

August 2010

Request for Proposals

Transit Farebox and Related Procurement: RFP# 2010-05A



Macon Transit Authority

Historic Terminal Station
Suite 100
200 Cherry Street
Macon, Georgia 31201

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PART 1
GENERAL REQUEST FOR PROPOSAL INFORMATION

1.1 SOLICITATION DATA

A. Procuring Agency and Contracting Officer

Request For Proposal (RFP) No:	RFP# 2010-05A
Procuring Agency:	Macon Transit Authority
Address:	HISTORIC TERMINAL STATION SUITE 100 200 CHERRY STREET MACON, GEORGIA 31201-7938
Contracting Officer:	Mr. Richard Jones
Phone/Fax:	478-803-2500/478

B. Scope

Procuring Agency requests proposals for the purchase and installation of 20 electronic validating bus fareboxes and related accessories equipment and training with the option to purchase 10 additional fareboxes over the next three years from a single, qualified vendor. Any contract to be awarded as a result of this RFP is subject to a financial assistance contract between the Federal Transit Administration and Macon Transit Authority, hereafter known as MTA. **Fareboxes must be compatible and interchangeable with current GFI version 7 system.**

C. Solicitation Schedule

The following is the solicitation schedule of for this procurement:

Availability of RFP	August 16, 2010
Deadline for questions/clarifications to be submitted in writing	September 10, 2010
Proposals Due Date (4:00pm EST)	October 1, 2010
Award Notification	October, 15, 2010

In order to be considered for award, proposals must be received by the due date and time. This RFP does not commit MTA to award a contract. MTA will not pay Proposers for any costs associated with preparing responses to this RFP. MTA reserves the right to accept or reject any or all proposals received as a result of this request, to negotiate with qualified Proposers, to award contract without discussions/interviews or to cancel in part or in its entirety this RFP if it is in the best interests of MTA to do so.

1.2 COMMUNICATIONS AND REQUESTS

A. Proposer Communications and Request

All correspondence, communications and/or contact in regard to any aspect of this solicitation or offers shall be with the Contracting Officer identified in "Procuring Agency and Contracting Officer" (Section 1.1; A) above, or his designate representative. Proposers and their representatives shall not make any contact with or communicate with any members of MTA, or

its employees and consultants, other than the Contracting Officer, or designated representative, in regard to any aspect of this solicitation or offers.

At any time during this procurement up to the time specified in "Solicitation Schedule" (Section 1.1; C.), Proposers may request, in writing, a clarification or interpretation of any aspect, or a change to any requirement of the RFP or any addenda to the RFP. Requests may include suggested substitutes for specified items and for any brand names, which whenever used in this solicitation shall mean the brand name or approved equal. Such written requests shall be made to the Contracting Officer and may be transmitted by facsimile or e-mail. The Proposer making the request shall be responsible for its proper delivery to MTA per "Procuring Agency and Contracting Officer" (Section 1.1; A). MTA will not respond to oral requests. Any request for a change to any requirement of the Contract documents must be fully supported with technical data, test results, or other pertinent information evidencing that the exception will result in a condition equal to or better than that required by the RFP, without substantial increase in cost or time requirements. Any responses to such written requests shall be provided by MTA in the form of addenda only. Only written responses provided as addenda shall be official and all other forms of communication with any officer, employee or agent of MTA shall not be binding on MTA.

If it should appear to a prospective Proposer that the performance of the Work under the Contract, or any of the matters relating thereto, is not sufficiently described or explained in the RFP or Contract documents, or that any conflict or discrepancy exists between different parts thereof or with any federal, state, local or Procuring Agency law, ordinance, rule, regulation, or other standard or requirement, then the Proposer shall submit a written request for clarification to MTA within the time period specified in Section 1.1; C.

B. Addenda to RFP

MTA reserve the right to amend the RFP at any time. Any amendments to or interpretations of the RFP shall be described in written addenda. MTA shall provide copies of the addenda to all prospective Proposers officially known to have received the RFP. Prospective Proposers, or their agent(s), shall be responsible to collect the addendum at the address provided in "Procuring Agency and Contracting Officer" (Section 1.1; A) or receive same otherwise. Notification of the addendum will be mailed or e-mailed to all prospective Proposers officially known to have received the RFP and to the address provided by each prospective Proposer. Failure of any prospective Proposer to receive the notification or addendum shall not relieve the Proposer from any obligation under its proposal as submitted or under the RFP, as clarified, interpreted or modified.

