GDS computers meet or exceed the following specifications and components:

- Workstation-class microcomputer with Intel Pentium dual-core processor or approved equal
- 4 gigabytes of RAM
- Two hard drives configured for RAID 1 (drive mirroring)
- 16X or faster DVD RW drive
- One 17-inch-diagonal (or larger) flat-panel color monitor
- Integrated 1000 Mbps Ethernet LAN adapter
- Battery-powered real-time clock and calendar capable of keeping correct time for up to seven days without external power
- Four USB ports
- 104-key Windows keyboard
- Windows operating system or approved equal
- Mouse pointing device
- Multiport serial board

- Uninterruptible power supply in the event of power loss and a minimum 30 minutes of backup power to allow for manual shutdown.

Provider shall be responsible for any updates or upgrades not specified above that are required to support the System.

3.3.3 System Interface

Provider shall use industry standard communication protocols for all devices.

The GDS shall have the ability to interface to the following BCT-provided systems:

- Local area network (“LAN”) via Ethernet
- Wide area network (“WAN”) via TCP/IP.

3.3.4 System Operation

3.3.4.1 General

Provider shall ensure the System supports the following general system operation requirements of the DCRS:

- The DCRS resides on computer equipment installed at BCT and does not depend on connection to the Internet for data probing.
- Operation of computers to generate System reports does not prevent probing of the fareboxes. The hard disk drive shall be capable of storing all of the data from 1,000 fareboxes with maximum route/run records. As new farebox records are added the oldest records on the disk drive shall be automatically deleted. Provider shall ensure the System allows BCT to specify how many days of detailed data and months of summary data are to be saved.
- The System software is written in a standard, commonly available computer language not proprietary to this application. All communications shall be accomplished using standard networking protocols and hardware.
- The System has multitasking capability and is able to accommodate probing, report generation, and other tasks simultaneously. Lockup of one task shall have no effect on concurrent tasks. Data probing shall not be slowed due to operation of concurrent tasks. Reports shall be capable of being generated at any time the system is operational.
- Both summary and detailed farebox data is stored on a password-protected database server to ensure that the original revenue and ridership data cannot be modified. This data shall be capable of being converted to a comma-delimited ASCII file format for export to third-party software.
- The System Software performs automatic backup and allows retrieval of backup files upon request.

3.3.4.2 Farebox Data Probing

Provider shall ensure the System supports the following farebox data probing operation:

- The farebox communicates with the System once it comes within range of the wireless access point(s) at the bus servicing facility. The wireless probing system shall be capable of exchanging data with a bus parked at a specified area, to be determined during the system design phase, at the BCT garages.
- The System provides a visual and/or audible indication when wireless probing has been successfully completed.
- The transmitted data is immediately buffered in the data computer where it is checked for validity. The master list totals from the farebox shall be added to the cumulative registers within the data computer.
- During normal servicing it is not possible to unlock the cashbox door and remove the cashbox until the farebox has uploaded all accumulated operational data to the computer system, downloaded updated configuration parameters, and received an appropriate “unlock door” signal from the computer via the wired probe.
- The wired probing system, when used to exchange transactional data provides a positive visual indication to the revenue service technician at the farebox that probing is in progress, and provides positive visual and audible indications when probing is complete and all appropriate data has been exchanged.
- Probing is be subject to interference from or eavesdropping by third parties.
- Probing of multiple buses simultaneously does not result in longer probing times or degraded performance.

The wireless system shall be the primary means of data transfer, with the wired probe acting as a back-up. The farebox shall have a data port located in a convenient, unobstructed location on the upper section of the farebox as indicated herein. The farebox data transmission circuitry shall be continuously active and looking for a data probe. When a data probe is engaged with the farebox, communication with the data computer shall be immediately established and transmission of data shall commence. When data transmission is complete (typically within a few seconds), the indicator lamp on the data probe shall glow steadily and the farebox shall emit a warble.

3.3.4.3 GDS Computer Operation

Provider shall ensure the System supports the following GDS computer operation:

At the beginning of operations on a given day, the GDS operator is able to determine that the GDS computer and printer are switched on and that paper is loaded in the printer. If the data computer had been previously shut off, it shall automatically load the proper software upon power up and prepare itself to process data without further attention from the operator. The GDS shall then be left for automatic operation. When the operator wishes to print reports, he or she will be required to enter a password on the data computer keyboard and then press a single button. This shall display a menu of reports available for printout. The operator shall then be able to choose which report to print. Provider must ensure the password used to get access to the menu can be changed only by means of a higher level password.

Provider shall ensure the system is capable of recording and reporting, upon interrogation by a user with a high level password, all uses of passwords for the previous 60-day period, the date and time of password use, the amount of time the system was in use with the password, and what reports or other functions were accessed. If it becomes necessary to change the high level password in the computer for security or operational reasons, it shall be readily accomplished via the operator keyboard.

Provider must ensure BCT is able to use the garage data computer to change the fare tables in all fareboxes probed at the garage. These changes may include but are not limited to the full fare value and the values and function of each driver pushbutton. In addition, the time of day shall be transmitted to correct the farebox clock, if required. At the discretion of BCT, changes to the fare tables and farebox clock shall be downloaded to each farebox automatically during routine probing, wired and wireless. All operator entries shall go into a transaction log capable of being printed on demand.

3.3.5 Transactional Database

Provider shall ensure the transactional database is stored in the System in a format that allows interfacing to the Open Data Base Connectivity (ODBC) standard, thereby making it possible to work with the database using ODBC-compliant third-party query and report generation tools.

To maintain the security of the database, all database transactions shall be recorded within the System's audit log. Data shall be stored in a format that is not alterable by general database tools. Provider shall configure the software driver for the ODBC interface in read-only mode and shall not allow the user to modify revenue data directly.

Provider shall integrate all fare information including cash, passes, mobile tickets and EASY Card into one transactional database.

The transactional database shall store the following types of transactions:

- Cash fare. Includes fare type (full fare, pushbutton or ticket/token/pass/smart card/bar code) plus time (minutes and seconds)
- Period pass. Includes serial number, time
- Stored value card/ticket. Ticket/token/pass/smart card/barcode, fare deducted, remaining value, serial number, time
- Stored ride ticket. Ticket/token/pass/smart card/barcode used, remaining rides, serial number, time
- Transfer accepted. Route, direction, serial number, time
- Transfer issued. Key used to issue, time
- Non-magnetic ticket or token processed. Category used, time.

For period pass transactions, the database shall store the following information, at minimum:

- Pass serial number

- Pass type
- Passenger category
- Employer account number, if applicable
- Rejected ticket code indicating reason for rejection
- Pushbutton key pressed.

The transactional database shall record selected farebox events, including all events that cause a route/run record to be created, including:

- Driver log-on/log-off and all intervening changes to trip, fare table, etc.
- Cashbox door open/closed
- Cashbox inserted/removed
- Farebox placed in bypass/bypass reset
- Portable electronic key use
- Power on/off
- Cashbox or memory approaching capacity/full
- Other security and maintenance events

In addition to transaction and event detail, Provider shall ensure the farebox maintains summary counts of the following, all of which must be stored in the database:

- Coins validated, by denomination
- Coins detected and rejected
- Bills validated, by denomination
- Bills detected and rejected
- Swipe reader reads/misreads
- Magnetic card processor reads/misreads/encodes/verify fail/print/issue/jam or mis-feed
- Smart card processor reads/misreads/encodes/verify fail (if applicable).

To ensure the integrity of transactional data, Provider shall ensure that all data uploaded from the farebox is buffered and subjected to a series of validity checks before being used to populate the database. Transactional and aggregate data shall be stored in the farebox until deletion is ordered by the System to ensure data is successfully transmitted before the original is erased.

3.3.6 Fare Table Management

Provider shall ensure the System has the capability of changing the fare tables in the fareboxes per the procedure previously described. Each fare table must assign the value of a full fare as well as any reduced fares (student, elderly, etc.). Each fare table shall consist of up to ten (10) faresets, each consisting of the base (adult) fare plus any special fares (student, senior, etc.). Each individual fare amount may be between \$0.01 and \$99.99. Values shall be modifiable through the farebox keypad or the System without removing or replacing any of the farebox electronic components. The following shall be transmittable:

- Current time and date (any valid time and date)
- Electronic lock code (any 5 digit number)
- Holidays (up to eight valid dates)

- Start/stop times for AM and PM peak periods
- Keypad attributes (tally, tally/clear display, and value increments from \$0.01 to \$99.99)
- Fare table store option (should the System transmit the fare structure to each farebox probed)
- Lock code action (should the farebox unlock the cashbox access door upon probing)
- Transfer acceptance parameters
- TTPSB (ticket/token/pass/smart card/barcode) acceptance parameters and other attributes.

Provider shall further ensure the System has the capability to create and download to the fareboxes two fare tables, one designated “active” and one designated “pending.” The System shall allow users, with authorized permissions, to establish the time and date at which the pending fare table shall automatically replace the previous fare table in the fareboxes and become active.

Provider shall work with BCT to employ the best method of consolidating and identifying possible TTPSB savings to accommodate existing fare type, mobile tickets and EASY Card transactions, and minimize BCT staff involvement needed for configuration by providing easy configuration changes.

3.3.7 Configurable Parameters

Provider shall ensure the System provides an easy-to-use “edit” menu that permits the user to modify the following system parameters:

- Options, including:
 - Agency name
 - Garage name and number
 - End of transit day
 - Number of faresets used
 - Retention period for summary and detail data
 - Cashbox ID, bin ID, electronic lock, print-when-probed enabled/disabled
 - Idle screen revenue display enabled/disabled
- Bad number list
- Bus, driver, route, run, and trip lists

The GDS shall also provide a “tools” menu that permits the user to:

- Query the database using SQL (structured query language)
- Export data in ASCII comma-delimited format for manipulation using third-party tools
- Set idle screen
- Switch users.

3.3.8 DCRS Security

Provider must provide the GDS with robust, flexible security features to prevent unauthorized access to or modification of data. Security measures shall include, but not be limited to the following measures:

- Assignment of a unique user ID and password to every authorized user. Entry of an authorized user ID and password shall be necessary for all system functions other than the basic probing operation, which shall automatically be enabled upon system startup. Use of an incorrect password shall result in appropriate indications such as the message “INVALID PASSWORD.” The system shall be configured to require IDs, passwords, and other agreed-upon input to be entered twice.
- Ability to add, delete and modify the privileges of users at any time. Privileges shall include, but not be limited to:
 - Generate reports
 - Modify the fare table, lock code, or other system parameters
 - Add, delete, and modify the privileges of other users
 - Edit data
 - Review the event log, as described below.
- Creation of “groups” with defined sets of user privileges, e.g., “report operators,” “system operators,” “supervisors” and “administrators.” Individual users shall be assignable to one or more groups and allow creation for an unlimited number of groups. If desired, it shall be possible to assign each user to his or her own group, making it possible to individually tailor security privileges. Alternatively, it shall be possible to arrange the groups in a multi-level hierarchy, e.g., “reports,” “reports and system maintenance,” and “supervisor,” in which each level has certain privileges plus all privileges assigned to lower levels. A default set of groups shall be provided with the system.
- User privileges can be modified only by other users having the appropriate security privileges.
- Any attempt to modify or execute a program on a System computer is automatically recorded in an audit log. The audit log shall be accessible only by authorized users and shall contain the date, time of day, user ID and password, and all functions accessed or actions performed, e.g., report generation, fare table modification, etc. The result shall be a complete, identifiable audit trail leading to the keyboard and operator attempting to make or making program changes, and indicating whether or not these changes are authorized.
- After a user-settable number of minutes of inactivity, an in-use password times out and requires re-entry of the username/password combination to continue. Password databases shall be encrypted so that they are not readable using standard database access tools. Password input shall be masked on the display screen.

3.3.9 Standard Reports

Provider shall ensure that, at a minimum, the following standard reports are available from the System. All reports shall carry the BCT name, the date or period for which data is reported, and

the date on which the report was generated and printed by the system. Provider shall ensure a "user friendly" menu-driven report generating tool is available for report generation.

3.3.9.1 Individual Farebox/Bus Reports

Individual farebox reports shall show the following categories of data, at minimum:

- Current revenue (since last probing)
- To-date revenue
- Unclassified revenue
- Total full fare riders (ridership data shall be supplied for each fare table in use)
- Key 1 - number of riders
- Key 2 - number of riders
- Key 3 - number of riders
- Key 4 - number of riders
- Key 5 - number of riders
- Key 6 - number of riders
- Key 7 - number of riders
- Key 8 - number of riders
- Key 9 - number of riders
- Ticket/Token/Pass/Smart Card/Barcode category 1 through 48
- Total tokens
- Total stored ride/value cards
- Total passes
- Total bills
- Total coins by denomination

The first line of each individual farebox report (the "master list") shall indicate the date and time of day the farebox was probed and the bus number and farebox number. Cumulative totals for the activity of that farebox between probings shall be printed, corresponding to the column headings.

Trip-by-trip route/run data lists shall be shown next. Each route/run record shall be listed in the order in which it was created, along with notations of driver or route number(s) and the time the record was created. The DCRS must provide the ability to transcribe this data from hard disk to other electronic storage medium for archiving or analysis purposes.

3.3.9.2 Daily Summary Report

The DCRS must provide the ability to generate the daily summary report on request at the end of the operating day. Provider shall ensure BCT has the ability to designate the end of the operating day as any time from 12:00 A.M. to 5:00 A.M. so that all buses that have operated on a given day are accounted for, regardless of whether they are probed after midnight. The daily summary report shall contain the same data categories listed above, less any that may be inactive or suppressed. Summary totals from master lists from all fareboxes probed that day shall be provided. Route/run data shall not be provided. The full matrix of fare tables (excluding any

inactive or suppressed tables) shall be listed showing the cumulative total ridership in each cell of the matrix. The daily summary report shall also provide a report of total daily ridership.

The daily summary report shall print a summary of the data from the exception report, indicating the total number of buses probed and not probed, security door and cashbox alarms, bypass alarms, maintenance required (including power supply), memory cleared, unknown driver, unknown bus, unknown route, unknown run and other anomalous data from the exception report. A list of the buses not probed, by bus number, shall also be shown.

3.3.9.3 Periodic Summary Reports

The DCRS shall have the ability to generate summary reports for specific periods, as follows:

- a. Monthly Summary Report:** This report shall summarize all activity fleet wide for a given month. Monthly summary information shall be saved for up to 128 months. Totals shall be given for all active pre-sets and keys, revenue, tokens, bills, fare document types, etc., by day and totaled for the month and allow the printing of bar charts giving total revenue by date and total ridership by date.
- b. Annual Summary Report:** This report shall summarize the information given in the monthly summary report and give totals by week, quarter and year to date and show each value of revenue, pre-set and key plotted by week in a separate bar chart.
- c. Daily Route Summary Report:** This report shall summarize all totals by route for a given day fleet wide.
- d. Monthly Route Summary Report:** This report shall summarize all totals by route for an entire month.
- e. Route/Sum Report:** This report shall allow data over a period of time to be sorted first by route, then by run, or by time/date.

3.3.9.4 Route/Run Summary Report

BCT shall be able to generate the route/run summary report on request at the end of the operating day. The report shall contain the same headings listed above. Summary totals from the route/run lists shall be listed in route number order, beginning with the lowest route numbers and progressing to the highest. Ridership shall also be shown. For each route printed, the number of route run records included in the summary shall be indicated.

BCT shall be able to generate more detailed reports on route/run data, sorting by and printing data for specific routes, runs and/or trips or all routes/runs. The same data as described in the last paragraph shall be listed.

The report shall present the individual route/run lists in order by time, with the earliest trip first; the route, run, trip and bus number shall be shown on each record. The data in the route/run reports shall be based on when the route/run record was actually created (actual date and time), regardless of when the bus was probed.

3.3.9.5 Transactions Report

The transactions report shall provide the ability to track ticket usage either by individual serial number or by group and show all transactions or a monthly usage count summary per ticket number. If all transactions are shown, it shall list driver, route, run, trip, location, direction, time/date, transaction value, and ticket type for each transaction. BCT shall be able to filter the report using the following criteria:

- All tickets, a group of tickets, an individual ticket serial number or a sequence of numbers. "Wild card" serial number searching shall be supported, i.e., all tickets containing a certain number string or pattern.
- Date or range of dates
- Time range
- Transaction type (all or subset)
- Bus (all or subset)
- Driver (all or subset)
- Route (all or subset)
- Run (all or subset)
- Trip (all or subset)
- Location (bus stop number or latitude/longitude range)
- Employer/third party billing code.

3.3.9.6 Fare Structure Report

This report shall show all fare table settings, including fare values, attribute designations, and transfer designations for each fare cell of each fare set. It shall include media definitions and their usage settings; transfer definitions and their usage settings; the ridership definition formula; and holidays and peak time definition.

3.3.9.7 Cashbox Reports

The DCRS shall generate a variety of cashbox security reports, including, at minimum:

- Cashbox last seen (time/date of last probing)
- Cashbox activity history
- Cashbox audit (cashboxes for which a reconciliation error occurred)
- Vault Interface Log
- Vault Exception Log
- Bin activity
- Bin totals.

3.3.9.8 Exception Reports

The DCRS shall generate a daily exception report listing operator entry errors (invalid route, run driver or trip numbers) as validated against lists of valid numbers maintained by the System.

3.3.9.9 Maintenance Reports

The DCRS shall generate farebox maintenance reports, including, at minimum:

- Maintenance Report

- Farebox PM
- TRiM Diagnostics Report

3.3.9.10 Security Reports

The System shall have the ability to generate security reports, which shall indicate all cashbox, door open and memory clear alarms. For each alarm, the time of day and the bus number shall be indicated. For the security door and cashbox alarms, the report shall also indicate the amount of revenue that was in the cashbox at the time the alarm was generated.

3.3.9.11 Editing Data

Provider shall ensure BCT can edit data in the System in restricted ways. In order to preserve the security of the System, only operator entries (route, run, driver and trip numbers) shall be changeable.

Fare information from mobile tickets and EASY Card must be editable in the same interface as the existing GFI/Genfare quality control process, and must to the greatest extent possible, avoid fraudulent editing.

3.3.9.12 Transaction Log

Provider shall ensure that a transaction log is maintained in the System computer. The transaction log shall maintain a record of all uses of passwords to access reports, those reports accessed, the time of log on and log off, etc. In particular, all editing of data in the system shall be recorded in the transaction log. The transaction log shall maintain this information for a minimum of 60 days. The transaction log shall not be subject to editing by users through any Provider System software.

3.3.10 Network Manager and Network Manager Computer

Provider shall ensure the DCRS operates with the existing network manager computer system at BCT's central office. The network manager shall periodically extract data from the GDSs and consolidate it into a central database, download fare tables and other configuration parameters to the GDSs, and generate management reports. The reports shall include all reports available in the GDS. BCT shall be able to view revenue and ridership reports using data from each GDS and view all revenue and ridership totals from all GDSs in the network.

BCT shall be responsible for providing the network manager computer that meets or exceeds the following minimum performance characteristics:

- Server-class microcomputer with two (2) Intel Xeon quad-core processors or approved equal
- 12 gigabytes of RAM
- Five (5) SAS hard drives (minimum) and RAID controller configured as follows: Two hard drives in RAID-1 (drive mirroring) as C: drive, plus three hard drives in RAID-5 array for Provider-provided applications and database.

- 16X or faster DVD RW drive
- One 17-inch-diagonal (or larger) flat-panel color monitor
- Integrated 1000 Mbps Ethernet LAN adapter
- Battery-powered real-time clock and calendar capable of keeping correct time for up to seven days without external power
- Four USB ports
- Microsoft Server 2012 R2 or approved equal
- Printer (for printing reports)
- Uninterruptible power supply in the event of power loss and a minimum 30 minutes of backup power to allow for manual shutdown.

Provider shall be responsible for providing and conducting any updates or upgrades not specified above required to support the System.

3.4 Genfare Network Manager Application (“Network Manager Application”)

Provider shall provide a Network Manager Application that provides all the tools and functions presently available to BCT, as well as the tools and modules specified in this Section. The Network Manager Application shall provide "user friendly" menu-driven interface for users to access these tools and modules.

3.4.1 Ticket Configuration Module

The ticket configuration module must allow BCT personnel to manage existing and new ticket types, pass products, and programs. All existing BCT ticket types shall be supported, and BCT staff must have the ability to add new ticket types, including mobile tickets, by use of the ticket configuration module.

3.4.2 Fare Maintenance Module

The fare maintenance module must allow BCT personnel to perform fare structure revisions and set up for offers, promotions, and coupons.

3.4.3 Reports Module

The reports module must allow BCT personnel, with designated permissions, to generate the standard reports listed in Section 3.3.9 as well as to use custom queries to generate custom reports. BCT personnel shall be able to use any ODBC-compliant third-party tool to further manipulate the data and reports. BCT personnel shall be able to export all data, on demand, to a server or other data store for further manipulation.

Provider shall ensure BCT personnel can use the same reporting tools to generate reports for all fare transactions, including mobile tickets and EASY Cards. Provider shall further ensure BCT personnel can use the same reporting tools to generate ridership reports and perform ridership analysis and reconciliation for all fare transactions, including mobile tickets and EASY Cards.

The reports module shall provide a real-time system status and metrics dashboard for BCT personnel to access the following Mobile Ticketing information:

- Graphical and detailed representations of system operations and sales for Mobile Ticketing in real time.
- Reports shall include, but not be limited to, revenue reports, customer reports, purchase reports, activation reports, activity reports, history reports, and error reports.
- Provide information on all ticketing events including, but not limited to: real-time communications of ticket sales and validation scans with time and geo location; origin and destination data; ticketing sales events and associated details as they occur; ticket inspections and use events as they occur.
- Ticket sales reports shall, at a minimum, include the following sales information:
 - Per day
 - Per ticket/pass type
 - Per route
 - Per special event
 - Per payment card type
 - Purchase location
 - Gross total sales
 - Gross total refunds
 - Net totals.
- Ticket usage reports shall, at a minimum, include the following usage information:
 - Ticket activation count
 - Ticket activation date/time
 - Ticket activation location
 - Ticket validation scan count
 - Ticket validation scan date/time
 - Ticket validation scan location
 - Ticket usage per route
 - Total number of riders
 - Total users in the System
- Provide both summary and detailed real-time views of all ticketing activities.
- Ability to sort and filter results.

3.4.4 Customer Service Module

The customer service module shall allow BCT personnel to access Customer account history, balance, usage, current status, and service history. The customer service module shall provide service functions for refunds, credits, transfers and voids. BCT personnel shall be able to use this module for quick resolution of customer inquiries related to mobile ticket transactions.

3.5 Onboard Fare Collection Operation

Provider shall provide, install and configure an onboard fare collection system that works in the following manner:

1. At the start of a shift, the driver will log on to the existing CAD/AVL control head which will send log-in details to the farebox, equipped with ticket validator, via the J1708/1587 interface.
2. Riders with mobile tickets will present them to the farebox validator which will validate the ticket and register the fare.
3. Riders with EASY Cards will present them to the farebox validator which will read the card, determine its validity, and register the fare if the card is valid.
4. Riders not using mobile tickets or EASY Cards will pay their fare using cash or magnetic passes issued by BCT.
5. All onboard fare transactions and events, including cash payments, magnetic passes, EASY Card acceptance, and Mobile Ticketing acceptance, will be uploaded to the System nightly.
6. Transaction and event data, including both cash and electronic card transactions, will be consolidated in one data system.

3.6 Mobile Ticketing Solution

Provider shall develop and implement an end-to-end Mobile Ticketing solution allowing Customers to purchase transit tickets using a mobile device or the Internet and have their ticket delivered instantly to their phone. Provider shall tailor the Mobile Ticketing solution to meet the specific needs of the BCT and use the BCT's branding.

3.6.1 Mobile Ticketing Operation

Provider shall develop and implement a Mobile Ticketing solution that works in the following manner:

- Customers with iOS or Android smart phones or tablets go to the app store for their device and download the Mobile Ticketing App. The App shall also be available through a Web ticketing portal. There will be no charge for the App.
- Customers may purchase mobile tickets either through the App or the Web portal. Payment via credit or debit card, transit benefits or stored value is accepted. Eligible ticket types include any fare product designated for mobile use by BCT, including passes, stored ride and stored value cards.
- Customers must identify the mobile device to which the ticket is to be sent. They are encouraged but not required to create an account when doing so – this simplifies future purchases and provides other benefits.

- Upon successful ticket purchase transaction, the ticket is electronically transmitted to the mobile device. When received, the ticket is inactive and stored in the Customers “ticket wallet.” To use the ticket, the customer must activate it by tapping a button on the screen. This causes a virtual ticket featuring a 2D bar code to be shown on the phone’s display.
- Activation “starts the clock” on period passes and embeds the current time and date in the 2D barcode. To board the bus, the customer must present the virtual ticket to the farebox validator within a predetermined time, typically 30 minutes. Once this time elapses, the ticket becomes inactive and cannot be used until reactivated. This reduces the chances that unauthorized copies of the ticket can be used to board without paying.
- Mobile tickets are read and validated by the farebox validator without driver intervention.
- If the farebox validator determines that the virtual ticket is valid for boarding, it sounds the “accepted” beep, the fare registers, and the fare product type is shown on the display.
- If the farebox validator determines that the virtual ticket is not valid for boarding, it sounds the “rejected” beep, and transaction failure reason is shown on the display.

3.6.2 Mobile Ticketing App (“App”) and Web Portal

Provider shall develop and provide an App to allow Customers to purchase transit tickets using a mobile device and have their tickets delivered directly to their phone. Provider shall also provide a Web portal to allow Customers to purchase, replenish and manage mobile tickets using a Web browser connected to the Internet. The objective of the App and the Web portal is to make ticket purchases easy for both regular commuters and occasional riders.

Provider shall develop and provide the App and Web portal that meet the following requirements (unless stated specifically to either the App or the Web portal, the requirements listed below shall apply to both the App and the Web portal):

- The App shall run on the iOS and Android operating system in current version at time of Mobile Ticketing Final Acceptance (and above) and two (2) releases prior. The interfaces for each device will feature common branding and operational flow while conforming to best practices for each platform.
- The App shall be available for download to Customers with iOS or Android smart phones or tablets from the app store (iTunes or Play Store) at no cost to Customers.
- Customers must be able to purchase mobile tickets. Payment via credit or debit card, PayPal, transit benefits or a stored value account is accepted. Eligible ticket types include any fare product designated for mobile use by BCT, including passes, stored ride and stored value cards.

- Customers must be able to schedule a recurring transaction including, but not limited to, having a new monthly pass delivered automatically each month.
- Supports all existing BCT ticket types as well as new ticket types to be offered by BCT.
- Tickets must clearly state what type of pass they are, e.g., single trip, 10 trips, single day, weekly, or monthly, etc. Tickets must feature distinctive graphical designs for different ticket types.
- Tickets purchased must be delivered to a secure ticket wallet in the App and must be available in both online (with Internet connection) and offline (without Internet connection) modes.
- Customers must identify the mobile device to which the ticket is to be sent. The ticket is electronically transmitted to the mobile device. When received, the ticket is inactive and stored in the Customers “ticket wallet.” Customers can activate tickets at time of use to be read by the barcode scanner on the farebox. To use the ticket, the Customer must activate it by tapping a button on the screen. This causes a virtual ticket featuring a 2D bar code to be shown on the phone’s display.
- Activation “starts the clock” on period passes and embeds the current time and date in the 2D barcode. To board the bus, the customer must present the virtual ticket to the farebox validator within a predetermined time, typically 30 minutes. Once this time elapses, the ticket shall become inactive and cannot be used until reactivated. This reduces the chances that unauthorized copies of the ticket can be used to board without paying. The App must inform Customers that they need to activate their mobile tickets upon boarding the transit vehicle. Upon activation, an activation timer shall be displayed in the App, the virtual ticket changes color at a predictable intervals, and the App queues an event to be independently pushed to the central servers when a connection becomes available.
- Once a ticket reached its activation time limit, it automatically deactivates and either returns to the ticket wallet for later use (as in the case of a pass) or else is sent to the ticket history section, where records of expired and/or invalidated tickets are retained. Customers can go online at any time and review their purchase history and access receipts if necessary.
- As a backup in case of automatic ticket validation failure, all virtual tickets shall be available for visual inspection by the bus driver. Virtual tickets must have an animated graphic which is visible from at least five feet away for drivers to easily see and determine a ticket is legitimate and is not a screenshot received from another phone.
- Provide guest checkout as an option for payment, but encourage Customers, but not require them, to create an account to simplify future purchases. Registered users are able to store their payment information in a “smart wallet,” allowing them to easily purchase or re-purchase tickets. The wallet allows quick access to tickets and deletes expired or depleted items.
- Maintain a history of all tickets purchased by a Customer, whether purchased through the App or Web portal. This history shall be accessible from either platform at any time. Customers must be able to repurchasing a ticket. Customer must be able to mark a ticket

as a favorite, to allow a Customer to find a previous ticket and repurchase another ticket of like-kind easily.

- Use account-based method for Customer account management. Protect Customers' privacy by ensuring that Customers' user and account information is stored separately from Customers' travel history.
- Provide BCT and connecting system maps and station information and allow access to this information, regardless of whether online (with Internet) or in offline (without Internet) mode.
- Allow Customers to plan a trip by entering origin and destination information to receive an immediate and automatically system generated step-by-step directions for their trip.
- The App must provide location-based services and native map integration shall be established to help Customers find nearby stations and information.
- The App must allow the Customers to determine when their bus will arrive using their mobile device, and provide the Customer with a personalized vehicle arrival alert system. The App shall provide vehicle location through an interface with BCT's Computer-Aided Dispatch/Automatic Vehicle Locator ("CAD/AVL") system for vehicle location data.
- Provider shall utilize BCT's published GTFS information, both static and real time, to provide trip planning features for the mobile app.
- Allow BCT personnel to send general announcements and alerts to all Customers for relevant advisories and notices including, but not limited to, the ability to interface to BCT's Twitter feed and provide Customers the option, if so elected by the Customer, to receive alerts for the Customer's selected travel routes and stops. Allow BCT to provide alerts via text or email, and allow Customers to choose one or both options. Allow BCT personnel to manage announcements and alerts sent to Customers
- Allow BCT to provide special offers to Customers. Any special offers presented to Customers must appear on the home screen, using text or graphics. Offers can include, but are not limited to, promotional fares or packages combining event tickets with Customer transportation and have the capability of presenting third-party advertising offers.
- Allow Customers to submit customer service requests to BCT.
- Provide answers for frequently asked questions ("FAQ") and searchable help documentation. The help documentation provides step-by-step instructions for how to purchase and use tickets. Every screen must include a help button for access to context-sensitive assistance.
- The Web portal shall be seamlessly integrated with the BCT's existing Web site, using the same graphics and site navigation scheme, and comply with Broward County's Website Policy and Standards.
- Customers and users of the portal will be automatically logged off the portal system after fifteen (15) minutes of inactivity
- Meet ADA requirements, when applicable.
- Meet PCI-compliance requirements including as stated in Section 3.6.3.2, using a hosted payment solution to ensure the security of sensitive customer data.
- App requires customers to click through a County-approved End-User License Agreement.

3.6.3 Security and Safeguards against Fraud

3.6.3.1 Mobile Ticketing App Security Features

The App shall have the following security features to minimize fraud:

- Requires Customers to activate their mobile tickets upon boarding the transit vehicle. Once a ticket reached its activation time limit, it shall automatically deactivate.
- Virtual tickets must feature an animated graphic, indicating the ticket is legitimate and not simply a screen shot sent from another phone.
- The background areas of the both the ticket and barcode screens shall contain a selectable image that can be designated by the BCT and uses a programmatic overlay that “sweeps” the background in a predictable fashion to prevent static app images from being displayed.
- Display a daily security token behind the activation timer. The token shall be drawn from a pool of images selected by BCT that are shuffled into sets and made accessible to App. The App shall cache a number of tokens to allow for future offline ticket activation, but once the set is expired, the Customer must have an active Internet connection to acquire new tokens. The time limit for the cache shall be determined by BCT and is measured in days.
- The data to be encoded in the mobile app bar code shall total 98 bytes in unencrypted form. It shall be encrypted using an AES encryption scheme with a key, and other information if necessary, selected and maintained by BCT and managed via the Ticket Configuration Module of the Network Manager Application. The encrypted data shall be passed through a secondary encoding algorithm for a more secured and obscured encryption scheme. The result shall be dynamically rendered as a 2-dimensional barcode readable by most commercially available scanners but indecipherable without knowledge of the encoding schema, encryption scheme, and encryption keys.

3.6.3.2 PCI Compliance

Provider must meet the following requirements to ensure the Mobile Ticketing solution is PCI compliant:

- Provider must protect customer privacy and transaction security by complying with the security standards of the financial payments industry, ensuring the security and confidentiality of customer information, and protecting it against threats or hazards.
- Provider must ensure the solution is compliant with existing payment industry standards, including the Payment Card Industry Data Security Standards (“PCI DSS”).
- The App and Web portal shall be PCI-compliant, using a hosted payment solution to ensure the security of sensitive customer data. During payment, the App and Web portal redirects the Customer to a Web page hosted by a PCI-compliant financial gateway or processor.
- Provider must analyze audit points upfront as system requirements and use appropriate architecture and tools to ensure adequate end-user access controls, activity monitoring, and logging.
- Provider must ensure mechanisms are in place to regularly test security systems and

processes to ensure that vulnerabilities and exploits are monitored or mitigated until they can be patched via security updates.

- To reduce risk and ensure PCI compliance, no sensitive cardholder data shall be seen or stored at any point on the Provider's platform. Instead, payment information must be stored securely by the County's merchant services vendor and accessed by the Provider's system using tokenization. The token is a representation of the customer's payment information only and cannot be used to gain unauthorized access to sensitive cardholder data.
- Provider must use best practices with respect to PCI DSS compliance.

3.7 Security

3.7.1 Overall System Security

In addition to the Security requirements set forth in Article 8 of the Agreement and those security requirements specific to certain components of the System, Provider shall cooperate with BCT and provide any and all information that BCT may request in order to determine appropriate security and network access restrictions and verify Provider compliance with BCT security standards.

Provider shall present and have approved by Broward County Enterprise Technology Services ("ETS") Security a network security plan that demonstrates due diligence in providing industry standard techniques for protecting the security of Broward County's internal network from unauthorized access via the WAN and LAN systems. The network security plan shall address how Provider intends to comply with the Broward County ETS internal network security standards, as well as the measures Provider will undertake to comply with those standards. Provider shall use County's Lightweight Directory Access Protocol ("LDAP") Active Directory system to authenticate users with their County assigned user ID and password. Upon a period of inactivity of fifteen (15) minutes, the System shall automatically time out and require re-entry of the username/password combination to continue.

3.7.2 System Audit Log

The transaction log shall be accessible only by authorized users and shall contain the date, time of day, user ID and password, and all functions accessed or actions performed including, but not limited to, report generation and fare table modifications.

Transaction log results shall be a complete, identifiable trail leading to the keyboard and operator attempting to make or making program changes, and indicating whether or not these changes are authorized.

3.7.3 Virtual Access Security

For virtual access to any BCT systems, the Provider must submit an email with information below to the County representative designated by the Contract Administrator (if none designated, then to the County's Supervisor of Infrastructure and the IT Manager).

1. **Last Name & First Name** = User information for this request
2. **Job Title** = Your job title
3. **Company Name** = Name of company
4. **Access:** Describe the component(s) you wish to make an action on.
5. **Justification** = Please include the business justification for your request
6. **Effective Date** = Date you wish for this to be implemented at the earliest

3.7.4 Physical Access Security

Provider must complete a Contractor Physical Access Request Form at least five (5) business days before needing access, and submit the form electronically via email to the County representative designated by the Contract Administrator (if none designated, then to the County's Supervisor of Infrastructure and IT Manager) to gain entrance to any Transit data center, network closet or control room.

3.8 Capability to Support New Transit Fare Collection Systems

A 2.7 mile streetcar project, The Wave, is currently underway and is projected to be operational by 2021 in downtown Fort Lauderdale. The Wave is proposed to have kiosk style ticket vending machines at approximately ten (10) to twelve (12) stations that would accept smart cards, debit cards, credit cards, cash and other payment methods. The Wave streetcar will be serving Broward County and will be operated by BCT. Although the Wave streetcar fare collection system is not part of the scope of this project, it is mandatory that the System can be fully integrated into the Wave streetcar system when it is in place. Any actual integration or interface Services may be procured by County as Optional Services.

4 Management Approach

4.1 Provider's Project Team

Unless otherwise agreed to by County in writing, Provider's Project Manager, Rob Antonio, must participate in such role for the entire project from start to finish. The County shall have the right to reject any of the Key Personnel specified below upon review of their credentials or on the basis of dissatisfaction with their performance under this Agreement.

Provider will ensure that the persons responsible for Provider's performance of the Services under this Agreement and, to the extent applicable, identified below (collectively "Key Personnel") are appropriately trained and experienced and have adequate time and resources to perform in accordance with the terms of this Agreement. To the extent Provider seeks or is required to make any change to the composition of the Key Personnel, Provider will provide BCT with thirty (30) days' advance notice (or as much advance notice as is possible if thirty (30) days' notice is not possible) regarding such changes and the management plan associated with such changes. BCT shall not be responsible for any additional costs associated with a change in Key Personnel.

The Project Manager shall be the primary point of contact between Provider and BCT

The Project Manager is responsible for the following:

- Overall program management and direction, including planning, management, supervision, and control of the project: The project manager is responsible for directing and coordinating the technical effort as well as the manufacturing and administrative aspects of the project. The project manager has the authority to commit the personnel and other resources needed to bring all tasks to a successful conclusion. The project manager meets periodically with other Genfare department heads in production meetings chaired by Genfare's president. At these meetings the project manager reports on the current status of the project, including any projected deviations from schedule or other issues, and if necessary obtains commitment of sufficient additional resources to ensure that all program milestones are met.
- Preparing the project schedule and budget and obtaining Contract Administrator approval: Thereafter, the project manager maintains the project schedule, tracks the status of all tasks and costs, and issues revised schedules for authority approval if and when required.
- On-Site Attendance: Project manager (or assistant project manager upon County's approval) must be on-site, locally, at a minimum of twelve (12) business days per calendar month while a Notice to Proceed for any Phase is outstanding and such Phase has not been completed, with no exceptions, until written Final Acceptance has been given by BCT.
- Providing technical direction and expertise: In consultation with Genfare engineering staff, the project manager has frontline responsibility for any technical issues that arise over the course of the project.
- Providing coordination between BCT and Genfare: The project manager consults with BCT to identify the appropriate BCT staff responsible for various aspects of the project and ensures timely and appropriate exchange of information between the two organizations. The project manager reviews all incoming correspondence and sees that it is appropriately recorded and filed, oversees preparation of all outgoing correspondence, and ensures that all communication is directed to the proper parties.
- Oversight, Review, and Signoff: Overseeing preparation of all required submittals and deliverables, conducting design review, and obtaining Contract Administrator signoff.
- Installation Supervision: Providing supervision for installation of equipment, including on-site supervision of Genfare personnel during the installation phase of the program.
- Attendance: Attending program meetings (as required) and arranges for attendance of other Genfare personnel at meetings when additional technical input is needed.
- Milestone Notification: Notifying the appropriate parties when payment milestones are reached and taking any steps necessary to ensure proper completion of the work, securing of approvals, and timely payment.
- Assisting in the resolution of any issues: The project manager is the "point person" for all issues that may arise during the course of the contract. The project manager will identify the staff or other resources needed to address the issue within Genfare, brief the appropriate parties on the situation, establish a plan of action to resolve the issue, see that the necessary resources are assigned, and follow up as needed.