All addenda issued shall become part of the RFP. Prospective Proposers shall acknowledge the receipt of each individual addendum and all prior addenda in their proposals. Failure to acknowledge in their proposals receipt of addenda may at MTA's sole option disqualify the proposal.

If MTA determines that the addenda may require significant changes in the preparation of proposals, the deadline for submitting the proposals may be postponed by the number of days that MTA determines will allow Proposers sufficient time to revise their proposals. Any new Due Date shall be included in the addenda.

C. Conditions, Exceptions, Reservations or Understandings

Proposals stating conditions, exceptions, reservations or understandings (hereinafter "deviations") relating to the RFP may be rejected. Any and all deviations must be explicitly, fully and separately stated in the proposal by completing form(s) provided in "Proposed Exception To MTA RFP", setting forth at a minimum the specific reasons for each deviation so that it can be fully considered and, if appropriate, evaluated by MTA. All deviations not found by MTA to be unacceptable shall be evaluated in accordance with the appropriate evaluation criteria and procedures, and may result in the Proposer receiving a less favorable evaluation than without the deviation.

1.3 INSTRUCTIONS TO PROPOSERS

Proposals shall be submitted in a sealed envelope, clearly marked

RFP# 2010-05A Farebox and Related Equipment Procurement

Companies shall submit one original and two (2) copies of the proposal response.

Proposals shall be addressed and delivered to the below address

Macon Transit Authority
Historic Terminal Station
Suite 100
200 Cherry Street
Macon, Georgia 31201-7938

A. Letter of Transmittal

A letter of transmittal shall be addressed to the Contracting Officer and must, at a minimum, contain the following:

1. Identification of the offering firm(s), including name, address and telephone number of each firm;
2. Names of the person(s) representing the firm(s) in the negotiations during the period of the proposal evaluation;
3. A statement to the effect the proposal shall remain valid for a period of not less than 90 days from the date of submittal; and
4. Signature of the person(s) authorized to operate a contract on behalf of the firm.

B. Proposal Requirements

Proposals shall be submitted in 8 1/2" X 11" size. Offers should be typed, and not include any unnecessary elaborate or promotional material. Lengthy narrative is discouraged, and presentations should be brief and concise. Information should be presented in the order in which it is requested.

Proposals shall be structured as follows, with tabs for each of the numbered items below:

1. Submission Form and Cover Letter. The proposal must be signed by a duly authorized officer. Include contact information for that person or persons who will be authorized to represent the Proposer.
2. Table of Contents
3. Capability and Experience. A detailed list of items to include in this section is found in the Evaluation Criteria section following.
4. Cost. Provide the total fee for which your firm will provide the requested installation and services. Use forms provided.
5. Technical Specifications. Provide a clear and concise description of the equipment and services to be provided by your company under the contract. Describe the overall design to be used in carrying out this project. The information provided relating to the farebox system will be utilized to evaluate the proposal. Technical specifications must include a preventative maintenance program.
6. Proposed Warranty
7. Proposed Installation Schedule
8. Proposed Training Schedule
9. Required Forms

C. Price Proposal Requirements

1. 20 electronic validating bus fareboxes each furnished with 2 cashboxes each.
2. Installation of 20 fareboxes
3. Revenue Collection System and installation of collection system
4. Data collection and reporting systems, to include necessary hardware, software and communication equipment
5. All licenses for software, firmware and updates
6. Certifications of warranty for hardware
7. Installation and testing of the data system
8. Card stock
8. All manuals for operators, maintenance, and IT

9. Training of administrative, operations and maintenance personnel

10. Spare parts

D. Proposal Packaging Requirements

Proposals shall be submitted in a sealed package. This package shall be marked as specified below and shall contain all of the proposal documents for which the package is required to be marked and no other documents. The same requirements shall apply to any Best and Final Offers, which may be requested. Proposal package shall be addressed and delivered to the address specified in "Procuring Agency and Contracting Officer" (Section 1.1; A.).