4.1.1 Key Personnel

Name	Position	Responsibilities
Rob Antonio	Project Manager	Overall program management responsibility for contract primary point of contact between Genfare and the BCT and has principal responsibility for ensuring that the project remains on schedule and within budget.
To be determined prior to phase 1 and subject to County's approval.	Assistant Project Manager	Overall program management responsibility for contract primary point of contact between Genfare and the BCT and has principal responsibility for ensuring that the project remains on schedule and within budget.
Andrew Chan	Director of Business Development	Project definition and technology compliance
Vijay Balan	Director of Engineering	Overall supervision of design and development
Igor Haskin	Manager of Mechanical Engineering	Mechanical design
Delbert Gray	Quality Assurance Manager	Testing and quality control

4.2 Project Tracking

The Project Manager shall maintain full visibility of all aspects of the project and keep BCT apprised of project progress, including any deviations from original schedule milestones, through the use of such reporting mechanisms as may be agreed upon, including periodic project reports, schedule updates, teleconferences, and in-person meetings, where required. The Project Manager shall report any schedule deviations or other issues to Provider management at production meetings, at which time supplementary resources shall assigned as needed in order to ensure timely completion of the project.

Provider must use Microsoft Project for project tracking to generate weekly agreed-upon progress documentation and as the incident tracking system by Provider. The project schedule must adhere to the phases outlined in Section 6 Project Phases and Deliverables.

Provider shall deliver a detailed finalized project schedule including installation and work plans, within sixty (60) days of Notice to Proceed by BCT Contract Administrator, and update the project

schedule on a monthly basis or other agreed upon interval, which updates shall address, at a minimum:

- Equipment design
- Software development
- Manufacturing
- In-factory testing
- Delivery of equipment and corresponding hardware
- Removal of old equipment
- Installation schedule for conduits, cables, electrical services, and new equipment
- In-service testing
- Training schedules
- Delivery methods for documentation including, but not limited to, submission of final plans to meet local building codes
- Preliminary Testing
- Final Acceptance Testing

4.3 Communication Plan

The Project Manager shall maintain and update an electronic copy of a Communications Plan that includes items described in the following sub-sections, unless otherwise agreed to by both parties, which must be approved by BCT.

4.3.1 Collaboration Space

This project will utilize a collaboration space set up by BCT with appropriate access to the Provider's Project Team. This space will be accessible through the Internet. It will also be accessible to the stakeholders listed above, with password protection on the space and any other security as required by BCT policy.

This space will be used to store:

- Project Status Summaries/ Updates
- Test Scripts
- Meeting Minutes
- Project Weekly Schedule Updates (health meter)
- Weekly Issues Report
- Project Documents
- Documents for Approvals
- Team Contact Lists
- Other Information as determined by the Project Team

4.3.2 Weekly Progress Reports

During the course of the project, unless otherwise agreed to by County in writing, Provider must hold weekly meetings with BCT to ensure that the project remains on schedule and that all work groups are coordinating their activities. Each department head shall report on progress to date,

problems encountered, and the outlook for the next reporting period. The project manager must inform team members of any BCT comments regarding specific project issues or general progress.

Provider shall record the current status of all project tasks in the Provider's project management system, allowing instant review of the program by any member of the project team. Periodically, or upon County's request, Provider shall generate status reports highlighting all critical path activities and project milestones.

Provider shall provide written project status reports indicating planned versus actual progress on a weekly basis, unless a different reporting frequency is agreed to by BCT in writing, and may be delivered in conjunction with monthly progress meetings. Progress reports must address:

- Narrative of project status
- Individual task status (complete, in progress, pending)
- Percentage of completion
- Status of current and anticipated problems
- Status of action items, including any necessary corrective actions
- Payment milestones achieved, if any
- Contract deliverables status

4.3.3 Other Meetings

In addition to the weekly progress report meetings and written project status reports, Provider must participate in additional meetings, as reasonably needed and determined in BCT's sole discretion, to facilitate progress of the project, including, but not limited to:

- Orientation conference (kickoff meeting), following a Notice to Proceed, which provides an opportunity for key project participants to meet one another, identify key quality control and inspection personnel, and discuss procedures, responsibilities, schedules, and contract requirements and terms. Provider will also advise BCT of all data and other requirements needed to configure the system.
- Configuration review based on information provided by BCT. Provider will demonstrate that the System to be installed will accurately reflect BCT's fare structure and business rules and that web pages, fare media, and mobile applications can be correctly branded and configured to meet all other project requirements.
- Installation meetings, which should occur immediately prior to delivery and installation of equipment and hardware.

4.3.4 Correspondence Control

Provider shall maintain a correspondence control system for the transmittal and filing of project correspondence and other project-related documents, including specifications, drawings, and contract deliverables. Provider must log and retain copies of all communications between the Provider and BCT including minutes of meetings, letters, drawings, memoranda, and other written material which form the file and record of the program.

Provider will be responsible for creating and distributing meeting agendas, notices, and meeting minutes of all meetings held between Provider and BCT.

4.3.5 Data Submittals

Documents submitted by Provider shall be identified with firm name, document title and document identification number (if any), issue date, and revision designation. Each page of the document will indicate the document identification number and revision designation.

Documentation will accurately reflect the equipment furnished. When equipment is modified, revised documentation will be submitted to the BCT Contract Administrator, as soon as practical.

As part of the data submittal process, Provider will create and submit a weekly status report template and complete a checklist for invoice and payments for BCT approval. The details of this document shall contain the following key features to ensure proper communication and submittal of invoices for payment:

1. Deliverable description
2. Deliverable phase
3. Deliverable cost/price
4. Must reference section from SOW

4.4 Risk Management Plan

The Project Manager shall maintain and update, an electronic copy of a Risk Management Plan that includes, but is not limited to, the following items:

- Risk process
- Risk identification
- Risk analysis of probability, impact and mitigations
- Risk responses
- Risk monitoring and reporting

5 Roles & Responsibilities

5.1 Provider Responsibilities

In addition to the responsibilities provided in the Agreement and elsewhere in this SOW, Provider shall be responsible for the following:

- Provide the services of a qualified Program Manager to represent the Provider and to meet with BCT to provide consultation and instructions regarding the successful implementation of the system.

- Perform all work tasks in the delivery, installation, implementation, training, and testing of an end-to-end fare collection system.
- Make scheduled on-site visits and conduct surveys to become familiar with County vehicles, operations, and facilities.
- If required, Provider must ensure that plans for all work meet requirements of local building codes. Provider must submit final plans for any such work to the Contract Administrator for approval.
- Provide personnel onsite to monitor, inspect and adjust all equipment during system startup and provide full and competent engineering services to handle and correct all problems associated with the performance of its equipment.
- Maintain an issues punch list, with recommended corrective actions to be updated weekly, in relation to the equipment installed during the preliminary testing period and during other installation and testing periods.
- Provider must comply with Federal Transit Administration (“FTA”) requirements including, but not limited to, National Transit Database (“NTD”) reporting and Buy America when applicable.

5.2 BCT Responsibilities

BCT shall be responsible for the following:

- Provide project management staff to work with the Provider’s Project Manager throughout the life of the project.
- Provide all data and access reasonably necessary to configure the system, which data includes, but is not limited to, fare structure and business rules; style sheets, logos and other necessities for “skinning” websites, the mobile application, and fare media requirements. Any delays by BCT may result in delays in implementation by Provider, but any delay by Provider shall not exceed the number of days BCT was delayed in providing the data or access required herein.
- Making vehicles available for installation in a timely manner, providing a suitable installation site, and necessary utilities. BCT is responsible for vehicle movement and repair, supervision of BCT personnel, and inspection and signoff for installed equipment.
- Provide a suitable air conditioned location on BCT property to house computers and other items of equipment required for the transmission and reporting of data.
- Provide adequate storage space at the garage location to store the fareboxes and related equipment upon delivery from the Provider.
- Responsible for site or facility modifications that may be required for installation of the fare collection system.
- Ensure the GDS computers meet or exceed the minimum requirements specified in Section 3.3.2.4.

- Ensure the network manager computer meets or exceeds the minimum requirements specified in Section 3.3.10.

6 Project Phases and Deliverables

Unless otherwise agreed to by County in writing, Provider shall comply with the phase duration time limitations set forth herein. The actual duration of each Phase shall be measured from the County’s issuance of Notice to Proceed for the applicable Phase until the Phase has received written preliminary acceptance from the County Contract Administrator. With the written approval of the Project Manager and Contract Administrator, Phases may proceed concurrently, be reordered, or be suspended and restarted.

6.1 Project Phases and Durations

Phases	Duration
Phase 1: Initiation	4 weeks
Phase 2: Design for Mobile Ticketing	3 months
Phase 3: Proof of Concept Launch for Mobile Ticketing (20 buses)	4 months
Phase 4: Mobile Ticketing Full Rollout Preparedness (concurrent with Phase 5a)	3 months
Phase 5a: Fixed Route Fleet Implementation	3 months
Phase 5b: Mobile Ticketing Final Acceptance	2 months
Phase 6: Design for Easy Card Integration	3 months
Phase 7: Proof of Concept Launch for Easy Card Integration	2 months
Phase 8: Easy Card integration Full Rollout Preparedness (concurrent with Phase 9)	2 months
Phase 9: Easy Card Integration with Miami Dade Transit (“MDT”)	2 months
Phase 10: Final Acceptance	2 months

After completion of the design phase for each of the Mobile Ticketing Subsystem and the Easy Card Subsystem, BCT shall elect to proceed or not proceed with the respective Proof of Concept. If BCT elects to proceed with Proof of Concept for either or both Subsystems, BCT shall issue the appropriate Notice to Proceed for the Proof of Concept phase. After successful completion of any Proof of Concept phase, BCT will elect whether or not to proceed with full fleet deployment

of the applicable Subsystem. Election to proceed with any Phase shall be subject to the sole direction of County. If BCT elects not to proceed with any Phase at no fault of Provider and Provider is not in default and has not failed to achieve preliminary acceptance for the phase or phases for which Provider seeks release of the retainage, BCT shall promptly pay to Provider any retainage amount for work completed.

The EASY Card interoperability implementation of this project requires participation from MDT. Currently, MDT is in the process of upgrading their automated fare collection system. The upgrade migrates the existing back office to a vendor-provided cloud environment that facilitates all back office services, Mobile Ticketing payments, self-service and other functions. The EASY Card integration implementation of this project will be phased and aligned with MDT’s cloud migration (including as modified by MDT).

6.2 Deliverables

Phase 1: Project Initiation

Duration: Four (4) weeks

Deadline: Completed within four (4) weeks from Notice to Proceed for Phase 1

Description: During this phase, Provider shall initiate all activities required to establish the project structure. The activities shall include, but not be limited to, the following:

1. Provider shall conduct project kick-off meetings with BCT to review roles of key participants, overall project scope and objectives, resource and scheduling requirements, and preliminary project schedule.
2. Provider shall establish a weekly status report template and complete checklist for invoice and payments for BCT approval.
3. Provider shall conduct any on-site visits and surveys to become familiar with County vehicles, operations, and facilities.

No.	Phase	Deliverable Description	Preliminary Acceptance Criteria
1.	1	Weekly status report template and checklist for invoices	Provider provided weekly status report template and invoice checklist, as specified in Section 4.3.5

Phase 2: Design for Mobile Ticketing

Duration: Three (3) Months

Deadline: Completed within three (3) months from Notice to Proceed for Phase 2

Description: During this phase, Provider shall perform detailed site survey audit and hold discovery meetings with BCT to finalize preliminary and final design document for Mobile Ticketing using the new Fast Fare validating farebox. Provider shall conduct vehicle surveys and

provide detailed equipment and installation drawings. Provider will audit BCT facilities to become familiar with the GDS. Provider shall provide a detailed site report identifying any site deficiencies at BCT. Provider shall provide a proposed test plan for review and approval by County which outlines testing procedures for acceptance criteria listed in Phases 3 and 5 and incorporates any comments or changes requested by County. The Test Plan will describe the scope and approach of intended test activities. It will identify the features, tasks, techniques and entry and exit criteria to be used, and any risks requiring contingency planning. It is a record of the test planning process. Provider shall provide ISR 9001 certificate(s) establishing that Provider is certified as compliant with ISO 9001 quality assurance standards promulgated by the International Organization for Standardization.

No.	Phase	Deliverable Description	Preliminary Acceptance Criteria
2.	2	System Design Documents for: <ul style="list-style-type: none"> • WiFi for wireless data probing • Mobile Ticketing App and Web portal • Mobile Ticketing reports • PeopleSoft interface • Detailed site report identifying any site deficiencies at BCT 	Provider provided System design documents, as specified in Sections 2 and 3 of this SOW.
3.	2	Architectural diagrams (servers, applications, ports, data flow, firewalls)	Provider provided architectural diagrams, as specified in Section 3. The architecture diagrams will provide a graphical representation of the concepts, their principles, elements and components that are used to understand, clarify, and communicate ideas about the system structure. It must be self-descriptive, consistent and accurate. It will include (but not limited to) information such as a detailed inventory of hardware, software, facilities, networking capabilities, needed ports and data flow.
4.	2	Equipment requirements documents	Provider provided equipment requirement documents, as specified in Sections 2 and 3. Documents shall list all equipment required to interface with vendor supplied equipment, including but not limited to servers, workstations, Wi-Fi, LAN/WAN connections, required Operating Systems and power requirements for vendor supplied equipment.
5.	2	Equipment List	Provider provided a finalized equipment list, using equipment listed in Section 2.2
6.	2	As-built drawings for equipment placement on buses	Provider provided as-built drawings for bus equipment, as specified in Section 2.2.2. As built drawing shall reflect the build of the bus, whether it's mechanical or electrical. The drawings shall demonstrate how the vendor built the equipment and any changes made to the equipment for County's use.

7.	2	IT security plan	Provider provided an IT security plan, as specified in Section 3.7.1
8.	2	Independent laboratory test results for the Fast Fare Validating Farebox	Provider provided independent laboratory test results, as specified in Section 3.1.2.1
9.	2	Test Plans aligning with Acceptance Criteria (including revisions as requested by County) <ul style="list-style-type: none"> • Bus equipment validation • System acceptance Functional acceptance 	County approval of proposed test plans. The Test Plan shall describe the scope and approach of intended test activities. It must identify the features, tasks, techniques and entry and exit criteria to be used, and any risks requiring contingency planning. It must document the test planning process.
10.	2	ISO 9001 certificate(s)	Provider provided ISO 9001 certificate
11.	2	Finalized Project Schedule	County approval of finalized project schedule

Phase 3: Proof of Concept Launch for Mobile Ticketing (20 buses)

Duration: Four (4) months

Deadline: Completed within four (4) months from Notice to Proceed for Phase 3

Description: During this phase, Provider will complete Proof of Concept on a limited number of BCT buses with implementation of a fully functional Mobile Ticketing system along with all required equipment/software system upgrades.

The Proof of Concept fleet will include approximately twenty (20) BCT buses on selected Express and Breeze routes connecting with the MDT system and Tri-Rail. Provider shall provide spare equipment for out-of- service conditions.

BCT will subject the equipment to the tests indicated herein to determine that it is free of manufacturing and material defects and is suitable for installation and use in revenue service.

Objectives for the Proof of Concept phase are:

- Acquire customer feedback on new fare collection methods
- Test and validate equipment/devices performance that meet the needs of a transit environment (ease to use, fast and reliable)
- Demonstrate new fare collection methods can support BCT business rules of payment processing, financial reporting, data collection and reporting, and audit
- Demonstrate back-office functionalities including account management, reporting for revenue and transactions
- Identify cost and benefits for full deployment
- Define fare policies that encourage customer buy-in of the new fare collection system
- Demonstrate compliance with FTA requirements such as NTD reporting, Buy America, etc.

No.	Phase	Deliverable Description	Preliminary Acceptance Criteria
12.	3	Hardware (garage)	Provider provided hardware, as specified in Section 2.2.1

13.	3	Factory testing	Provider conducted factory testing, as specified in Section 8.2. BCT to verify Provider has delivered documentation for completion of factory testing and that all equipment complies with equipment specifications, and is free from operational defects and suitable for revenue service
14.	3	Install WiFi for pilot testing for wireless data probing (COPANS)	Provider installed WiFi, as specified in Sections 2.5, 3.1.22, 3.3.2.3 and 3.3.4.2
15.	3	Cashbox vaulting system upgrade for pilot testing the new cashboxes (COPANS)	Provider upgraded the cash box vaulting system as specified in Section 3.2
16.	3	Database migration from Sybase to MS SQL 2012	Provider performed data migration, as specified in Section 2.6
17.	3	Network Manager Application updated to the latest version upon delivery	Provider updated Network Manager Application, as specified in Section 3.4
18.	3	Roles and Permissions	Provider established roles and permissions, as specified in Section 3.3.8
19.	3	Fast Fare validating farebox installed for Pilot Program on 20 buses	Provider installed Fast Fare validating fareboxes, as specified in Section 2.4.2
20.	3	Fast Fare validating Farebox Equipment	Provider provided fareboxes that meet the technical requirements specified in Section 3.1. Provider completed the CAD/AVL interface for the Pilot fareboxes as specified in Section 2.7. BCT verified the fareboxes accept mobile tickets as a form of fare payment and transfer related data internally and in accordance with the requirements specified in Section 3.1.10
21.	3	Data Probing Functionality (COPANS)	Provider integrated the System with the existing data probing equipment at BCT and enabled both wired and wireless data probing that meet the requirements specified in Sections 3.3.2.2 and 3.3.2.3
22.	3	Mobile Ticketing Mobile Phone App and Web portal available for testing and approval	Provider provided Mobile Ticketing solution , as specified in Section 3.6 for testing and approval
23.	3	Payment Procession Plan set up	Provider provided services as specified in Section 2.10 for payment processing plan
24.	3	PCI Compliance	Provider complied with PCI Compliance, as specified in Section 3.6.3.2
25.	3	Data Collection and Reporting System, and Analytics	Provider upgraded the DCRS and met the requirements specified in Section 3.3 for the new fareboxes and Mobile Ticketing, BCT verified that users with specified permissions are able to generate a variety of on-demand reports and analytics
26.	3	Overall Pilot System Validation - Test Plan Passed and Approved by BCT	County validated Provider provided pilot system function and design, as specified in Section 8
27.	3	Spare Parts	Provider provided the spare parts the County ordered in accordance with the procedures set forth in Exhibit B of the Agreement

28.	3	Training - Operators/Drivers Mobile Ticketing Training	Provider conducted operator training and provided training documents, as specified in Section 2.13
29.	3	Delivery of 1 FastFare Farebox for training	Provider provided a farebox that meets the technical requirements specified in Section 3.1.

Phase 4: Mobile Ticketing Full Rollout Preparedness (concurrent with Phase 5a)

Duration: Three (3) months

Deadline: Completed within three (3) months from Notice to Proceed for Phase 4

Description: During this Phase, Provider will work with BCT to develop marketing and outreach strategies and material and to complete marketing initiatives to educate the Customers about the new Fast Fare validating farebox and Mobile Ticketing. Provider shall also complete necessary training and documentation.

No.	Phase	Deliverable Description	Preliminary Acceptance Criteria
30.	4	Marketing initiatives (joint)	BCT verified that Provider completed all professional services, as specified in Section 2.12, for new farebox and Mobile Ticketing marketing development assistance. Customer educational materials for new farebox and Mobile Ticketing were received and approved by BCT, as specified in Section 2.12 User demo or video of the new farebox and Mobile Ticketing App, to facilitate training for BCT personnel and Customers has been received and approved by BCT, as specified in Section 2.12
31.	4	Marketing material	Provider provided marketing materials, as specified in Section 2.12
32.	4	System Training (Back Office System Administrator, Power Users, and Business End-Users) and documentation for Mobile Ticketing Integration	Provider conducted System training and provided training documents, as specified in Section 2.13
33.	4	Operations, Maintenance and Support Training and documentation	Provider conducted Operations, Maintenance and Support training and provided training documents, as specified in Section 2.13

Phase 5a: Fixed Route Fleet Implementation (concurrent with Phase 4)

Duration: Three (3) months

Deadline: Completed within three (3) months from Notice to Proceed for Phase 5a

Description: During this phase, Provider will complete the implementation of new Fast Fare validating fareboxes with Mobile Ticketing for the entire BCT fixed route bus fleet.

Pre-requisites for fixed route fleet implementation shall be satisfactory completion of user acceptance testing for the proof of concept, as determined by BCT Contract Administrator.

Full deployment consists of implementing equipment and software on all BCT buses. An official Notice to Proceed (“NTP”) will be required from BCT to proceed with full deployment.

No.	Phase	Deliverable Description	Preliminary Acceptance Criteria
34.	5a	Install WiFi for wireless data probing at both BCT garages	Provider installed WiFi, as specified in Sections 2.5, 3.1.22, 3.3.2.3 and 3.3.4.2
35.	5a	Cashbox vaulting system upgrade	Provider upgraded cashbox vaulting system as specified in Section 3.2
36.	5a	Fast Fare installed on 377 buses/entire fleet buses	Provider completed installation for entire fleet, as specified in Section 2.4.2. Fareboxes meet the technical requirements specified in Sections 3.1. BCT verified CAD/AVL interface has been implemented for all fareboxes as specified in Section 2.7
37.	5a	Mobile Ticketing App and Web portal access and functionality	Provider completed Mobile Ticketing solution, as specified in Section 3.6, and it was tested and approved by County
38.	5a	Spare Parts	Provider provided those spare parts purchased by County in accordance with the procedures set forth in Exhibit B of the Agreement.
39.	5a	Data Collection and Reporting System, and Analytics	Provider upgraded the DCRS and meet the requirements specified in Section 3.3 for the new fareboxes and Mobile Ticketing, and it was tested and approved by County. BCT verified that users with specified permissions are able to generate a variety of on-demand reports and analytics. BCT verified that Sybase has been replaced in the DCRS
40.	5a	Garage Data System Sybase Data Elimination	Provider removed the Sybase Database from the Garage Data System and replaced it with a proprietary data structure
41.	5a	PeopleSoft Interface	Provider established PeopleSoft interface and generated files, as specified in Section 2.11, and it was tested and approved by County.
42.	5a	Regional Mobile Ticketing	Provider completed services specified in Section 2.9

Phase 5b: Mobile Ticketing Final Acceptance

Duration: Two (2) months

Deadline: Completed within two (2) months from written notification as specified in Section 7.3.1 of the Agreement.

Description: During this phase, Provider will resolve any issues that arose in Phases 1-5, deliver all spare parts ordered by County related to Phases 1-5, provide a complete listing of the end of life dates for all equipment in Phases 1-5, and complete all final acceptance testing for Phases 1-

5.

Deliverable Description	Preliminary Acceptance Criteria
A complete listing of the end of life date(s) for all equipment in Phases 1-5	Provider has provided documentation, as specified in Section 2.3
Conduct Final Acceptance Testing	All preliminary acceptance criteria from previous phases has been marked as passed and the Mobile Ticketing Subsystem works as specified in this Statement of Work

Phase 6: Design for EASY Card Integration

Duration: Three (3) months

Deadline: Completed within three (3) months from Notice to Proceed for Phase 6

Description: During this phase, Provider shall prepare preliminary and final design document for EASY Card integration. Provider shall provide a proposed test plan for review and approval by County which outlines testing procedures for acceptance criteria listed in Phases 7 and 9 and incorporates any comments or changes requested by County and agreed to by the Contractor. The Test Plan will describe the scope and approach of intended test activities. It will identify the features, tasks, techniques and entry and exit criteria to be used, and any risks requiring contingency planning. It is a record of the test planning process.

No.	Phase	Deliverable Description	Preliminary Acceptance Criteria
1.	6	EASY Card Integration Design Document	Provider completed the professional services specified in Section 2.8 to prepare an EASY Card integration design document and the design document was approved by BCT
2.	6	Test Plan aligned with Acceptance Criteria (including revisions as requested by County and agreed to by the Contractor)	BCT received and approved the test plans which outlined testing procedures for acceptance criteria listed in Phases 7 and 9. The Test Plan describes the scope and approach of intended test activities. It identifies the features, tasks, techniques and entry and exit criteria to be used, and any risks requiring contingency planning.

Phase 7: Proof of Concept Launch for EASY Card Integration

Duration: Two (2) months

Deadline: Completed within two (2) months from Notice to Proceed for Phase 7

Description: During this phase, Provider will complete Proof of Concept on a limited number of BCT buses with implementation of a fully functional EASY Card acceptance system along with all required equipment/software system upgrades.

The Proof of Concept fleet will include approximately twenty (20) BCT buses on selected Express and Breeze routes connecting with the MDT system and Tri-Rail. Provider shall provide spare

equipment for out-of- service conditions.

BCT will subject the equipment to the tests indicated herein to determine that it is free of manufacturing and material defects and is suitable for installation and use in revenue service.

Objectives for the Proof of Concept phase are:

- Acquire customer feedback on new fare collection methods
- Test and validate equipment/devices performance that meet the needs of a transit environment (ease to use, fast and reliable)
- Demonstrate new fare collection methods can support BCT business rules of payment processing, financial reporting, data collection and reporting, and audit
- Demonstrate back-office functionalities including account management, reporting for revenue and transactions, and data sharing with MDT's back office system
- Identify cost and benefits for full deployment
- Demonstrate compliance with FTA requirements such as NTD reporting, Buy America, etc.

No.	Phase	Deliverable Description	Preliminary Acceptance Criteria
3.	7	EASY Card integration completed on 20 buses	Provider completed configuration of smart card processor that meets the requirements specified in Sections 2.8 and 3.1.9. The smart card processor can process EASY Cards according to the design documented in Phase 6. Provider completed all the professional services specified in Section 2.8 for the Pilot Program and met the requirements specified therein.
4.	7	Back Office Software for Easy Card Reporting and Invoicing	The back office software for EASY Card Reporting and Invoicing met the requirements specified in Sections 2.8 and 3.4.3 for EASY Card Integration
5.	7	Training - Business End-User Training (Back Office) and documentation for EASY Card Integration	Provider conducted End-User training and provided training documents as specified in Section 2.13
6.	7	Training - Operators/Drivers Easy Card Training	Provider-conducted the training and provided training documents as specified in Section 2.13
7.	7	System Validation	Test plan passed and approved by BCT

Phase 8: EASY Card Integration Full Rollout Preparedness (concurrent with Phase 9)

Duration: Two (2) months

Deadline: Completed within two (2) months from Notice to Proceed for Phase 8

Description: During this Phase, Provider will work with BCT to develop marketing and outreach strategies and material and to complete marketing initiatives to educate the Customers about the EASY Card. Provider shall also complete necessary training and documentation.

No.	Phase	Deliverable Description	Preliminary Acceptance Criteria
8.	8	Marketing	Provider completed all professional services, as specified in Section 2.12, for EASY Card marketing support. Customer educational materials for EASY Card have been received and approved by BCT, as specified in Section 2.12. User demo or video of the EASY Card, to facilitate training for BCT personnel and Customers, was received and approved by BCT, as specified in Section 2.12
9.	8	System Training (Back Office System Administrator, Power Users, and Business End Users) and documentation for EASY Card Integration	Provider conducted System training and provided training documents, as specified in Section 2.13
10.	8	Operations, Maintenance and Support Training and documentation	Provider conducted Operations, Maintenance and Support training and provided training documents, as specified in Section 2.13

Phase 9: EASY Card Integration with MDT (concurrent with Phase 8)

Duration: Two (2) months

Deadline: Completed within two (2) months from Notice to Proceed for Phase 9

Description: During this phase, Provider will complete EASY Card integration for the entire BCT fixed route bus fleet.

Pre-requisites for fixed route fleet implementation shall be satisfactory completion of user acceptance testing for proof of concept, as determined by BCT Contract Administrator.

Full deployment of EASY Card consists of implementing equipment and software on all BCT buses. An official Notice to Proceed (“NTP”) will be required from BCT to proceed with full deployment.

No.	Phase	Deliverable Description	Preliminary Acceptance Criteria
11.	9	EASY Card integration completed on entire fleet of buses	All fareboxes accept EASY Card as a form of fare payment and transfer related data internally that meet the requirements specified in Sections 2.8 and 3.1.9
12.	9	System Validation - Test Plan Passed and Approved by BCT	EASY Card transactions can be processed according to the fare rules outlined in Section 2.8

Phase 10: Final Acceptance Testing

Duration: Two (2) months

Deadline: Completed within two (2) months from Notice to Proceed for Phase 10

Description: During this phase, Provider will resolve any issues that arise prior to the completion of this phase, deliver all spare parts ordered by County, provide a complete listing of the end of

life dates for all equipment, and complete all final acceptance testing.

No.	Phase	Deliverable Description	Preliminary Acceptance Criteria
13.	10	A complete listing of the end of life date(s) for all equipment	Provider has provided documentation, as specified in Section 2.3
14.	10	Conduct Final Acceptance Testing	All preliminary acceptance criteria from previous phases has been marked as passed and the System works as specified in this Statement of Work

7 Optional Services

7.1 Transition & Disentanglement Services

The Parties acknowledge and agree that upon the expiration or termination of this Agreement, the good faith efforts of Provider to facilitate the smooth, efficient, and secure transition of data and services to another provider (or to BCT, to the extent applicable) without any unnecessary interruption or adverse impact on BCT operations (“Disentanglement”) is a critical objective of the Parties and a material obligation of Provider under this Agreement. All obligations of Provider under this Agreement shall be construed consistent with this objective.

At request of BCT, Provider shall provide prompt, good faith, and reasonable assistance to BCT in disentangling BCT data, business, and operations from the Software and, to the extent applicable, transitioning to a new software, system, or provider.

7.2 Optional Services, Additional Software/Licenses:

BCT may elect to acquire as Optional Services any of the professional services, training, equipment, software, or support and maintenance listed below. In addition, Optional Services includes any other professional services or equipment, if any, not required of Provider pursuant to this Statement of Work and that BCT’s Contract Administrator determines is integral to the objective(s) of any Phase, Deliverable, or System.

7.2.1 Mobile Ticketing Solution Options

- Allow Customers to complete trip planning within Broward County and the other Southeast Florida regions using BCT, as well as other transit providers in the region.
- Allow Customers to complete multimodal trip planning such as Uber/Lyft and B-Cycle.
- Provide the feature to integrated fare payment with other transportation providers, such as Uber/Lyft, B-Cycle.
- Accept payment options such as MasterPass - for users without credit/debit cards.
- Allow Customers, with a mobile device but no bank account, to purchase a mobile transit ticket using prepaid credit or debit cards or other form of payment at a sales outlet equipped with a retail point-of-sale terminal.
- Provide advertisement capabilities.

- Enable corporate partners and other schools/organizations to manage beneficiaries by linking their phone number or other account information to their benefits through a web portal. This feature will allow the participating clients to manage fare products available to their students/employees/beneficiaries and authorize and remove eligible or ineligible beneficiaries.
- Accept virtual EASY Cards from MDT.
- Accept EASY Pay Mobile Ticket App from MDT.

7.2.2 Fast Fare Validating Farebox Options

7.2.2.1 Limited-Use Smart Card Dispenser (Option in lieu of MCPU)

The farebox shall provide the capability to encode and issue limited use smart cards in lieu of issuing magnetic passes from an MCPU. The device shall be capable of encoding, printing, and dispensing limited-use (“LU”) smart cards from an internal supply of blank, unencoded stock. LU cards shall be capable of being encoded as passes or stored ride/value cards. It is understood that LU cards are intended for short-term use such as day passes.

Subsequent processing of the LU card shall be performed using the smart card processor.

7.2.2.2 Printing on a Document

The LU card dispenser shall have a thermal print head that may be used to print on the card at the time of issuance.

The LU card dispenser shall be capable of printing the following:

- Initial value on stored value documents and change cards
- Initial rides on stored ride documents
- Expiration date on period passes.

7.2.2.3 Change Cards

The LU card dispenser, under farebox logic command, shall have the ability to create and issue “change cards.” A change card is a document provided to the passenger in the event that more than the required amount is inserted into the farebox and the passenger would like to receive the difference between what was inserted in cash (coins and bills) and the required fare.

A change card shall function as a nonrenewable stored-value card on subsequent use.

7.2.2.4 LU Card Dispenser Replenishment

The LU card dispenser shall have an internal removable cassette that shall have sensors to indicate when the card stock is low, with approximately 50 cards remaining shall make it possible to determine the approximate amount of stock in the dispenser without having to open any lids or covers.

7.2.3 Optional Professional Services

- Integration of credit card payments with present Point of Sale (“POS”) system at BCT locations or with any other County payment system as deemed necessary by the County.

- New and/or additional software development, including, but not limited to, custom functionalities, features or enhancements which the Provider is not otherwise already required to provide under the terms of this Agreement
- New and/or additional mobile application interface development, testing, integration, and implementation.
- Integration with Miami-Dade County, Palm Beach County, and South Florida Regional Transportation Authority beyond any integration that is already covered elsewhere by this Statement of Work

7.2.4 Administrative Point-of-sale (“APOS”), Retail Point-of-sale (“RPOS”) and related fare media support equipment

Administrative Point of Sale (“APOS”) device is a functional set of equipment that provides the transit agency with the ability to create and sell media with products (i.e. Smart cards with stored value, period passes, or stored ride) to the public. APOS can be used at a customer service counter or other transit facilities open to the public. Retail Point-of-sale (“RPOS”) device is intended for locations outside of the transit property. RPOS can be used at retail stores (convenience, grocery, drugstores, etc.) or schools and libraries. Both APOS and RPOS requires Genfare LINK which provide the functionality of managing and monitoring these devices.

The POS equipment provided by Provider must be certified as Payment Application Data Security Standard (“PA-DSS”) compliant.

7.2.5 VENDSTAR™ III Ticket Vending Machines (“TVM”)

The Vendstar™ III ticket vending machine can accept cash or bank cards, dispense change, and issue any combination of paper tickets, magnetic cards, and smart cards.

7.2.6 VENDSTAR-E™

The Vendstar-e is a compact unit that offers the same capabilities as the Vendstar III except that it accepts bank cards only, allowing for a compact, attractively priced unit.

7.2.7 Farebox for future BCT new bus buys

Fast Fare validating fareboxes for future BCT new bus buys

7.2.8 Fast Fare-e Validator

The Fast Fare-e validator can process magnetic cards, smart cards and "virtual tickets" displayed on a mobile device. The validator can be integrated with existing Genfare fare collection system.

7.2.9 Handheld card validators

Handheld style of the Fast Fare-e Validator.

7.2.10 Portable Data Unit

A portable data unit (“PDU”) consists of a laptop computer equipped with an infrared data probe and appropriate software. The PDU, like the fixed GDS, shall execute the application software on

power-up and offer the user a menu of options such as probe farebox, review data, utilities, exit, etc.

When PDU probing is complete, the operator shall have the ability to transfer the collected data to the fixed GDS.

The PDU shall have the ability to function either as a portable probe or an electronic key – that is, the PDU shall make it possible to extract farebox data without opening the cashbox door, and conversely to open the cashbox door and empty the cashbox without extracting data.

8 Acceptance Testing

8.1 General

Acceptance testing shall serve to confirm that the entire system or Subsystem, as applicable, has been designed, built and installed with sufficient quality to meet the requirements of this Agreement.

8.2 Factory Testing

Prior to shipment, Provider shall test each item of equipment to determine that it complies with equipment specifications, and is free from operational defects and suitable for revenue service.

8.3 Preliminary Acceptance Testing

Provider shall install all equipment under this Agreement including fareboxes and other on-board equipment, revenue collection equipment, and the computer information system, and provide technical consultation to BCT staff. Preliminary acceptance testing shall consist of a reliability test and an accuracy test. If the equipment and all fareboxes and ancillary equipment have been delivered (and installed as required) and perform as expected, and when both the reliability and accuracy tests are passed), the System or Subsystem will be granted written preliminary acceptance.

If the System or Subsystem and related equipment, fareboxes, or ancillary equipment fail to perform as expected, Provider will be informed in writing by email and provided up to fourteen (14) calendar days to make corrections or adjustments to the equipment. Corrections and/or adjustment must continue to be made by Provider, using agreed upon durations by both parties, until all needed corrections and/or adjustments have been corrected and deemed functioning successfully by BCT.

8.4 Reliability Testing

During the thirty (30) calendar day test period, all failures will be recorded and analyzed. Failures deemed to be a result of a product defect or design flaw will be used to compute mean time between failures (MTBF). Failures due to human error, passenger abuse, vandalism, bent or defective media, or operation beyond specified limits or procedures will be excluded from this

computation. If MTBF meets the requirement of this contract, the fare collection system will be deemed to have passed the reliability test and testing will conclude

8.5 Accuracy Testing

Concurrently with the reliability test, the accuracy of the farebox shall be confirmed by auditing ten (10) randomly selected fareboxes per day. The selected fareboxes will contain cashboxes with a minimum of \$300.00 each in collected revenue. Accuracy will be judged by comparing revenue as determined by physical count to revenue as reported by the System. Fareboxes placed in bypass will not be counted and adjustments will be made for bogus coins. Accuracy requirements for non-revenue functions will be agreed upon at the initial project management meetings.

8.6 Final Acceptance Testing

When both the reliability and accuracy tests are passed by BCT, all fareboxes and ancillary equipment is delivered (and installed as required) by the Provider, and after all Final Acceptance Criteria for each Subsystem have been marked as passed by BCT, the System will be granted written Final Acceptance by the BCT Contract Administrator. Final payment shall be made only upon issuance by County of written notice of Final Acceptance of phases 1-10

9 Final Acceptance Criteria

As part of Phases 5b and 10, BCT's Contract Administrator will provide written Final Acceptance only upon County's verification that all preliminary acceptance criteria stated above has been successfully met by Provider and that the System (or applicable Subsystem) is working as described in this Statement of Work.

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Attachment A - Glossary of Terms

Glossary:	
BACK OFFICE	The system centrally administered to monitor fare collection devices, maintain necessary software, transmit and track fare payment information, process ticket sales transactions, provide customer service, convey necessary reports, and reconcile financial data.
BAR CODE	QR code used for the payment of a fare. The QR code will be either printed on a suitable paper card stock or on the display of a mobile “smart” phone.
CARD READER	A device that is able to read the information encoded on a magnetic card manually swiped through the reader’s slot. The card reader is a read-only device and cannot modify the coding on a swiped card.
CONTACTLESS SMART CARD	See “smart card.”
DRIVER	BCT bus operator, also referred to as ‘operator’ or ‘bus operator’
EASY Card	The cashless fare collection smartcard displaying the EASY Card logo that is currently accepted for fare payment when riding MDT and Tri-Rail
EMBEDDED TRANSFER	A transfer that is not issued as a separate document but instead is encoded on the passenger's stored ride or stored value card.
FARE DOCUMENT	A ticket made of paper or plastic that is processed electronically. The two types of fare document are magnetic fare cards and smart cards. Also known as a “fare card.”
FARE MEDIUM	Any item acceptable as payment of a transit fare. Typical fare media include coins, tokens, bills, paper tickets, magnetic tickets, mobile tickets and smart cards.
FARE TABLE	A matrix of full and reduced transit fares programmed into the farebox. The fare table consists of one or more fare sets specifying the fares for different classes of service, e.g., local or express. One fare set is activated at any given time depending on the service to which the vehicle is assigned.
HIGH SECURITY LOCK	A high security lock is pick-resistant and of the multi-tumbler type. It employs hidden and/or complex keyways to require the insertion and/or removal of the key in a uniquely correct position.
LIMITED-USE SMART CARD	A smart card having a relatively short operating life. Limited-use smart cards typically are not intended for reloading. Compare “reloadable smart cards.”
MAGNETIC CARD PROCESSING UNIT (“MCPU”)	A device that accepts, reads, and if necessary prints on and re-encodes a magnetic fare document and returns it to BCT. The MCPU may also be used to encode and issue magnetic fare documents such as transfers.
MAGNETIC FARE DOCUMENT	A paper or plastic card with an encoded magnetic stripe that may be used to obtain a transit ride. Magnetic fare documents may be stored ride cards, stored value cards, transfers, or passes.
OPERATOR CONTROL UNIT (“OCU”)	A separately mounted device that enables the driver to monitor and control the farebox. Also known as “driver control unit.”
PASS	A fare document good for unlimited transit rides, typically during a defined period of time, e.g., weekly, monthly. “Period passes” become valid and expire on specified calendar dates. “Rolling period passes” become valid for a predefined interval beginning on the date of first use. “Employee passes” are issued to agency employees and typically expire at long intervals.