<p>QUALIFICATIONS AND TECHNICAL PROPOSAL RFP # 2010-05A Macon Transit Authority RFP Purchase and Installation of Electronic Fareboxes and Related Equipment SUBMITTED BY: (Proposer's name and address)</p>

E. Modification or Withdrawal of Proposals

A modification of a proposal already received will be accepted by MTA only if the modification is received prior to the Proposal Due Date, or is specifically requested by MTA, or is made with a requested Best and Final Offer (BAFO). All modifications shall be made in writing and executed and submitted in the same form and manner as the original proposal.

A Proposer may withdraw a proposal already received prior to the Proposal Due Date by submitting, in the same manner as the original proposal, to MTA a written request for withdrawal executed by the Proposer's authorized representative. After the proposal Due Date, a proposal may be withdrawn only if MTA fails to award the Contract within the proposal validity period or any agreed upon extension thereof. The withdrawal of a proposal does not prejudice the right of a Proposer to submit another proposal within the time set for receipt of proposals.

This provision for modification and withdrawal of proposals may not be utilized by a Proposer as a means to submit a late proposal and, as such, will not alter MTA's right to reject a proposal.

F. Due Date

Sealed proposals in original and two (2) copies must be received at the address shown in "Procuring Agency and Contracting Officer" (Section 1.1; A.) until 4:00pm EST October 1, 2010 for the provisions of 20 electronic fareboxes All labor, equipment, and materials shall be furnished in strict accordance with the delivery schedule and conditions of the Contract Documents. Proposals and subsequent offers shall be valid for a period of 90 days.

1.4 PROPOSAL EVALUATION, NEGOTIATION AND SELECTION

Proposals will be evaluated, negotiated, selected and any award made in accordance with the criteria and procedures described below. Subject to MTA's right to reject any or all proposals, the Proposer will be selected whose proposal is found to be most advantageous to MTA, based



upon consideration of the criteria. The approach and procedures are those which are applicable to a competitive negotiated procurement whereby proposals are evaluated to determine which proposals are within a competitive range.

Proposers shall furnish acceptable evidence of their ability to perform, such as financial stability and the ability to obtain the necessary personnel when requested by MTA. Refusal to provide requested information may cause the proposal to be rejected.

Discussions and negotiations may then be carried out with Proposers within the competitive range, after which BAFO(s) may be requested. However, MTA may select a proposal for award without any discussions or negotiations or request for any BAFO(s). Subject to MTA's right to reject any or all proposals, the Proposer will be selected whose proposal is found to be most advantageous to MTA, based upon consideration of the criteria of "Qualification Requirements" and "Proposal Evaluation Criteria" below.

A. Opening of Proposals

Proposals will not be publicly opened. All proposals and evaluations will be kept strictly confidential, as allowed by law, throughout the evaluation, negotiations and selection process. Only the members of the Evaluation and Selection Committee and other Procuring Agency officials, employees and agents having a legitimate interest will be provided access to the proposals and evaluation results during this period.

B. Evaluation and Selection Committee

An Evaluation and Selection committee will be established. The Committee will make all decisions regarding the evaluations, determination of responsible Proposers and the competitive range, negotiations and the recommendation of the Proposer, if any, that may be awarded the Contract.

C. Proposal Selection Process

The following describes the process by which proposals will be evaluated and a selection made for a potential award. Any such selection of a proposal by a responsible Proposer shall be made by consideration of only the criteria of "Qualification Requirements" and "Proposal Evaluation Criteria" below. Section 1.4; C.; 1 specifies the requirements for determining responsible Proposers, all of which must be met by a Proposer to be found qualified. Final determination of a Proposer's qualification will be made based upon all information received during the evaluation process and as a condition for the award. Sections 1.4; c.; 2 contain all of the technical and pricing evaluation criteria, by which a proposal from a qualified Proposer will be considered for selection. An award, if made, will be to a responsible Proposer for a proposal, which is found to be in MTA's best interest, price and other evaluation criteria considered. The procedures to be followed for these evaluations are provided in "Evaluation Procedures".