PASSIVE TRANSFER	A type of embedded transfer that is automatically encoded on a stored ride/value card whether or not the passenger requests it.
ROUTE/RUN SEGMENTER	The ability of the farebox to group or "segment" a series of events and/or transactions that occur on a specific route and on a specific run (trip or block) and provide subtotals for purposes of data analysis. Normally all such route/run information is tagged with date and time.
RELOADABLE SMART CARD	A smart card manufactured using 30-mil plastic stock that may be periodically recharged and is intended for long term use, typically years.
SMART CARD	A fare card with embedded electronics that does not require insertion into a farebox card reader, but rather is held close to a designated location ("target") on the farebox in order to pay the fare. Smart cards may function as stored ride cards, stored value cards, or passes. See also "limited-use smart card" and "reloadable smart card."
STORED RIDE CARD	A farecard that is pre-encoded for one or more transit rides. Typically, one ride is deducted from the amount encoded each time the card is presented for fare payment.
STORED VALUE CARD	A magnetic fare document that is pre-encoded with monetary value which may be used to pay one or more transit fares. Typically, the appropriate fare is deducted from the value encoded each time the card is presented for fare payment.
SUMMARY DATA	Farebox data in which transactions and events are not individually recorded but are totaled in cumulative data registers. Compare "transactional data."
SWIPE READER	See "card reader."
TICKET	A fare document that may be used to pay a transit fare. When not specified as magnetic, a ticket is generally understood to mean a nonmagnetic fare document whose validity is determined by visual inspection.
TRANSACTIONAL DATA	Fare data in which every fare transaction is individually recorded and reported. Also known as "transaction detail."
TRANSFER	A limited duration fare document usually purchased and/or issued on initial payment of fare that enables the bearer to take one or more additional rides on other vehicles after exiting the first vehicle. A "magnetic transfer" has an encoded magnetic stripe and is issued and processed by a magnetic card processing unit.
VALIDATE	To determine that a fare medium tendered for payment is genuine and, in the case of electronic fare media, complies with time limits and other conditions of use.

Exhibit B – Payment Schedule

The rates specified below shall be in effect for the entire term of the Agreement, including any renewal term, unless the contrary is expressly stated below. Any goods or services expressly required under this Agreement for which no specific fee or cost is expressly stated in this Payment Schedule shall be deemed to be included, at no extra cost, within the costs and fees expressly provided for in this Exhibit B.

Deliverable Based Payments Table

The amounts set forth in the Fees column of the Deliverable Based Payments Table constitute 100% of the amount due to Provider for each such deliverable if fully delivered and accepted. Provider shall only invoice County for 85% of the amount due upon completion of each deliverable as illustrated in the Invoice Amt. Until Final Acceptance Column. Broward County will retain the remaining fifteen percent (15%) due for all deliverables prior to completion of phase 5, which retainage will only be paid upon County’s issuance of written notice of Final Acceptance of the Mobile Ticketing Subsystem (phases one (1) through five (5)). Broward County will likewise retain fifteen percent (15%) of all amounts due for all deliverables from phases six (6) to ten (10), which retainage will be paid upon County’s issuance of written Notice of Final Acceptance of the System.

Deliverable #	Phase	Deliverable Description	Fees	Invoice Amt Until Final Acceptance (total fees less retainage)
1	2	System Design Documents for: <ul style="list-style-type: none"> • WiFi for wireless data probing • Mobile Ticketing App and Web portal • Mobile Ticketing reports • PeopleSoft interface • Detailed site report identifying any site deficiencies at BCT Additional Deliverables: <ul style="list-style-type: none"> · Architectural diagrams (servers, applications, ports, data flow, firewalls) · Equipment requirements documents · Equipment List · As-built drawings for equipment placement on buses · IT security plan · ISO 9001 certificate(s) · Finalized Project Schedule 	55,900.00	47,515.00

2	2	<ul style="list-style-type: none"> · Independent laboratory test results for the Fast Fare Validating Farebox · Test Plans aligning with Acceptance Criteria (including revisions as requested by County) · Bus equipment validation · System acceptance · Functional acceptance 	20,000.00	17,000.00
3	3	<ul style="list-style-type: none"> · Hardware (garage) · Roles and Permissions · Payment Procession Plan set up · PCI Compliance · Data Collection and Reporting System, and Analytics · Overall Pilot System Validation - Test Plan Passed and Approved by BCT · Cashbox vaulting system upgrade for pilot testing the new cashboxes (COPANS) 	71,970.00	61,174.50
4	3	Install WiFi for pilot testing for wireless data probing (COPANS)	21,000.00	17,850.00
5	3	Data Probing Functionality (COPANS)	4,260.00	3,621.00
6	3	Network Manager Application updated to the latest version upon delivery	14,300.00	12,155.00
7	3	Database migration from Sybase to MS SQL 2012	27,200.00	23,120.00
8	3	Cashbox vaulting system upgrade for pilot testing the new cashboxes (COPANS)	21,444.00	18,227.40
9	3	Mobile Ticketing Mobile Phone App and Web portal available for testing and approval	5,070.00	4,309.50
10	3	Fast Fare validating farebox installed for Pilot Program on 20 buses. Fast Fare validating Farebox Equipment	275,000.00	233,750.00
11	3	Training (Operators/Drivers Mobile Ticketing)	9,750.00	8,287.50
12	3	Delivery of 2 FastFare Fareboxes for training	26,400	22,440.00
13	3	Factory testing	20,000.00	17,000.00

14	3	Spare parts as ordered by County pursuant to the procedures set forth in this Exhibit B.		
15	4	System Training (Back Office System Administrator, Power Users, and Business End-Users) and documentation for Mobile Ticketing Integration	9,750.00	8,287.50
16	4	Operations, Maintenance and Support Training and documentation	13,500.00	11,475.00
17	5a	Install WiFi for wireless data probing at both BCT garages (RAVENSWOOD).	25,260.00	21,471.00
18	5a	Cashbox vaulting system upgrade (RAVENSWOOD)	21,444.00	18,227.40
19	5a	Fast Fare installed on 377 buses/entire fleet buses	5,183,750	4,406,187.50
20	5a	Fast Fare Farebox Software Licenses (\$136 each for 377 fareboxes)	51,272.00	43,581.20
21	5a	<ul style="list-style-type: none"> · Mobile Ticketing App and Web portal access and functionality · Data Collection and Reporting System, and Analytics · PeopleSoft Interface · Regional Mobile Ticketing · System validation Test Plan Passed and Approved by BCT · Functional Validation Test Plan Passed and Approved by BCT · Garage Data System Sybase Database elimination 	59,250.00	50,362.50
22	5a	<p>Maintenance and Support for Phases 1 – 5:</p> <ul style="list-style-type: none"> · System testing/On-site support. One on-site Program Management/Technical Support during full deployment phase · Roll-out Deployment Strategy. Including but not limited to prep vehicles, hardware, installation, testing, configuration for added vehicles and milestones. 	52,500.00	44,625.00
23	5a	Spare parts as ordered by County pursuant to the procedures set forth in this Exhibit B.	TBD based on amount of parts ordered (no retainage on Spare Parts)	

24	5b	Release 15% retainage for Phases 1-5 upon County's written notice of Final Acceptance of the Mobile Ticketing Subsystem (Phases 1-5). "		
25	6	· EASY Card Integration Design Document · Test Plan aligned with Acceptance Criteria	150,000.00	127,500.00
26	7	· EASY Card integration completed on 20 buses · Back Office Software for Easy Card Reporting and Invoicing · System Validation	136,250.00	115,812.50
27	7	EASY Card initial Proof of Concept Training for operators	5,750.00	4,887.50
28	8	EASY Card Full Rollout Training · System Training (Back Office System Administrator, Power Users, and Business End-Users) and documentation for EASY Card Integration. · Operations, Maintenance and Support Training and documentation	10,750.00	9,137.50
29	9	EASY Card integration completed on entire fleet of buses	82,500.00	70,125.00
30	9	System Validation - Test Plan Passed and Approved by BCT	131,250.00	111,562.50
31	9	Maintenance and Support Phases 6 – 9 EASY Card. Support and software maintenance for the Proof of Concept	1,000.00	850.00
32	10	A complete listing of the end of life date(s) for all equipment	20,000.00	17,000.00
33	10	Release 15% retainage for phases 6-10 upon County's Notice of Final Acceptance.		
SUBTOTAL MOBILE TICKETING SYSTEM (Phases 1 - 5)*			5,989,020.00	5,090,667.00
SUBTOTAL EASY CARD SYSTEM (Phases 6 - 10)*			537,500.00	456,875.00
TOTAL*			6,526,520.00	5,547,542.00

***Total amounts for the Mobile Ticketing System, Easy Card System, and Retainage may vary based on spare parts ordered by County.**

With respect to Deliverable #19 above, to the extent Broward County requests in writing that any fareboxes not be installed, the amount invoiced to and owed by Broward County for Deliverable #19 shall

be reduced by \$550 for each farebox for which Broward County does not require installation.

Provider shall not invoice for any of the Deliverables in the table immediately above until Broward County’s written notice of preliminary acceptance of the applicable deliverable.

Support and Maintenance Services

The following Support and Maintenance Services fees will accrue, and Provider shall only invoice, as set forth below.

Specific Support and Maintenance Services	Unit or Term	Invoicing	Annual Fee
Mobile Ticketing Subsystem Support and Maintenance Services. Annual software support and maintenance for the initial 3 years.	Commences after County written acceptance of Phases 1-5.	Quarterly in arrears	\$45,600.00
EASY Card Support and Maintenance Services Annual software support and maintenance for the initial 3 years.	Commences after County written acceptance of Phases 6-10.	Quarterly in arrears	\$12,000.00

Provider anticipates that the Support and Maintenance Services will be provided remotely. However, to the extent Provider is not able to provide Support and Maintenance Services remotely in a manner that does not cause undue delay, Provider shall provide onsite maintenance at no extra charge to County. Any travel expenses or fees incurred by Provider under this Agreement for Support and Maintenance Services shall be the sole responsibility of Provider, unless otherwise expressly stated in this Agreement or applicable Work Authorization. Support that Provider can provide remotely in accordance with the requirements of this Agreement but provides onsite at County’s express request will be invoiced in accordance with the hourly rates specified under the heading “Optional Professional Services.”

Spare Parts

Provider shall provide spare equipment in the types and quantities requested by the County Contract Administrator up to the not to exceed amount set forth in Section 5.1 of the Agreement. The Contract Administrator shall specify by Purchase Order the precise composition of the spares to be provided pursuant to this Section.

Provider shall not invoice County for any Spare Parts until receipt of County’s written notice of Final Acceptance of such spare parts and shall invoice County at the prices set forth in this Exhibit (if listed) or 10% discount on the manufacturer’s listed pricing, whichever is less.

The spare part prices set forth in this Exhibit shall remain firm for the Initial Term. If upon conclusion of the Initial Term the County elects to extend the Agreement, the prices for the spare parts ordered during

any Renewal Term shall increase by no more than the 3%/CPI Escalator (as defined below) for each Renewal Term.

a. Fast Fare Spare Parts

Part No.	Description	Unit Price
A00188-0001	BEARING, FLANGED	\$ 0.96
A00375-0002	PAD, BUMPER-BLACK	\$ 0.32
A01417-0003	MolyKote 33 Lubricant	\$ 26.02
A01467-0001	WASHER, FINGER-COVER LOCK	\$ 0.19
A01793-0001	O-RING, DRIVE TIRE	\$ 0.89
A13888-0001	S/A SOLENOID PRINTER	\$ 35.64
A14115-0002	S/A CABLE HP	\$ 20.13
A14243-0004	TRiM sensor cleaning cards (pack of 100)	\$ 82.31
A14788-0001	166-2M-3MM-N/F, TIMING BELT	\$ 2.21
A16054-0001	S/A IDLER TAKE-UP	\$ 32.55
A21335-0004	CAM, LOCK-TOP COVER	\$ 1.71
A21459-0003	PIN, LOCK-w/ FLANGE	\$ 3.07
A22305-0001	CAM, LOCK-BILL XPORT	\$ 1.02
A22338-0001	LOCK, BILL XPORT (1561)	\$ 8.26
A28169-0001	BALL, MOUNT 1 1/2" (RAM)	\$ 14.90
A28348-0001	WINDOW, BARCODE	\$ 17.33
A28495-0001	LINK, SWING	\$ 3.80
A28500-0001	GASKET, DISPLAY- FAST FARE	\$ 2.78
A28503-0001	DISPLAY, IMPACT RESIST. POLYCARB	\$ 3.20
A28599-0001	S/A, WIRING HARNESS, CASHBOX ID	\$ 7.10
A28642-0002	DISPLAY, LCD, FASTFARE (OSD 043T1728-29)	\$ 88.98
A28829-0001	GUIDE, CARD-PCB	\$ 1.66
A28838-0001	BRACKET, MOUNTING, ANTENNA	\$ 13.33
A29029-0002	SHAFT, BYPASS	\$ 5.18
A29126-0002	S/A, CABLE, GROUND	\$ 4.35
A29140-0002	S/A SWIPE READER-FAST FARE	\$ 137.91
B00016-0055	SPRING, COMPRESSION	\$ 0.47
B11973-0G05	HEDS-5500 G05 OPTICAL ENCODER	\$ 64.45
B12698-0001	PRINT HEAD KHT-51-8MPE1-GF	\$ 224.91
B13859-0002	S/A OPTICAL SENSORS PRINTER	\$ 44.97
B13885-0002	S/A MOTOR MAIN DRIVE	\$ 105.57
B15673-0001	S/A PRINT HEAD	\$ 354.35
B15704-0002	MAG HEAD P/N H814029	\$ 59.35
B15705-0002	S/A MAG HD DUAL P/N H814030	\$ 71.19
B16059-0001	CABLE.RIBBON PRINT SS89-028080	\$ 9.86
B21427-0002	PLATE, STUD-HINGE	\$ 8.23

Part No.	Description	Unit Price
B22014-0006	HINGE,COVER	\$ 9.13
B22193-0001	S/A PCB, MOTOR SENSOR	\$ 56.40
B22271-0002	S/A, SPEAKER	\$ 17.24
B23634-0001	S/A PCB, MOTOR CNTRL BILL XP	\$ 63.75
B23901-0002	S/A DRIVE MOTOR	\$ 62.54
B24777-0007	FUSE,MINI BLADE 15 AMP #297015	\$ 1.35
B27928-0001	S/A TRANSPONDER, CBID-V2 (needs to go with the cashbox)	\$ 84.79
B28048-0001	BRACKET, TRIM DOCKING STATION	\$ 52.98
B28058-0001	S/A, DUAL HEAD SWIPE READER BOARD	\$ 138.39
B28083-0001	S/A, CAP TOUCH BOARD	\$ 138.39
B28364-0001	S/A, IR PORT BOARD	\$ 98.46
B28527-0002	COIN CUP, RECTANGULAR	\$ 36.05
B28535-0001	S/A HARN., COIN CUP/IR PORT/COIN VAL.	\$ 13.33
B28536-0001	S/A HARN., TRIM DOCKING	\$ 15.92
B28537-0001	S/A HARN., LID INTERCONNECT	\$ 37.95
B28538-0001	S/A HARN., OCU CONNECTION	\$ 18.06
B28539-0001	S/A HARNESS, WiFi ANTENNA COAX	\$ 30.25
B28540-0001	S/A HARN. BARCODE READER CONNECT	\$ 5.92
B28541-0001	S/A HARN., DOOR LOCK, CONNECT CHASSIS	\$ 12.18
B28542-0001	S/A HARN., PWR/COMM/PEDESTAL	\$ 29.85
B28543-0001	S/A HARN., BILL VAL./TRANSPORT	\$ 39.99
B28544-0001	S/A HARN., LID OPEN SWITCH	\$ 12.89
B28544-0002	S/A, COIN BYPASS SWITCH	\$ 12.89
B28567-0001	S/A, CABLE, MAGNETIC SWIPE CARD READER	\$ 6.42
B28596-0001	S/A, WIRE HARNESS, TRIM, DOCKING, EXT.	\$ 17.71
B28597-0002	S/A, WIRING HARNESS, POWER, COMM, CHASSI	\$ 51.89
B28598-0001	S/A, WIRE HARN., DOOR LCK CON, PEDESTAL	\$ 19.72
B28644-0001	CABLE, FLEX.-CAP TOUCH BD.	\$ 4.29
B28647-0002	S/A, BARCODE READER MODULE	\$ 495.00
B28713-0001	SHEILD, BARCODE	\$ 28.78
B28714-0001	S/A, BELT, FAST FARE	\$ 258.62
B28810-0001	S/A CABLE, EXTERNAL PWR-FAST FARE, REV.C	\$ 48.61
B28821-0001	LIGHT PIPE, OVAL	\$ 35.99
B28858-0001	S/A, PCB, CABLE, SWIPE READER, ILLUMINAT	\$ 65.27
B28859-0001	S/A, PCB, CABLE, BILL ENTRY ILLUMINATION	\$ 36.50
B28860-0001	S/A, PCB, CABLE, COIN ENTRY ILLUMINATION	\$ 36.35
B28861-0001	S/A, CABLE, SMART CARD INTERCONNECT	\$ 17.24
B28896-0002	S/A, SMART CARD READER	\$ 450.00
B28950-1002A	CABLE, .5MM CENTER-FFC JUMPER (10 CIRCUIT)	\$ 3.62

Part No.	Description	Unit Price
B28973-0001	INSULATOR, FASTFARE COVER	\$ 0.55
B28973-0002	INSULATOR, FASTFARE COVER-DISPLAY RIBBON	\$ 1.57
B29275-0001	BRACKET, SWING ANGLE	\$ 8.76
B29743-0001	S/A, BYPASS CUP	\$ 6.21
C09132-0006	32MXL, .14" WIDE, N/F, TIMING BELT	\$ 2.16
C09132-0023	BELT, GROOVED TIMING	\$ 8.24
C12675-0003	S/A PCB,POWER SUPPLY-MARTEK	\$ 294.29
C13873-0001	S/A HARNESS POWER SUPPLY	\$ 20.52
C14201-0001	140MXL, .25"WIDE, N/F, TIMING BELT	\$ 4.73
C22245-0003	GUIDE, BILL TRANSPORT	\$ 29.66
C23922-1003	S/A, CABLE, OCU, EXT GND, 3FT	\$ 91.58
C26389-0001	ANTENNA,2.4GHZ ANT-2.4-WRT-RPS	\$ 30.19
C26499-0001	ARM, RAM MOUNT -6" LG.	\$ 21.93
C28307-0001	S/A, PEDESTAL BOARD	\$ 123.93
C28350-0001	S/A, BACKPLANE BOARD	\$ 186.59
C28501-0001	BRACKET, DISPLAY	\$ 27.15
C28602-0019	S/A, COIN VALIDATOR CC TALK NRI (part may differ per end user)	\$ 316.96
C28653-0001	S/A, MOUNTING PLATE & BALL	\$ 34.92
C28667-0002	CONVERTER, DC-DC (MARTEK)	\$ 305.42
C28702-0001	S/A, MAGTEK SWIPE READER (MUST be programmed)	\$ 114.92
C29328-0001	S/A, WIFI ADAPTER BOARD	\$ 122.00
D18631-0008	S/A CASHBOX,S.S.,TALL,DUAL, W/CBID	\$ 624.64
D21126-0007	S/A PCB, CONTROL-TRIM 2 (W/OBAT. SOCKET)	\$ 652.91
D22070-0003	S/A, CARD CASSETTE	\$ 154.36
D22192-0007	S/A TRIM, MAGNETIC-FAST FARE FAREBOX	\$ 3,870.00
D22597-0001	S/A PCB, TRIM CONVEYOR	\$ 297.65
D22832-0001	S/A OCU, 30 BUTTON	\$ 928.80
D23130-0005	S/A PCB, MOTOR CONTROL	\$ 182.82
D23696-0005	BILL TRANSPORT ASSEMBLY	\$ 608.70
D23903-0001	S/A CONVEYOR	\$ 1,142.45
D26299-0002	VALIDATOR, BILL (BV08) w/ CC TALK	\$ 483.61
D28483-0001	S/A, LID BOARD	\$ 241.80
D28496-0001	S/A MODULE, CONTROLLER PCB	\$ 1,109.53
D28728-0001	S/A DOOR LOCK MOTOR	\$ 318.11

b. Vault Receiver Spare Parts

Part No.	Description	Unit Price
A00845-0001	PIN, BRAKE	\$ 6.44
A00846-0001	BRAKE, KEY STOP	\$ 21.56

A00891-0001	GEAR, MITER	\$ 60.22
A01798-0001	WASHER	\$ 1.44
A03069-0001	BEARING,FLANGE	\$ 16.23
A03397-0001	PLUG.BUTTON; CAPLUG #BPF-1/2	\$ 0.20
B00010-0324	PIN,ROLL 3/32X.750	\$ 0.20
B00010-0432	ROLL PIN 1/8X1 SP45-8-16	\$ 0.20
B00054-0004	SPRING #LE037CD-10	\$ 1.35
B00054-0006	SPRING.EXT.LE049D-13 MODIFIED	\$ 2.03
B00818-0003	BEARING, #P812-8 TEFLON,PLAIN	\$ 8.51
B00818-0004	BEARING,TEFLON,#P1216-6 PLAIN	\$ 11.43
B00827-0001	BEARING, FLANGE (.#BJ4F101408)	\$ 13.77
B00827-0002	BEARING,FLANGE (#BJ4F081206)	\$ 9.40
B00827-0003	BEARING,FLANGE (#BJ4F121608)	\$ 16.66
B00876-0002	CATCH, CASHBOX	\$ 53.31
B00881-0001	CASH BOX GUIDE, LEFT	\$ 52.08
B00881-0002	CASH BOX GUIDE, RIGHT	\$ 52.08
B01785-0001	KEY, WOODRUFF	\$ 0.86
B01785-0002	KEY, WOODRUFF	\$ 4.01
B01028-0001	DOOR, BIN SLIDE	\$ 38.11
B01066-0001	LOCK , SLIDE BIN	\$ 130.01
B01070-0001	HANDLE, SLIDE BIN	\$ 77.90
B12541-0002	KEY HOUSING	\$ 214.34
C03909-0001	S/A PC BOARD LINE DRIVER	\$ 68.94

c. Diagnostic Equipment

Part No.	Description	Unit Price
D29142-1004	Fast Fare Test Simulator	\$ 12,330.00
D27996-0004	TRIM Diagnostic Kit	\$ 2,754.00

Optional Services

Description	Unit/Term	Invoicing	Fee
Extended Software Support and Maintenance (Years 4-10).* This includes all software delivered in this Agreement.	Yearly	Quarterly in arrears	\$93,000.00
Farebox Extended Warranty (Years 2-10).* First year farebox warranty included in farebox price.	Yearly	Quarterly in arrears	\$133,000.00
Hosting Fees for Mobile Ticketing (Years 4-10).*	Yearly	Quarterly in arrears	\$12,000.00
GenfareLink - Initialization Services (support equipment in Section 7.2.4). Initial implementation, set-up, configuration, license fee. Includes e-Fare	One Time	Upon receipt of written notice of Final	\$248,000.00

with organization management (Section 7.2.1 7th bullet).		Acceptance by County	
GenfareLink - Ongoing Software Maintenance and Support and Hosting Fees (support equipment in Section 7.2.4).	Yearly	Quarterly in arrears	\$36,000.00
Integration of credit card payments with present Point of Sale (“POS”) system at BCT locations or with any other County payment system as deemed necessary by the County.	One Time	Upon receipt of written notice of Final Acceptance by County	Per Work Authorization as stated below
New and/or additional software development, including, but not limited to, custom functionalities, features or enhancements which the Provider is not otherwise already required to provide under the terms of this Agreement	One Time	Upon receipt of written notice of Final Acceptance by County	Per Work Authorization as stated below
New and/or additional mobile application interface development, testing, integration, and/or implementation	One Time	Upon receipt of written notice of Final Acceptance by County	Per Work Authorization as stated below

* For time periods after the first year of the period indicated above, Provider may increase the fees stated on an annual basis with at least ninety (90) days' advance written notice to County, provided that such increase per annum shall not exceed the 3%/CPI Escalator. The increase or decrease in CPI shall be calculated as follows: the difference of CPI current period less CPI previous period, divided by CPI previous period, times 100. The CPI current period shall mean the most recent published monthly index prior to contract anniversary. The CPI previous period shall mean for the same month of the prior year. All CPI indices shall be obtained from the U.S. Department of Labor table for Consumer Price Index - All Urban Consumers (CPI-U): US city average, with a base period of 1982-84 = 100, and not seasonally adjusted. The lesser of 3% and the foregoing CPI calculation is referred to herein as the “3%/CPI Escalator.”

Optional Services Credit:

Once the County purchases, through executed Work Authorizations, in the aggregate, \$300,000 in Optional Services (“Threshold Amount”), Provider shall provide County with a \$30,000 credit toward such Optional Services, which credit shall be applied toward the purchase that causes the County to reach the Threshold Amount; or, if such purchase is for less than the \$30,000 credit, Provider shall apply the credit toward the entire purchase price and provide the County any remaining credit amount for any future purchases. In the event the County has any remaining credit upon termination or expiration of the Agreement, Provider shall reimburse the County an amount equal to the remaining credit within fifteen (15) days of the Agreement’s expiration or termination. Additionally, once the County reaches the \$300,000 threshold, any future Optional Services shall receive a ten percent (10%) discount (including the applicable portion – the difference between the total aggregate purchases of Optional Services and \$300,000 – of any purchase that causes County to exceed the \$300,000 threshold).

The fees for any Optional Services for which pricing is not included herein shall be negotiated by the Parties prior to execution of a Work Authorization and corresponding Statement of Work for such services.

Optional Professional Services

Description	Unit/Term	Invoicing	Fee
Project Implementation	Hourly	Monthly in arrears	\$135
Database Administration	Hourly	Monthly in arrears	\$135
Software Development	Hourly	Monthly in arrears	\$135
Field Engineering for On-Site support	Hourly	Monthly in arrears	\$135

Any travel expenses or fees incurred by Provider in the performance of Optional Professional Services under this Agreement shall be the sole responsibility of Provider, unless otherwise expressly stated in this Agreement or the applicable Work Authorization.

The fees for Optional Professional Services set forth in this Exhibit shall remain firm for the Initial Term. If upon conclusion of the Initial Term the County elects to extend the Agreement, the prices for the Optional Professional Services purchased during any Renewal Term shall increase by no more than the 3%/CPI Escalator for each Renewal Term.

Optional Hardware

Description	Unit Price
LU Card Dispenser (Section 7.2.2.1, 2, 3, 4) Price reflects additional cost of replacing TRiM with LU Dispenser	\$500.00
Administrative Point of Sales Device (Section 7.2.4) APOS with Smart Card Printer/Encoding Workstation	\$27,500.00
Retail Point of Sales Device (Section 7.2.4, 7.2.1 5th bullet) RPOS, it is recommended as equipment for Section 7.2.3 also	\$8,850.00
Vendstar-4 Ticket Vending Machine (Section 7.2.5) Full Function Ticket Vending Machine - Accepts Coins, Bills, Credit/Debit Cards. Dispenses Magnetic Cards and/or Smart Cards	\$58,683.00
Vendstar-e Ticket Vending Machine (Section 7.2.6) Limited Function Ticket Vending Machine - Accepts Credit/Debit Cards. Dispenses Magnetic Cards and/or Smart Cards	\$42,265.00
Farebox for future BCT new bus buys (Section 7.2.7), card reader included CPI/3% Escalator applied on an annual basis to any fareboxes purchased after completion of the first year following the Effective Date.	\$13,450.00
Fast Fare-e Validator (Section 7.2.8) Stand-alone bar code and smart card reader for Mobile Ticketing and Easy Card acceptance	\$2,200.00
Handheld Card Validator (Section 7.2.9) Handheld Card Validator	\$3,950.00
Portable Data Unit (Section 7.2.10) Industrial laptop with all software and FastFare probing ability	\$18,850.00

Provider shall not invoice County for any Optional Hardware until receipt of County's notice of Final Acceptance of such Optional Hardware.

Exhibit C - Support and Maintenance Services

1. System Support and Maintenance Services

Provider shall provide County with Support and Maintenance Services so as to ensure and maintain optimal performance of the System consistent with the Statement of Work and the Documentation, which service shall include the following:

- Timely response and resolution of any errors, defects, malfunctions or other issues affecting the use or performance of the System (collectively, "Events") in keeping with the Required Response Times stated below;
- Providing and facilitating the installation of updates, upgrades and releases as they are made available to Provider's other clients;
- Notification of patches and updates affecting security, and applying, testing, and validating the appropriate patches and updates and/or workarounds on a test version of the application before distribution.
- On-call availability via telephone and e-mail during normal business hours to receive and respond to inquiries or questions from County regarding use, operation, or functionality of the System;
- Emergency availability via telephone and e-mail after hours to receive and respond to specific technical problems and questions relating to the operation or functionality of the System;
- Use of ongoing best efforts to maintain the optimal functioning of the Software, to correct programming and coding errors, and to provide solutions to known errors affecting the operation of the System;
- Routine notification to County as it becomes available of new or updated information pertaining to the System and the Documentation.

Support and Maintenance Services shall be provided via telephone, electronic communication, on-site, or as otherwise appropriate to address the issue. Any update, upgrades, releases, or other modifications to the Software shall be provided via electronic communication and for download via the Internet, if practicable. To the extent necessary to resolve an Event or other support request, Provider shall provide support on-site at any office or location of a Broward County agency. Where on-site support is not necessary to resolve an Event or other support request but is nonetheless requested by County, Provider may invoice County for such service at the applicable rate set forth in Exhibit B. Provider agrees that its personnel shall be suitably trained in the operation, support and maintenance of the Software and System. If in the reasonable opinion of County, the personnel provided are not acceptable, Provider agrees to provide suitable replacements.

Support and Maintenance Services do not include:

- Travel expenses where onsite support is not reasonably necessary, but the County nonetheless requests it.
- Any shipping costs required in the course of an intervention.

Support and Maintenance Services will not apply in the event of:

- An unauthorized modification to the Software configuration or programming;
- An unauthorized modification to the Equipment;

- Where County unreasonably fails to report an Event, which failure significantly impairs Provider’s ability to provide Support and Maintenance Services hereunder.
- Any Event that is caused by County’s abuse or misuse of the System that is not foreseeable, or an act of God (such as a flood).

Required Response Times. Upon notice by County of an Event, Provider shall address and resolve the Event consistent with the following priority, response and resolution levels:

Priority Description	Definition	Response Time After Notice	Resolution Time after Notice
Critical	Event that renders the Software and/or interfaces inoperable or allows unauthorized access.	30 minutes	Work until corrected. Target is within 12 Hours
High	Event that results in a significant impairment of performance of the Software or impairs essential operations or allows unauthorized access	4 hours	Work until corrected. Target is within 24 hours
Low	Event that has minor impact to County's business and that does not impact normal operation of the System.	24 hours	Work until corrected. Target is 10 Business Days

Notwithstanding the above-stated schedule, Provider shall use its continuing best efforts to correct the Event as expeditiously as it can. The Priority Description for each error or issue shall be reasonably determined by the Contract Administrator.

With respect to Response Time After Notice, as indicated above, Provider shall, at a minimum, provide an e-mail response stating the status and an action plan within the applicable time period noted.

With respect to Resolution Time After Notice, as indicated above, if an Event is not resolved within the Target time frame, (a) for Critical and High priority Events, Provider shall ensure that its most senior personnel are assigned to resolving the Event, on a full-time basis and (b) for Low priority Events, Provider shall ensure that senior personnel are assigned to resolving the Event.

Records and Reports. Provider will maintain records of its Support and Maintenance Services, and, upon County’s request, provide County with online access to an Event ticketing system, which shall include at least the following:

- Date, time, and name of contact for each Event;
- Date and time of response by Provider;
- Description of Event and analysis of error, defect, or other issue causing Event;
- All steps and actions taken to resolve the Event;
- Date and time of resolution and County representative notified of resolution; and
- All equipment and/or labor costs associated with resolution.

Provider shall provide monthly reports of Provider's average monthly compliance with the Required Response Times.

Failure to Meet Required Response Times. If Provider fails to meet the Required Response Times, County may offset against any sums due Provider \$500 for each time in the preceding month that Provider's response time exceeds the Required Response Times, which the Parties agree is a fair and reasonable approximation of County's negative financial impact caused by the delay in Provider's response.

Downtime Maintenance Credit. If a High or Critical Event is not resolved or reduced to a Low priority level within the target resolution time after notice, Provider will refund to County five percent (5%) of the monthly fee (or monthly pro rata equivalent, if the fee is other than monthly) for Support and Maintenance Services for each such Event that was not resolved or reduced within the applicable time frame. Such refunds will be paid within 10 days or at County's option, may be credited against future sums due to Provider. This refund shall be in addition to any other remedy that is available in the event of a breach of the Agreement.

Notwithstanding the foregoing, Provider shall not have any liability for any response times that exceed the Required Response Times or resolution times that exceed the committed time frame for resolution, in each case, to the extent such longer response or resolution times are due to (a) any Force Majeure event (as described in Section 14.25 of the Agreement) or (b) any action or inaction by, or event caused by, County or a third party (including any delay by County in granting access to the applicable system to Provider).


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Exhibit D - Insurance Requirement

The following coverage is deemed the minimum insurance required for this project. The selected firm must be prepared to provide proof of insurance commensurate with or in excess of this requirement. Any deviation is subject to the approval of Risk Management.

TYPE OF INSURANCE	MINIMUM LIABILITY LIMITS		
		Each Occurrence	Aggregate
COMMERCIAL GENERAL LIABILITY Broad form or equivalent <i>Including::</i> <input checked="" type="checkbox"/> Premises–Operations <input type="checkbox"/> Explosion, Collapse, Underground Hazards <input checked="" type="checkbox"/> Products/Completed Operations <input checked="" type="checkbox"/> Contractual Liability <input checked="" type="checkbox"/> Personal Injury	Bodily Injury		
	Property Damage		
	Combined single limit Bodily Injury & Property Damage	\$ 1 mil	\$ 2 mil
	Personal Injury		
BUSINESS AUTO LIABILITY* COMMERCIAL FORM <input checked="" type="checkbox"/> Owned *MAYBE WAIVED <input checked="" type="checkbox"/> Hired IF NO AUTO IS TO <input checked="" type="checkbox"/> Non-owned BE USED IN PERFORMANCE OF <input checked="" type="checkbox"/> Any Auto SERVICES	Bodily Injury (each person)		
	Bodily Injury (each accident)		
	Property Damage		
	Combined single limit Bodily Injury & Property Damage	\$ 1 mil	
EXCESS/UMBRELLALIABILITY <i>May be used to supplement minimum liability coverage requirements.</i>	Follow form basis or Add'l insd endorsement is required		
<input checked="" type="checkbox"/> WORKERS' COMPENSATION <input checked="" type="checkbox"/> EMPLOYERS' LIABILITY	Chapter 440 FS (each accident)	STATUTORY \$ 1 mil	U.S. Longshoremen & Harbor Workers' Act & Jones Act is required for any activities on or about navigable water
	(each claim)	\$ 1 mil	
<input type="checkbox"/> PROFESSIONAL LIABILITY (E & O)	Extended coverage period	2 years	
<input type="checkbox"/> BUILDER'S RISK (PROPERTY) "ALL RISK" WITH WIND AND FLOOD Coverage must remain in force until written final acceptance by County.	Maximum Deductible: \$10 k DED for WIND or WIND & FLOOD not to exceed 5% of completed value CONTRACTOR IS RESPONSIBLE FOR DEDUCTIBLE		Completed Value form
	<input type="checkbox"/> Installation floater Coverage must be "All Risk", completed value. Coverage must remain in force until written final acceptance by County.	Maximum Deductible: \$10 k CONTRACTOR IS RESPONSIBLE FOR DEDUCTIBLE	
DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES: REFERENCE: Mass Transit- SYSTEM AND SERVICES AGREEMENT			
CERTIFICATEHOLDER:			
Broward County 115 South Andrews Ave Suite 210 Fort Lauderdale, FL 33301			

Digitally signed by TIMOTHY CROWLEY
 DN: dc=cty, dc=broward, dc=bc, ou=Organization, ou=BCC, ou=RM, ou=Users, cn=TIMOTHY CROWLEY
 Date: 2018.01.11 13:06:42 -05'00'



Risk Management Division

Exhibit E – Work Authorization Form
WORK AUTHORIZATION FOR AGREEMENT _____

Contract Number: _____
Work Authorization No. _____

This Work Authorization is between Broward County and _____ (“Provider”) pursuant to the Agreement, executed on _____. In the event of any inconsistency between this Work Authorization and the Agreement, the provisions of the Agreement shall govern and control.

Services to be provided: [DESCRIBE IN DETAIL]

Agreement at issue is ___ Lump Sum/ ___ Not-to-Exceed for amount: \$ _____

The time period for this Work Authorization will be from the date of complete execution until ____ (___) days after County’s Notice to Proceed for the Services to be provided under this Work Authorization, unless otherwise extended or terminated by the Contract Administrator.

Fee Determination: Payment for services under this Work Authorization is as follows:

Professional Services	\$ _____
General Services	\$ _____
Goods/Equipment	\$ _____

Total Cost of this Work Authorization \$ _____

The foregoing amounts shall be invoiced by Provider upon written acceptance by County of all goods and services provided under this Work Authorization.

County

	Contract Administrator		Date
Project Manager		Board and/or Designee	Date

Provider

	Signed		Date
Attest	Typed Name		
	Title		

Exhibit F - Service Level Agreement

Service Level Agreement

In connection with all Services provided to County under the Agreement, Provider shall, at no additional cost to County, meet or exceed the requirements in this Service Level Agreement ("SLA") including, as applicable, as to Application Service Provider ("ASP") hosting or Software as a Service ("SaaS"). The standards set forth herein are intended to reflect the current industry best practices for the Services. Any capitalized terms not defined herein refer to those defined terms in the Agreement.

Any item addressed in this SLA that requires approval by County must be approved in writing. The Contract Administrator and Director of County's Division of Enterprise Technology Services ("ETS") are authorized to approve those items on behalf of County.

1. Security

1.1 Provider will ensure that County has the ability to authenticate all access by username, password, or two-factor. Provider shall restrict access to County data to a specific source static IP address.

1.2 Provider will support encryption using at least Advanced Encryption Standard 256-bit encryption keys ("AES-256") or current industry security standards for the connection from County to Provider's production network.