1. Qualification Requirements

The following are the requirements for qualifying responsible Proposers. All of these requirements must be met; therefore, they are not listed by any particular order of importance. The Proposer of any proposal that the Selection Committee finds not to meet these requirements, and cannot be made to meet these requirements, may be determined by the

Selection Committee not to be responsible and its proposal to be rejected. The requirements are as follows:

I. Sufficient financial strength and resources and capability to finance the work to be performed and complete the Contract in a satisfactory manner as measured by:

- A. Willingness of any parent company to provide the required financial guaranty evidenced by a letter of commitment signed by an officer of the parent company having the authority to execute the parent company guaranty.
- B. Ability to obtain required insurance with coverage values that meet minimum requirements evidenced by a letter from an underwriter confirming that the Proposer can be insured for the required amount.

II. Evidence that the human and physical resources are sufficient to perform the contract as specified and assure delivery of all equipment within the time specified in the Contract, to include:

- A. Engineering, management and service organizations with sufficient personnel and requisite disciplines, licenses, skills, experience, and equipment to complete the Contract as required and satisfy any engineering or service problems that may arise during the warranty period.
- B. Adequate manufacturing facilities sufficient to produce and factory-test equipment on schedule. Capability to meet the required delivery schedule once ordered.
- C. A spare parts procurement and distribution system sufficient to support equipment Maintenance without delays and a service organization with skills, experience and equipment sufficient to perform all warranty and on-site work.

III. Evidence of satisfactory performance and integrity on contracts in making deliveries on-time, meeting specifications and warranty provisions, parts availability, and steps the Proposer took to resolve any judgments, liens, equipment defect history, and warranty claims. Evidence shall be by client references.

2. Proposal Evaluation Criteria

MTA will evaluate all of the following factors in appraising the responses to this RFP and will use these criteria in the evaluation process in an effort to select a contractor that can best serve its needs.

The criteria have been established to afford all proposers an opportunity to know the basis upon which their proposals will be evaluated and in order to evaluate all proposals on an equal basis.

Award will be made to the proposer whose final offer is the most advantageous to MTA in accordance with the criteria set forth. MTA reserves the right to accept other than the lowest cost proposal, reject and all proposals, or to negotiate.

Each proposal will be initially analyzed and judged according to the criteria set forth below. The maximum score is 100 points.

(1) Farebox Quality: 20 points

The proposer's technical submittal regarding farebox construction and system design, as well as documented reliability, maybe used in this evaluation. Other design and performance elements of the components which comprise those systems will be evaluated. Route data, ridership information, tests results and maintenance factors may be considered in determining final points.

(2) Cost/Price: 15 points

The Evaluation Committee may consider the reliability of the parts to be provided, as well as parts standardization, warranties, and other factors that affect the overall cost in determining its assessment of point to be awarded. The time frame for contract performance of the product may be considered as material elements of the price offered. The extent to which MTA can analyze the cost and pricing data may affect the final point determination.

(3) Delivery: 15 points

The Committee will look at the proposed date of delivery and project completion, including training schedule.

(4) Qualification/Compliance: 15 points

MTA seek information regarding the Proposer's capabilities and experience, as well as those of manufacturers of key subsystems and components. At a minimum, the Proposer will want to include the following:

- A brief history of the Proposer's experience in the manufacture of transit fareboxes.
- The experience of the factory at which the fareboxes will be built, with specific references to production capacity, quality control, and quality assurance.
- A description of the company's product evaluation and testing cost control and partnering arrangements.
- Research and development capabilities including staffing, facilities and new technologies, which may be available for this solicitation.
- Capabilities for customer technical assistance, including expertise and experience, any third-party certifications, typical response times for both emergency and non-emergency situations.
- Other current and pending farebox orders, identifying the number of fareboxes, the customer, and dates of first and last production and deliveries.
- Capabilities for provision and service of replacement parts, including availability and delivery times under emergency and non-emergency situations;
- Established programs for the training.
- Listing of at least five (5) references. Listing the name, address, telephone number of customer's representative that are compatible to type and quantity to this solicitation.
- Procedures for the development and updating of technical manuals and publications.