1.3 If and to the extent Provider accepts, transmits or stores any credit cardholder data on behalf of the County, or if and to the extent that Provider or its Software or Services is reasonably determined by County to potentially impact the security of County's cardholder data environment (CDE), Provider shall comply with the most recent version of the Security Standards Council's Payment Card Industry ("PCI") Data Security Standard (PCI-DSS), including complying with the following requirements:

1.3.1 Prior to execution of this Agreement, after any significant change to the CDE, and annually Provider shall provide to County:

- a) A copy of their Annual PCI DSS Attestation of Compliance (AOC);
- b) A written acknowledgement of responsibility for the security of cardholder data the service providers possess or otherwise store, process or transmit on behalf of the County, or to the extent that the service provider could impact the security of the county's cardholder data environment.
- c) A PCI DSS responsibility matrix that outlines the exact PCI DSS Controls are the responsibility of the service provider and which controls the service provider shares responsibility with the County.
- d) If Provider subcontracts or in any way outsources the CDE processing, Provider is responsible for providing the AOC for the subcontractor or payment gateway to the County.
- e) Provider agrees that it is responsible for the security of the County's cardholder data

that it possesses, including the functions relating to storing, processing, and transmitting of the cardholder data.

- f) Provider will immediately notify Agency if it learns that it is no longer PCI DSS compliant and will immediately provide Agency the steps being taken to remediate the non-compliance status. In no event should Vendor's notification to Agency be later than seven (7) calendar days after Vendor learns it is no longer PCI DSS complaint.
- g) Provider acknowledges that any indemnification provided for under the referenced Contract applies to the failure of the Vendor to be and to remain PCI DSS compliant.

1.3.2 Provider shall enforce automatic disconnect of sessions for remote access technologies after a specific period of inactivity with regard to connectivity into the County infrastructure. (PCI 12.3.8)

1.3.3 Provider shall activate remote access from vendors and business partners into the County network only when needed by vendors and partners, with immediate deactivation after use. (PCI 12.3.9)

1.3.4 Provider shall implement two-factor authentication for securing remote access outside the network into the County's environment with access to any stored credit card data. (PCI 8.3)

1.3.5 Provider shall ensure all non-console administrative access to the SaaS System connecting to the County environment is encrypted. (PCI 2.3)

1.3.6 Provider shall maintain a file integrity monitoring program to ensure critical file system changes are monitored and approved with respect to County data. (PCI 10.5.5)

1.3.7 Provider shall ensure personal firewall software is installed on any mobile or employee-owned device that manages the County's Cardholder Data Environment ("CDE") and connects to the Internet when outside the network in accordance with PCI Standard. (PCI 1.4)

1.3.8 If software is a payment application which processes, stores, or transmits credit card data, the VISA Cardholder Information Security Program ("CISP") payment Application Best Practices and Audit Procedures shall be followed and current validation maintained as part of PCI DSS program.

1.4 Provider shall restrict inbound and outbound traffic to the County network to "deny all, permit by exception" configuration. (PCI 1.2.1).

1.5 All inbound and outbound connections to the County cardholder environment must use TLS 1.2 or greater.

1.6 Provider's wireless networks shall be configured using current industry security standards to encrypt and protect communications of County information.

1.7 Provider datacenter agrees to achieve the Statement on Standards for Attestation Engagement No. 16 (“SSAE 16”) criteria for security, availability, and confidentiality for the Services, the Software, and the System. All servers that Provider uses to provide Services under the Agreement shall be protected behind a layer of firewalls, the initial configuration diagram of which will be provided to County upon County’s request. Any subsequent changes are subject to approval by County, which shall not be unreasonably withheld. All database servers will be protected behind a second set of internal firewalls in compliance with Section 1.14 below.

1.8 Provider shall ensure that facilities that house the network infrastructure which hosts County data are physically secure against threats such as unauthorized access and natural and environmental hazards.

1.9 Provider shall ensure entry controls are in place to limit and monitor physical access to systems housing the County environment.

1.10 Provider shall ensure that separation of duties and least privilege are enforced for privileged or administrative access to County’s data and systems.

1.11 Provider’s procedures for the following must be documented and provided to County within a mutually agreed time of the execution date of this Agreement:

- 1.11.1 Evaluating security alerts and vulnerabilities;
- 1.11.2 Installing security patches and service packs;
- 1.11.3 Intrusion detection, incident response, and incident escalation/investigation;
- 1.11.4 Access and authorization procedures and resetting access controls (i.e., password policy);
- 1.11.5 Risk analysis and assessment procedures;
- 1.11.6 User access and termination procedures;
- 1.11.7 Security log review
- 1.11.8 Physical/facility access controls; and
- 1.11.9 Change control procedures.

1.12 Prior to the Effective Date of the Agreement, and at least annually for the duration of this Agreement, Provider shall provide County with a copy of a current, annual, unqualified SOC 2 Type II, Report, inclusive of all five Trust Service Principles (Security, Availability, Processing Integrity, Confidentiality, and Privacy) for the datacenter that will store County data, unless the County’s Chief Information Officer in his or her sole discretion approves other documentation of appropriate security controls by Provider. If the audit opinion in the SOC 2, Type II report is qualified in any way, Provider shall provide sufficient documentation to demonstrate remediation of the issue(s) to the satisfaction of the County’s Chief Information Officer.

1.13 Provider shall maintain a disaster recovery plan with mirrored sites geographically separated by at least 250 miles, with a Recovery Time Objective (“RTO”) of a maximum of eight (8) hours and a Recovery Point Objective (“RPO”) of a maximum of four (4) hours from the incident.

1.14 Provider shall conduct a disaster recovery test in coordination with County at least once per year. The timing and duration of the test will be subject to the approval of County, and shall be coordinated and timed so as to cause minimal or no disruption to the Subscription Services or the regular

business of County.

1.15 Provider shall maintain controls that ensure separation of County data, confidential information, and security information from that of Provider's other clients. Provider agrees to provide at least AES-256 data encryption for bar code tickets or as otherwise directed by County on all copies of such data stored, transmitted, or processed, at no additional charge to County, and shall secure transmission and processing of Personally Identifiable Information ("PII") through https protocol. Provider shall classify such data internally at its highest confidentiality level. Provider shall also ensure that the encryption key(s) are not stored with the encrypted data and are secured by a Hardware or Software Security Module ("HSM"). Provider shall also ensure the user passwords are protected with a one-way hash. Provider shall immediately notify County of any compromise of the encryption keys. Provider shall provide a copy of County's encryption key(s) at County's request. Provider shall prohibit the use of unencrypted protocols such as FTP and Telnet for the data defined in this paragraph.

1.16 Provider shall maintain industry best practices for data privacy, security, and recovery measures including disaster recovery programs, physical facilities security, server firewalls, virus scanning software, current security patches, user authentication, and intrusion detection and prevention. Provider shall maintain the same standards set forth herein regardless of whether the County data is stored at any primary or other location. Upon request (or as otherwise provided in this SLA), Provider shall provide documentation of such procedures and practices to County. In addition, Provider agrees not to allow Peer to Peer Software ("P2P") to be installed onto any network where County data/files reside unless County specifically permits it in writing on a case-by-case basis.

1.17 Provider shall report to County within twenty-four (24) hours of becoming aware of the incident if any unauthorized party is successful in accessing any information technology component related to the County within Provider's responsibility, including but not limited to servers or fail-over servers where County's data or files exist or are housed. Provider shall provide County with a detailed incident report within five (5) days of the breach, including remedial measures instituted and any law enforcement involvement. Provider shall fully cooperate with County on incident response, forensics, and investigations that involve the Provider's infrastructure relating to any County data or County applications.

1.18 Provider shall protect any Internet interfaces provided under this Agreement using a security certificate from a certification authority ("CA") that meets or exceeds the CA/Browser Forum's latest Secure Sockets Layer ("SSL") Baseline Requirements and Network and Certificate Systems Security Requirements.

1.19 Provider shall connect its hosting site through at least two (2) independent Internet Service Providers ("ISPs") with different Internet Points-of-Presence.

1.20 Provider shall ensure adequate background checks have been performed on any personnel having access to County data/files. To the extent permitted by such checks, Provider shall not knowingly allow access to any County data/files to convicted felons or other persons deemed by Provider to be a security risk.

1.21 Provider shall ensure that its service providers, subconsultants, and any third parties performing any Services relating to this Agreement (other than Amazon Web Services) shall comply with all terms and conditions specified in this Agreement unless County, in writing, excuses specific compliance

with any such term or condition. Provider shall provide County, upon County's request, with a list of any service providers, subconsultants or other third-parties that Provider utilizes to provide Services to County.

1.22 Provider shall cooperate and provide any requested information during the term of the Agreement in connection with County's initial and on-going review and inspection relating to compliance and regulatory requirements. Request for information or review by County may include, but is not be limited to, the following:

- a) Vulnerability scans of authenticated and unauthenticated operating systems/networks, web applications, and/or database applications;
- b) Automated scans and penetration ("Pen") tests performed by County personnel or agents designated by County;
- c) Review of requested documents, including without limitation, Provider's architecture documents, external audits of Provider's information security policies and procedures, Pen-test documentation, security incident reports, environment logs, virtual private network ("VPN") access logs to terminal services, network traffic and firewall activity logs, Intrusion Detection System ("IDS") attack alerts and anomalies, enterprise password management activity, server and application logs, and/or monthly or periodic network traffic and firewall activity logs; and
- d) Physical inspection of Provider's facilities by the County or its officially designated representative.

1.23 If new or unanticipated threats or hazards are discovered by either County or Provider, or if existing safeguards have ceased to function, the discoverer shall immediately bring the situation to the attention of the other party.

1.24 Provider must mitigate critical or high risk vulnerabilities immediately after critical or high risk vulnerabilities are formally identified.

1.25 Provider shall provide County with the names and contact information for a security point of contact and a backup security point of contact to assist County with security incidents prior to the Effective Date of this Agreement.

1.26 Provider shall not release County data or copies of County data without the advance written consent of County.

1.27 County data or copies of County data must be available to County upon request within five (5) business days in the then-current format or any other format as may reasonably be requested by County.

1.28 Upon termination or expiration of this Agreement, after written confirmation by County that the applicable County data is currently maintained by County or otherwise securely stored, Provider shall securely erase all County data on all decommissioned hard drives or storage media to National Institute of Standards and Technology ("NIST") standards.

1.29 Provider shall provide privacy and information security training to its employees upon hire and at least annually.

1.30 Provider shall submit a network architecture diagram of the County's stored and transmitted data, to include location of data center and connectivity from all third parties who have access to County's data.

2. Compliance

2.1 For the duration of the Agreement, Provider shall provide County with the ability to generate account reports consisting of the account holder's name and application access rights.

2.2 For the duration of the Agreement, Provider shall provide County with the ability to generate account management reports showing new users, access rights changes, and account termination with the associated time stamp information.

2.3 For the duration of the Agreement, Provider shall provide County with the ability to generate time-stamped user and administrator access (login/logout) and a list of activities performed by administrators, privileged users, or third party contractors while using the SaaS System.

2.4 Promptly upon request, Provider shall provide County with access to time-stamped data transfer logs including the account, a description of the data transferred and its size, and the user and account names for forensic purposes.

2.5 Promptly upon request, Provider shall provide County with access to the time-stamped application and platform environment change control logs.

2.6 Promptly upon request, Provider shall provide County with access to the time-stamped data backup logs indicating the backup type (e.g., full, incremental, etc.).

3. Service Availability

3.1 SaaS System Availability

3.1.1 Provider guarantees that the network uptime will be 99.95% for each calendar month during the Term of the Agreement, excluding Scheduled Maintenance as defined herein (collectively, the "Network Uptime Guarantee"). Network uptime requires proper functioning of any Provider network infrastructure, infrastructure, including routers, switches, and cabling, affecting County's ability to reliably transmit or receive data. Network downtime is measured from the time the trouble ticket is opened to the time the network uptime is fully restored. The Network Uptime Guarantee does not apply to any unavailability (and will not be counted toward any unavailability time period) (a) where the SaaS System is available over the Internet to at least two other comparable customers (i.e., the SaaS System is functioning properly and there are no technical issues with Provider or its ISP's hardware or software), (b) due to any inability on the part of County to access the SaaS System as a result of a general Internet outage, (c) caused by factors outside of Provider's reasonable control, including any force majeure event or internet access or related problems beyond the demarcation point of the Subscription

Services, (d) resulting from any actions or inaction by County or any third party, or from any County equipment, software or other technology and/or third party equipment, software or other technology (other than such items provided by Provider under this Agreement), (e) any suspension of service due to unpaid fees or other breach of this Agreement or (f) any other exclusion listed in Amazon Web Services' applicable Service Level Agreement that is applicable to County.

The Network Uptime Guarantee shall not apply to any portion of the network or System which is managed by County.

3.1.2 Provider will refund to County five percent (5%) of the monthly fees (or monthly pro rata equivalent, if recurring fees under the Agreement are charged other than monthly) under the Agreement for each two (2) hours of System unavailability/Network downtime in excess of that permitted under the Network Uptime Guarantee (up to 100% of County's monthly fee), measured on a calendar month basis. Such refunds will be paid within ten (10) days of the applicable monthly report or may be credited against amounts due under any unpaid invoice. To the extent this provision conflicts with the Downtime Maintenance Credit in Exhibit C, the greater of the two shall apply.

3.1.3 Normal availability of the SaaS System shall be twenty-four (24) hours per day, seven (7) days per week. Planned downtime (i.e., taking the SaaS System offline such that it is not accessible to County) ("Scheduled Maintenance") shall occur during non-Prime Time and with at least five (5) business days' advance written notice to County. Provider may conduct Scheduled Maintenance at other times and upon less notice upon written consent from County, which consent will not be unreasonably withheld. During non-Prime Time, Provider may perform routine maintenance operations that do not require the SaaS System to be taken offline but may have immaterial effect on SaaS System performance and response time without any notice to County. Such degradation in performance and response time shall not be deemed network downtime. All changes that are expected to take more than four (4) hours to implement or are likely to impact user workflow require County's prior written approval, which will not be unreasonably withheld.

3.1.4 By the tenth day of each calendar month, Provider shall provide, upon County's request, to County a report detailing Provider's performance under this SLA for the prior calendar month. To the extent the performance fails to meet the Network Uptime Guarantee, the report shall calculate: the total number of minutes of uptime for each of Prime Time and non-Prime Time; the total number of minutes for each of Prime Time and non-Prime Time minus any applicable Scheduled Maintenance, respectively; and the percentage of uptime versus total time minus Scheduled Maintenance for each (e.g., monthly minutes of non-Prime Time network uptime / (Total minutes of non-Prime Time – Minutes of Scheduled Maintenance) = %).

3.1.5 Provider guarantees the functioning of all its hardware components necessary for Provider to provide the Services and Service Availability herein, and will replace any failed or defective component of its hardware at no cost to County. Downtime for the purpose of building redundancy or other recovery systems that is approved by County in advance shall not be charged as downtime in computing the Network Uptime Guarantee. Network downtime due to Provider's hardware failure is subject to the Network Uptime Guarantee.

3.2 Infrastructure Management

3.2.1 During Prime Time, Provider shall ensure packet loss of less than one percent (1%) and less than sixty (60) milliseconds domestic latency within Provider's network. Provider shall maintain sufficient bandwidth to the hosting sites and ensure the server processing time to provide millisecond response times from the server. County and Provider recognize that end user response times are dependent on intermittent ISP network connectivity, and in the case of County's users, dependent on County's internal network health.

3.2.2 Provider's mobile ticketing application is hosted on the cloud (Amazon Web Services). Provider's cloud architecture is supported by an auto scaling feature to handle large volumes of transactions. The auto scaling feature extends the infrastructure by increasing processing capability (servers) in real time, based on the volume of processing requests and/or number of concurrent users. The initial configuration is set to handle 5000 plus concurrent users with the automatic option to scale up to 10 times the normal traffic to address any spikes.

3.2.3 Provider's Services shall ensure that an unlimited number of transactions may be processed to County production database in the cloud, but Provider may recommend that non-routine reports and queries be limited to certain timeframes, quantities or other specifications if Provider determines that such reports and queries cause degradation to response times affecting performance levels established in the SLA.

3.2.4 Provider will retain all database records regardless of number or size.

3.2.5 Provider shall routinely apply upgrades, new releases, and enhancements to the SaaS System as they become available and shall ensure that these changes will not adversely affect the SaaS System. For any updates to locally installed Software, Provider shall routinely apply upgrades, new releases, and enhancements only after prior, written approval by County.

3.2.6 To the extent Provider's SaaS System includes an ad-hoc reporting tool and/or standard reports, Provider agrees to provide unlimited access to such functionality to County. Provider agrees to support an unlimited number of queries and reports against County's data. County agrees that Provider may put reasonable size limits on queries and reports to maintain SaaS System performance, provided such limits do not materially impact County's regular business operations.

3.2.7 Provider shall conduct full, encrypted SaaS System backups (including SaaS System and user data) weekly and shall conduct incremental, encrypted backups daily. Encrypted backups will be written to a backup device with sufficient capacity to handle the data. Provider shall maintain a complete current set of encrypted backups for the SaaS System, including data, at a remote, off-site "hardened" facility from which data can be retrieved within one (1) business day at any point in time. Full SaaS System restoration performed as a recovery procedure after a natural disaster is included in Provider's Subscription Services under this Agreement. Upon County's request, Provider shall also provide restoration of individual file(s). Provider agrees that County may extract all County Data (as defined below) from Provider's database at will.

3.2.8 A test system, which shall mirror the production system, shall be made

available for use by County for testing purposes upon two (2) business days' request, including without limitation, upon request for County's testing of application upgrades and fixes prior to installation in the production environment.

3.2.9 A demonstration/training system will be available for use by County upon two (2) business days' request. County may control data that is populated on the demonstration/training system by requesting that Provider:

- a) periodically refresh data from production;
- b) perform an ad-hoc refresh of data from production;
- c) not refresh data from production until further notice from County; or
- d) refresh data on an ad hoc basis with training data supplied by County.

3.3 Performance Monitoring and Hosting Capacity Increases

3.3.1 If requested by County, Provider shall provide standard reporting metrics to County upon County's request, which may include (where applicable), at County's option: traffic patterns by user and by time; server load, including Central Processing Unit ("CPU") load, virtual memory, disk and input/output ("I/O") channel utilization; Transmission Control Protocol ("TCP") load for each server allocated in part or in full to County's System; and system errors in System, database, operating system, and each server allocated in part or in full to System.

3.3.2 In the event County anticipates an increase in transaction volume or seeks to expand capacity beyond the limitations, if any, provided under the Agreement, Provider will provide timeline and cost estimates to upgrade Provider's existing servers or deploy additional Provider servers dedicated to County's System within fifteen (15) calendar days of written notice by County. Any incremental or additional costs shall be handled pursuant to the "Change of Scope" procedures in the Agreement.

4. Data

4.1 County shall also have the right to use the Services to provide public access to the data, files, or information derived from the use of the System, to generate reports from such data, files, or information, and to provide such data, files, or information on electronic media to the public where required or allowed by applicable law.

4.2 All data and information provided by County or its agents under this Agreement and all results derived therefrom through the use of the System, whether or not electronically retained and regardless of the retention media (collectively "County Data"), are the property solely of County and may not be reproduced or used with the prior written consent of County. Provider and its subcontractors will not publish, transmit, release, sell, or disclose any County Data to any other person without County's prior written consent. The provisions of this Section 4.2 shall survive the termination or expiration of the Agreement.

4.3 In the event of any impermissible disclosure, loss or destruction of County Data, Provider must immediately notify County and take all reasonable and necessary steps to mitigate any potential harm or further disclosure, loss or destruction.

4.4 County shall have the option of receiving County Data at any time in any format, including, without limitation, Extensible Markup Language (“XML”), Structured Query Language (“SQL”), or in another format as may be mutually agreed to by County and Provider.

4.5 Upon the termination of this Agreement or the end of serviceable life of any media used in connection with this Agreement, Provider shall, at County’s option, (a) securely destroy all media (including media used for backups) containing any County Data and County information and provide to County a signed certificate of destruction within ten (10) business days, and/or (b) return to County all County Data and provide a signed certification within two (2) business days, documenting that no County Data or information is retained by Provider in any format or media.

5. Transition/Disentanglement

5.1 Provider will complete the transition of any terminated Services to County and any replacement providers that County designates (collectively, the “Transferee”), without causing any unnecessary interruption of, or adverse impact on, the Services (“Disentanglement”). Provider will work in good faith (including, upon request, with the Transferee) at no additional cost to County to develop an orderly Disentanglement plan that documents the tasks required to accomplish an orderly transition with minimal business interruption or expense for County. Upon request by County, Provider shall cooperate, take any necessary additional action, and perform such additional tasks that County may reasonably request to ensure timely and orderly Disentanglement, which shall be provided at the rate(s) specified in the Agreement or, if no applicable rate is specified, at a reasonable additional fee upon written approval by the County. Specifically, and without limiting the foregoing, Provider shall:

- a) Promptly provide the Transferee with all nonproprietary information needed to perform the Disentanglement, including, without limitation, data conversions, interface specifications, data about related professional services, and complete documentation of all relevant software and hardware configurations;
- b) Promptly and orderly conclude all work in progress or provide documentation of work in progress to Transferee, as County may direct;
- c) Not, without County’s prior written consent, transfer, reassign or otherwise redeploy any of Provider’s personnel during the Disentanglement period from performing Provider’s obligations under this Agreement;
- d) If applicable, with reasonable prior written notice to County, remove its assets and equipment from County facilities;
- e) If County requests, and to the extent permitted under the applicable agreements, assign to the Transferee (or use its best efforts to obtain consent to such assignment where required) all contracts including third-party licenses and maintenance and support agreements, used by Provider exclusively in connection with the Services for County. Provider shall perform all of its obligations under such contracts at all times prior to the date of assignment, and Provider shall reimburse County for any losses resulting from any failure to perform any such obligations; and
- f) Deliver to Transferee all current, nonproprietary documentation and data related to

County- owned assets and infrastructure. After confirming in writing with County that the applicable County data is received intact or otherwise securely stored by County, Provider shall securely erase all County data, including on any hard drives and backup media, to NIST standards. Upon written consent from County, Provider may retain one copy of documentation to the extent required for Provider's archival purposes or warranty support.

6. Managed Services/Professional Services (IT)/Third-Party Vendors

6.1 Provider shall immediately notify the County of any terminations/separations of employees performing services under the Agreement or who had access to the County's network in order to disable such employees' access to County systems.

6.2 Provider shall ensure all Provider employees have signed County's Information Security Policy Acknowledgement form prior to accessing County network environment. (PCI 12.3.5)

7. Software

7.1. Provider must provide a security plan or secure configuration guide for Software installed in the County environment by the Provider.

7.2. Provider shall advise of any third party software (e.g., Java, Adobe Reader/Flash, and Silverlight) required to be installed and version supported. Provider shall support updates for critical vulnerabilities discovered in the versions of third party software installed.

7.3. Provider shall ensure that the Software is developed based on industry standards/and or best practices, including following secure programming techniques and incorporating security throughout the software-development life cycle.

7.4. Provider shall ensure the Software has a security patch issued for newly identified vulnerabilities within 30 days for all critical or high security vulnerabilities.

7.5. Provider shall ensure the Software provides for role-based access controls.

7.6. Provider shall support electronic delivery of digitally signed upgrades from Provider or supplier website.

7.7. Provider shall enable auditing by default in software for any privileged access or changes.

7.8. Reserved.

7.9. Provider shall regularly provide County with end-of-life-schedules for all applicable Software.

8. Hardware Leased or Purchased from Vendor

8.1 Provider shall ensure that physical security features are included in the Hardware

acquired under this Agreement to prevent tampering.

8.2 Provider shall ensure security measures are followed during the manufacture of the Hardware acquired under this Agreement.

8.3 Any Hardware provided under this Agreement shall not contain any embedded remote control features unless approved in writing by County's Contract Administrator.

8.4 Provider shall disclose any default accounts or backdoors which exist for access to County's network.

8.5 If a new critical or high security vulnerability is identified, Provider shall supply a patch, firmware update or workaround approved in writing by County's Contract Administrator within 30 calendar days from identification of vulnerability.

8.6 Provider shall make available, upon County's request, any required certifications as may be applicable and required (e.g., Common Criteria ("CC"), Federal Information Processing Standard 140 ("FIPS 140)).

8.7 Provider shall regularly provide County with end-of-life-schedules for all applicable Hardware and Software.

8.8 Provider shall support electronic delivery of digitally signed upgrades from Provider or supplier website.

8.9 Upon County's request, Provider shall make available to the County proof of Provider's compliance with all applicable federal, state, and local laws, codes, ordinances, rules, and regulations in performing under this Agreement, including but not limited to: HIPAA compliance; Provider's latest compliance reports (e.g., PCI Compliance report, SSAE 16 report, International Organization for Standardization 27001 (ISO 27001) certification); and any other proof of compliance as may be required from time to time.

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Exhibit G – Additional Terms for Federally Funded Contacts

Contractor shall comply with the following additional obligations to the extent applicable:

1. For all federally assisted construction contracts (as defined in 41 C.F.R. Part 60-1.3):

a. Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

b. Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

c. Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

d. Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

e. Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor for purpose of investigation to ascertain compliance with such rules, regulations, and orders.

f. In the event of Contractor's noncompliance with the nondiscrimination clauses of this Agreement or with any of the said rules, regulations or orders, this Agreement may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

g. Contractor will include the provisions of Sections (1)(a) through (1)(f) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such

direction by the administering agency, Contractor may request the United States to enter into such litigation to protect the interest of the United States.

2. For all construction contracts in excess of \$2,000:

a. Contractor shall to comply with 40 U.S.C. 3141-3144, 3146-3148 as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federal Financed and Assisted Construction"), and the requirements of 29 C.F.R. Part 3 as may be applicable, which are incorporated by reference into this contract.

b. Contractor is required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. Contractor shall pay wages not less than once a week.

c. Contractor shall comply with the Copeland "Anti-Kickback" Act, 18 U.S.C. § 874, 40 U.S.C. § 3145, and 29 C.F.R. Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States," as may be applicable, which are incorporated by reference into this contract. Contractor shall not induce by any means any person employed in construction, completion or repair of work, to give up any part of the compensation to which he or she is otherwise entitled.

d. Contractor shall insert in any subcontracts the clause above and such other clauses as the federal funding agency may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.

e. A breach of the contract clause above may be grounds for termination of the Agreement, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.

3. All contracts in excess of \$100,000 that involve the employment of mechanics or laborers:

a. Contractor shall comply with 40 U.S.C. §§ 3702 and 3704, as supplemented by the Department of Labor regulations (29 CFR Part 5).

b. Contractor shall, among other things, compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Contractor shall compensate work in excess of the standard work week at a rate of not less than one and half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. Contractor shall not require laborers or mechanics to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous.

4. All federally funded contracts:

a. Contractor shall comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements" and any implementing regulations issued by the federal funding agency.

b. Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. §§ 7401-7671q) and the Federal Water Pollution Control Act as

amended (33 U.S.C. §§ 1251-1387), and will report violations to FEMA and the Regional Office of the Environmental Protection Agency (EPA).

c. Contractor shall comply with all mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. § 6201).

d. This Agreement is a covered transaction for purposes of 2 C.F.R. Part 180 and 2 C.F.R. Part 3000. Contractor affirms and verifies that neither the Contractor, nor any of its principals (defined at 2 C.F.R. § 180.995) or affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

e. Contractor shall comply with 2 C.F.R. Part 180, subpart C and 2 C.F.R. Part 3000, subpart C, and shall include there requirements to comply in any lower tier covered transaction it enters into relating to this Agreement.

f. The foregoing subsections are material representations of fact relied upon by Broward County. If it is later determined that Contractor did not comply with 2 C.F.R. Part 180, subpart C or 2 C.F.R. Part 3000, subpart C, in addition to remedies available to Broward County, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

g. Contractor agrees to comply with the requirements of 2 C.F.R. Part 180, subpart C and 2 C.F.R. Part 3000, subpart C until the termination or expiration of this Agreement. Contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions relating to this Agreement.

h. Contractor shall comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. Among other things, Contractor shall procure only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recover materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000.00; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

5. By execution of this Agreement, Contractor certifies that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection

with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

c. Contractor shall require that the language of this certification be included in the award documents for all sub awards at all tiers (including subcontracts, sub grants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

d. This certification is a material representation of fact upon which reliance is placed when this transaction was made or entered into. Contractor certifies or affirms the truthfulness and accuracy of each statement of the foregoing certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 et seq., apply to this certification and disclosure, if any.

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VENDOR'S OPPORTUNITY LIST FORM

The completed form(s) should be returned with the Vendor 's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

This solicitation consists of federally assisted funds and federal law requires Broward County to maintain a database of all firms that are participating or attempting to participate in federally assisted contracts, sponsored Department of Transportation (D.O.T.).

The form should include the Vendor's information, as well as any prospective subcontractor/subconsultant that the Vendor contacted or who contacted the Vendor regarding this solicitation.

Prime Vendor Information

Federal Tax ID Number:

38-1016240

Firm Name:

Genfare, a division of SPX Corporation

Phone:

847-593-8855

Address:

800 Arthur Avenue
Elk Grove Village, IL 60007

Year Firm Established: 1980

DBE Non-DBE

Type of work bid on:

Mobile Ticketing / Fare Card System

9. Annual Gross Receipts

- Less than \$200,000
- \$200,001 - \$500,000
- \$500,001 - less than \$1 million
- \$1 million - less than \$5 million
- \$5 million - less than \$10 million
- \$10 million - less than \$20 million
- \$20 million - less than \$50 million
- \$50 million - less than \$100 million
- \$100 million - less than \$500 million
- \$500 million - less than \$1 billion
- Over \$1 billion

10. Ethnic Categories

- B (Black American)
- H (Hispanic American)
- NA(Native American)
- Subcont. Asian American
- Asian Pacific American
- Non- Minority Women
- Other (i.e., not of any other group listed above)

11. Gender

- Female
- Male

Please be specific in regard to

the type of work).

Contract Amount or Percentage

: 100% or (\$):

(Continued)

Subcontractor/Subconsultant Information

Provide this information for any subcontractor/subconsultant who provided the Prime Vendor with a bid/quote/proposal to perform work on the project; or any subcontractor/subconsultant solicited by the Prime Vendor to provide a bid/quote/proposal. Provide additional forms for Subcontractor /Subconsultant Information as needed.

<p>Federal Tax ID Number: 27-3983310</p> <p>Firm Name: CooCoo</p> <p>Phone: 646-459-4261</p> <p>Address: 356 New York Avenue Huntington, NY 11743</p> <p>Year Firm Established: 2009</p> <p><input type="checkbox"/> DBE <input type="checkbox"/> Non-DBE</p> <p><input checked="" type="checkbox"/> Subcontractor</p> <p><input type="checkbox"/> Subconsultant</p> <p>Type of work bid on: Mobile Ticketing Development</p> <p>Please be specific in regard to the type of work).</p>	<p>9. Subcontract Amount/Percentage (%): 20% - 30% or (\$): []</p> <p>10. Annual Gross Receipts:</p> <p><input type="checkbox"/> Less than \$200,000</p> <p><input type="checkbox"/> \$200,001 - \$500,000</p> <p><input type="checkbox"/> \$500,001 - less than \$1 million</p> <p><input type="checkbox"/> \$1 million - less than \$5 million</p> <p><input checked="" type="checkbox"/> \$5 million - less than \$10 million</p> <p><input type="checkbox"/> \$10 million - less than \$20 million</p> <p><input type="checkbox"/> \$20 million - less than \$50 million</p> <p><input type="checkbox"/> \$50 million - less than \$100 million</p> <p><input type="checkbox"/> \$100 million - less than \$500 million</p> <p><input type="checkbox"/> \$500 million - less than \$1 billion</p> <p><input type="checkbox"/> Over \$1 billion</p>	<p>11. Ethnic Categories</p> <p><input type="checkbox"/> Asian Pacific American</p> <p><input type="checkbox"/> B (Black American)</p> <p><input type="checkbox"/> H (Hispanic American)</p> <p><input type="checkbox"/> NA(Native American)</p> <p><input type="checkbox"/> Non-Minority Women</p> <p><input type="checkbox"/> Subcont. Asian American</p> <p><input checked="" type="checkbox"/> Other (i.e., not of any other group listed above)</p> <p>12. Gender</p> <p><input type="checkbox"/> Female</p> <p><input type="checkbox"/> Male</p>
<p>Federal Tax ID Number: []</p> <p>Firm Name: []</p> <p>Phone: []</p> <p>Address: []</p> <p>Year Firm Established: []</p>	<p>9. Subcontract Amount/Percentage (%): [] or (\$): []</p> <p>10. Annual Gross Receipts:</p> <p><input type="checkbox"/> Less than \$200,000</p> <p><input type="checkbox"/> \$200,001 - \$500,000</p> <p><input type="checkbox"/> \$500,001 - less than \$1 million</p> <p><input type="checkbox"/> \$1 million - less than \$5 million</p> <p><input type="checkbox"/> \$5 million - less than \$10 million</p> <p><input type="checkbox"/> \$10 million - less than \$20 million</p>	<p>11. Ethnic Categories</p> <p><input type="checkbox"/> Asian Pacific American</p> <p><input type="checkbox"/> B (Black American)</p> <p><input type="checkbox"/> H (Hispanic American)</p> <p><input type="checkbox"/> NA(Native American)</p> <p><input type="checkbox"/> Non-Minority Women</p> <p><input type="checkbox"/> Subcont. Asian American</p> <p><input type="checkbox"/> Other (i.e., not of any other group listed above)</p>

Broward County Board of
County Commissioners

Bid V1380512P1

<input type="checkbox"/> DBE <input type="checkbox"/> Non-DBE	million <input type="checkbox"/> \$20 million - less than \$50 million	other group listed above)
<input type="checkbox"/> Subcontractor	<input type="checkbox"/> \$50 million - less than \$100 million	12. Gender
<input type="checkbox"/> Subconsultant	<input type="checkbox"/> \$100 million - less than \$500 million	<input type="checkbox"/> Female
Type of work bid on:	<input type="checkbox"/> \$500 million - less than \$1 billion	<input type="checkbox"/> Male
<input type="text"/>	<input type="checkbox"/> Over \$1 billion	
<input type="text"/>		
Please be specific in regard to the type of work).		

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FTA/USDOT Funding Supplement

Solicitation No. _____

**EXHIBIT 5: Government-Wide Debarment and Suspension (Nonprocurement)
Certification**

IF THIS CONTRACT OR PURCHASE ORDER HAS A VALUE OF \$25,000 OR MORE, THIS PROCUREMENT IS A COVERED TRANSACTION FOR PURPOSES OF 49 CFR PART 29.


This Contract is a covered transaction for purposes of 49 CFR Part 29. As such, the CONTRACTOR is required to verify that none of the CONTRACTOR, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945.

The CONTRACTOR is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier-covered transaction it enters into.

By signing and submitting its bid or proposal, the Bidder or proposer certifies as follows:

The certification in this clause is a material representation of fact relied upon by COUNTY. If it is later determined that the Bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to COUNTY, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The Bidder or proposer agrees to comply with the requirements of 49 CFR 29, Subpart C, while this offer is valid and throughout the period of any Contract that may arise from this offer. The Bidder or proposer further agrees to include a provision requiring such compliance in its lower tier-covered transactions.

02/01/2016
(Date)



Authorized Signature

Kim R. Green, Executive Director
Print Name and Title

Genfare, a division of SPX Corporation
Name of Contractor

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FTA/USDOT Funding Supplement

Solicitation No. _____

EXHIBIT 6: Buy America Certification

FOR PROCUREMENTS OF STEEL, IRON, AND MANUFACTURED PRODUCTS (INCLUDING CONSTRUCTION CONTRACTS, MATERIALS AND SUPPLIES, AND ROLLING STOCK) OVER \$100,000

A. STEEL, IRON OR MANUFACTURED PRODUCTS

If this Contract or purchase order is valued in excess of \$100,000 and involves the procurement of steel, iron, or manufactured products, the Bidder or offeror hereby certifies that it:

- Will meet the requirements of 49 USC 5323(j)(1) and the applicable regulations in 49 CFR part 661.5.
- Cannot meet the requirements of 49 USC 5323(j)(1) and 49 CFR part 661.5, but it may qualify for an exception pursuant to 49 USC 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), and 49 CFR 661.

B. BUSES, OTHER ROLLING STOCK, AND ASSOCIATED EQUIPMENT

If this Contract or purchase order is valued in excess of \$100,000 and involves the procurement of buses, other rolling stock, and associated equipment, the Bidder or offeror certifies that it:

- Will comply with the requirements of 49 USC 5323(j)(2)(C) and the regulations at 49 CFR part 661.11.
- Cannot comply with the requirements of 49 USC 5323(j)(2)(C) and 49 CFR 661.11, but may qualify for an exception pursuant to 49 USC 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), and 49 CFR 661.7.

02/01/2016

(Date)



Authorized Signature

Kim R. Green, Executive Director

Print Name and Title

Genfare, a division of SPX Corporation

Name of Contractor

Note: This Buy America certification must be submitted to Broward County with all bids or offers on FTA-funded Contracts involving construction or the acquisition of goods or rolling stock, except those subject to a general waiver. General waivers are listed in 49 CFR 661.7, and include final assembly in the United States for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, microcomputer equipment, software, and small purchases (currently less than \$100,000) made with capital, operating, or planning funds.

FTA/USDOT Funding Supplement

Solicitation No. _____

EXHIBIT 7: Restrictions On Lobbying Certification

For Procurements of \$100,000 or More


The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any federal Contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal Contract, grant, loan, or cooperative agreement.
2. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence to an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this federal Contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form—LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions [as amended by "Government-wide Guidance for New Restrictions on Lobbying,"
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and Contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The undersigned certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the undersigned understands and agrees that the provisions of 31 USC A3801, et seq., apply to this certification and disclosure, if any.

02/01/16
(Date)



Authorized Signature

Kim R. Green, Executive Director

Print Name and Title

Genfare, a division of SPX Corporation

Name of Contractor

FTA/USDOT Funding Supplement

Solicitation No. _____

EXHIBIT 8: Drug and Alcohol Testing Program Compliance Certification

FOR TRANSIT OPERATIONAL SERVICE CONTRACTS INVOLVING THE OPERATION OF A TRANSIT SERVICE, OR MAINTAINING, REPAIRING, OVERHAULING, AND REBUILDING REVENUE SERVICE VEHICLES OR EQUIPMENT (ENGINES AND PARTS) USED IN REVENUE SERVICE, OR BODY WORK, OR CONTRACTS FOR SECURITY PERSONNEL THAT CARRY FIREARMS.


The undersigned certifies that CONTRACTOR, and its SUBCONTRACTORS as required, has established and implemented an anti-drug and alcohol prevention program in accordance with 49 CFR Part 655, "Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations."¹

The undersigned further agrees to produce any documentation necessary to establish its compliance with 49 CFR Part 655, and to permit any authorized representative of the United States Department of Transportation or its operating administrations, the State Oversight Agency (the Florida Department of Transportation), or COUNTY, to inspect the facilities and records associated with the implementation of the drug and alcohol testing program as required under 49 CFR Part 655 and to review the testing process.

The undersigned further agrees to certify annually its compliance with Part 655 before March 15 and to submit the Management Information System (MIS) reports no later than February 15) to COUNTY.

To certify compliance, CONTRACTOR shall use the "Substance Abuse Certifications" in the "Annual List of Certifications and Assurances for Federal Transit Administration Grants and Cooperative Agreements," which is published annually in the Federal Register.

02/01/2016
(Date)



Authorized Signature

Kim R. Green, Executive Director
Print Name and Title

Genfare, a division of SPX Corporation
Name of Contractor

¹ The Federal Transit Administration (FTA) – mandated drug and alcohol testing program is separate from and in addition to the provisions of the Drug-Free Workplace Act (DFWA).
Rev. 4/8/13