(5) Proposed Preventative Maintenance Program: 12 points

The information provided by the Proposer in its technical submittal relating to the product provided will be utilized to evaluate the proposal. Farebox construction and system design, as well as documented reliability, may be used in this evaluation as well as other design and performance elements of the components which comprise those systems.

(6) Proposed Warranty: 12 points

Farebox construction and system design as well as documented reliability may be used in this evaluation as well as other design and performance elements of the components which comprise those systems. At a minimum, test results, safety and maintenance factors and cost of operation for the product design and system components proposed may be considered in determining final point for this factor.

(7) Training Schedule: 11 points

Training of MTA staff in the proper uses, functions, and appropriate maintenance of the system is deemed a deliverable, and the training schedule provided by the Proposer will be considered in the evaluation.

Basis for Award Criteria (Best Value):

This is a competitive source selection. The award will be made to that Proposer who is deemed responsible in accordance with the evaluation procedures, possesses the management, financial, technical and appropriate facility capabilities necessary to fulfill the requirements of the contract and whose proposal conforms to solicitation requirements, and is judged by an integrated assessment of the evaluation criteria to be most advantageous to MTA, price and other factors considered. For the purposes of this procurement, all evaluation factors, other than cost / price, when combined, are significantly more important than the cost / price area in this acquisition, therefore, MTA may select other than the lowest cost / priced, technically acceptable offer if it is determined that the additional technical merit offered is worth the additional cost in relation to other proposals received. For evaluation purposes, if proposals become more technically equivalent, then cost / price becomes more important.

3. Evaluation Procedures

All aspects of the evaluations of the proposals and any discussions/negotiations, including documentations, correspondence and meetings, will be kept confidential during the evaluation and negotiation process. Proposals will be analyzed for conformance with the instructions and requirements of the RFP and Contract documents. Proposals that do not comply with these instructions and do not include the required information may be rejected as insufficient or not be considered for the competitive range. MTA reserves the right to request a Proposer to provide any missing information and to make corrections. Therefore, Proposers shall pay close attention to and strictly follow all instructions. Submittal of a proposal will signify that the Proposer has accepted the whole of the Contract documents.

Evaluations will be made in strict accordance with all of the evaluation criteria and procedures specified in the "Qualification Requirements" and "Evaluation Criteria" sections. MTA will select for any reward the highest ranked proposal from responsible Proposers, which do not render this procurement financially infeasible and is judged to be most advantageous to MTA based on consideration of the above mentioned sections.

Qualifications of Responsible Proposers

Proposals will be evaluated in accordance with the requirements set forth in “Qualification Requirements” to determine the responsibility of Proposers. Any proposals from Proposers whom MTA finds not to be responsible and finds cannot be made to be responsible may not be considered for the competitive range. Final determination of a Proposers responsibility will be made upon the basis of initial information submitted in the proposal, any information submitted upon request by MTA, information submitted in a BAFO and information resulting from MTA inquiry of Proposers references and its knowledge of the Proposer.

Discussions with Proposers in the Competitive Range:

The Proposers whose proposals are found by MTA to be within the competitive range, or may be reasonably made to be within the competitive range, will be notified and any questions and/or requests for clarifications provided to them in writing. Each such Proposer may be invited for a private interview(s) and discussions with MTA to discuss answers to written or oral questions, clarifications, and any facet of its proposal.

In the event that a proposal, which has been included in the competitive range, contains conditions, exceptions, reservations or understandings to any Contract requirements, those said conditions, exceptions, reservations or understandings may be negotiated during these meetings. However, MTA shall have the right to reject any and all such conditions and/or exceptions, and instruct the Proposer to amend its proposal and remove said conditions and/or exceptions; and any Proposer failing to do so may cause MTA to find such proposal to be outside the competitive range.

No information, financial or otherwise, will be provided to any Proposer about any of the proposals from other Proposers. Proposers will not be given a specific price or specific financial requirements they must meet to gain further consideration, except that proposed prices may be considered to be too high with respect to the marketplace or unacceptable. Proposers will not be told of their rankings among the other Proposers.

Best and Final Offers (BAFO)

Each of the Proposers in the competitive range will be afforded the opportunity to amend its proposal and make its BAFO. The requests for BAFO’s shall include:

- * Notice that discussions/negotiations are concluded;
- * Notice that this is the opportunity for submission of a BAFO;
- * A common date and time for submission of written BAFO’s, allowing a reasonable opportunity for preparation of the written BAFO’s;
- * Notice that if any modification to a BAFO is submitted, it must be received by the date and time specified by MTA for the receipt of BAFO’s;
- * Notice that if Proposers do not submit a BAFO or a notice of withdrawal and another BAFO, their immediate previous offer will be construed as their BAFO.

Any modifications to the initial proposals made by a Proposer in its BAFO shall be identified in its BAFO. MTA will evaluate BAFO’s according to the same requirements and criteria as the initial proposal. MTA will make appropriate adjustments to the initial scores for any sub-criteria and criteria, which have been affected by any proposal modifications made by MTA. The BAFO’s.



These final scores and rankings within each criterion will again be arrayed by MTA and considered according to the relative degrees of importance of the "Evaluation Criteria".

MTA will then choose that proposal which it finds to be most advantageous to MTA based upon the evaluation criteria. The results of the evaluations and the selection of a proposal for any award will be documented in a report.

MTA reserves the right to make an award to a Proposer whose proposal it judges to be the most advantageous to MTA based upon the evaluation criteria, without conducting any written or oral discussions with any Proposers or solicitation of any BAFO.

1.5 RESPONSE TO PROPOSALS

A. Confidentiality of Proposals

Access to government records is governed by the State of Georgia. Except as otherwise required by the MTA; MTA will exempt from disclosure proprietary information, trade secrets and confidential commercial and financial information submitted in the proposal. Any such proprietary information, trade secrets or confidential commercial and information that which a Proposer believes should be exempted from disclosure shall be specifically identified and marked as such. Blanket-type identification by designating whole pages or sections as containing proprietary information, trade secrets or confidential commercial and financial information will not assure confidentiality. The specific proprietary information, trade secrets or confidential commercial and financial information must be clearly identified as such.

The Proposer may (or shall) submit proprietary information, trade secrets or confidential commercial and financial information, which an Proposer believes should be exempted from disclosure, in a separate volume specifically identified and marked as such as an appendix to the proposal.

Upon a request for records from a third party regarding this proposal MTA will notify, in writing, the party involved. The party involved must respond within three (3) calendar days with the identification of any and all "proprietary, trade secret, or confidential commercial or financial" information and the party involved shall indemnify MTA's defense costs associated with its refusal to produce such identified information; otherwise, the requested information may be released.

MTA shall employ sound business practices no less diligent than those used for MTA's own confidential information to protect the confidence of all licensed technology, software, documentation, drawings, schematics, manuals, data and other information and material provided by Proposers and the Contractor pursuant to the Contract which contain confidential commercial or financial information, trade secrets or proprietary information as defined in or pursuant to the MTA against disclosure of such information and material to third parties except as permitted by the Contract. The Contractor shall be responsible for ensuring that the confidential commercial or financial information, trade secrets or proprietary information, with such determinations to be made by MTA in its sole discretion, bears appropriate notices relating to its confidential character.

B. Acceptance/Rejection of Proposals

MTA reserves the right to reject any or all proposals for sound business reasons, to undertake discussions with one or more Proposers, and to accept that proposal or modified proposal which, in its judgment, will be most advantageous to MTA, price and other evaluation criteria considered. MTA reserve the right to consider any specific proposal which is conditional or not prepared in accordance with the instructions and requirements of this RFP to be noncompetitive. MTA reserve the right to waive any defects, or minor MTA informalities or irregularities in any proposal which do not materially affect the proposal or prejudice other Proposers.

If there is any evidence indicating that two or more Proposers are in collusion to restrict competition or otherwise engaged in anti-competitive practices, the proposals of all such Proposers shall be rejected and such evidence may be cause for disqualification of the participants in any future solicitations undertaken by MTA.

MTA may reject a proposal that includes unacceptable deviations as provided in “Conditions, Exceptions, Reservations or Understandings” (Section 1.2; C.)

C. Single Response Proposer

If only one proposal is received in response to this RFP and it is found by MTA to be acceptable, a detailed price/cost proposal may be requested of the single Proposer. A price or cost analysis, or both, possibly including an audit, may be performed by or for MTA of the detailed price/cost proposal in order to determine if the price is fair and reasonable. The Proposer has agreed to such analysis by submitting a proposal in response to this RFP. A price analysis is an evaluation of a proposed price that does not involve an in-depth evaluation of all the separate cost elements and the profit factors that comprise a Proposer’s price proposal. It should be recognized that a price analysis through comparison to other similar procurements must be based on an established or competitive price of the elements used in the comparison. The comparison must be made to a purchase of similar quantity, involving similar specifications and in a similar time frame. Where a difference exists, a detailed analysis must be made of this difference and costs attached thereto. Where it is impossible to obtain a valid price analysis, it may be necessary to conduct a cost analysis of the proposed price. A cost analysis is a more detailed evaluation of the cost elements in the Proposer’s offer to perform. It is conducted to form an opinion as to the degree to which the proposed costs represent what the Proposer’s performance should cost. A cost analysis is generally conducted to determine whether the Proposer is applying sound management in proposing the application of resources to the contracted effort and whether costs are allowable, allocable and reasonable. Any such analyses and the results there from shall not obligate MTA to accept such a single proposal; and MTA may reject such proposal at its sole discretion.

D. Cancellation of Procurement

MTA reserve the right to cancel the procurement, for sound business reasons, at any time before the Contract is fully executed and approved on behalf of MTA.

E. Availability of Funds

This procurement is subject to the availability of federal, and MTA funding. MTA's obligation hereunder is contingent upon the availability of appropriated funds from which payment for the



Contract purposes can be made. No legal liability on the part of MTA for any payment shall arise until funds are made available to the Contracting Officer for this Contract and until the Contractor receives notice of such availability, to be confirmed in writing by the Contracting Officer. Any award of Contract hereunder will be conditioned upon said availability of funds for the Contract.

F. Protest Procedures

General - Protests may be made by prospective Proposers or proposers whose direct economic interest would be affected by award of a contract or by failure to award a contract. MTA will consider all protests requested in a timely manner regarding the award of a contract, whether submitted before or after an award. All protests are to be submitted in writing to: Macon Transit Authority, 200 Cherry Street, Macon, Georgia 31201-7938.

Protest submissions should be concise, logically arranged, and clearly state the grounds for protest. A protest must include at least the following information:

- (a) Name, address, and telephone number of protestor,
- (b) Identification of contract solicitation number,
- (c) A detailed statement of the legal and factual grounds of the protest, including copies of relevant documents, and
- (d) A statement as to what relief is requested.

Protests must be submitted to MTA in accordance with these procedures and time requirements, must be complete and contain all issues that the protestor believes relevant.

In the procedures outlined below, the General Manager is considered to be the Contracting Officer.

Protests Before Bid Opening - Bid protests alleging restrictive specifications or improprieties which are apparent prior to bid opening or receipt of proposals must be submitted in writing to the Contracting Officer at the address above and must be received at least seven (7) days prior to bid opening or closing date for receipt of bids or proposals. If the written protest is not received by the time specified, bids or proposals may be received an award made in the normal manner unless the Contracting Officer determines that remedial action is required. Oral protests not followed up by a written protest will be disregarded. The Contracting Officer may request additional information from the appealing party and information or response from other Proposers, which shall be submitted to the Contracting Officer not less than ten (10) days after the date of MTA's request. So far as practicable, appeals will be decided based on the written appeal, information and written response submitted by the appealing party and other Proposers. In failure of any party to timely respond to a request for information, it may be deemed by MTA that such party does not desire to participate in the proceeding, does not contest the matter, or does not desire to submit a response, and in such a case, the protest will proceed and will not be delayed due to the lack of a response. Upon receipt and review of written submissions and any independent evaluation deemed appropriate by MTA, the

Contracting Officer shall either (a) render a decision, or (b) at the sole election of the Contracting Officer, conduct an informal hearing at which the interested parties will be afforded opportunity to present their respective positions and facts, documents, justification, and technical information in support thereof. Parties may, but are not required to, be represented by counsel at the informal hearing, which will not be subject to formal rules of evidence or procedures. Following the informal hearing, if one is held, the Contracting Officer will render a decision, which shall be final, and notify all interested parties thereof in writing but no later than ten (10) days from the date of informal hearing.

Protests After Bid Opening/Prior to Award - Bid protests against the making of an award by the MTA must be submitted in writing to the Contracting Officer and received within seven (7) days of the award by the MTA. Notice of the protest and the basis therefore will be given to all Proposers or proposers. In addition, when a protest against the making of an award by the MTA is received and it is determined to withhold the award pending disposition of the protest, the Proposers or proposers whose bids or proposals might become eligible for award shall be requested, before expiration of the time for acceptance, to extend or to withdraw the bid. Where a written protest against the making of an award is received in the time period specified, award will not be made prior to seven (7) days after resolution of the protest unless MTA determines that:

- (a) The items to be purchased are urgently required
- (b) Delivery or performance will be unduly delayed by failure to make award promptly, or
- (c) Failure to make award will otherwise cause undue harm to MTA or the federal government.

Protests to Federal Transit Administration (FTA) - Under certain limited circumstances, an interested party may protest to the FTA the award of a contract pursuant to an FTA grant. FTA's review of any such protest will be limited to:

- (a) Alleged failure by MTA to have written protest procedures or alleged failure to follow such procedures, or
- (b) Alleged violations of specific federal requirement that provides an applicable complaint procedure shall be submitted and processed in accordance with that federal regulation.

Protestors shall file a protest with FTA not later than five (5) working days after a final decision of MTA's Contracting Officer is rendered under the MTA protest procedure. In instances where the protestor alleges that MTA failed to make a final determination on the protest, the protestor shall file a complaint with FTA no later than five (5) federal working days after the protestor knew or should have known of MTA's failure to render a final determination in the protest.

Submission of Protest to FTA - Protests submitted to FTA should be submitted to the FTA Region Office in Atlanta, Georgia with a concurrent copy to MTA. The protest filed with FTA shall:

- (a) Include the name and address of the protestor

- (b) Identify the MTA project number and the number of the contract solicitation
- (c) Contain a statement of the grounds for protest and any supporting documentation. This should detail the alleged failure to follow MTA's protest procedures, or the alleged failure to have procedures, and be fully supported to the extent possible
- (d) Include a copy of the local protest filed with MTA and a copy of the MTA decision, if any.

1.6 OFFER

Proposer shall complete the following form and include same in the price proposal.

OFFER

By executing below Proposer hereby offers to furnish equipment and services as specified in Macon Transit Authority Request for Proposals No. 2010-05A including the General Provisions (Section 2) and Farebox Technical Specifications.

Proposer: _____ Name _____ Street Address _____ City, State, Zip _____ Signature of Authorized Signer _____ Title

PART 2
GENERAL CONTRACTUAL PROVISIONS

2.0 DEFINITIONS

The following are definitions of special terms used in this document.

Authorized Signer. The person who is executing this Contract on behalf of the Proposer/Contractor and who is authorized to bind the Proposer/Contractor.

Competitive Negotiation Solicitation. Procuring Agency's Request for Proposals.

Contract. The Offer and its acceptance by the Procuring Agency as manifested by the Contract documents specified in "Contract Documents" (Section 2.2).

Contracting Officer. The person who is executing this Contract on behalf of the Procuring Agency and who has complete and final authority except as limited herein.

Defect. Patent or latent malfunction or failure in manufacture, installation, or design of any component or subsystem.

Due Date. The date and time by which Offers (proposals or bids) must be received by the Procuring Agency as specified in "Instructions to Proposers" (Section 1.3; A. of Procuring Agency's solicitation).

Offer. A promise, if accepted, to deliver equipment and services according to the underlying solicitation of the Procuring Agency documented using the prescribed form in the solicitation, including any bid or proposal or Best and Final Offer.

Proposer. A legal entity which makes an Offer, including a Proposer or proposer.

Procuring Agency. MTA / Macon Transit Authority (MTA)

Related Defect. Damage inflicted on any component or subsystem as a direct result of a separate Defect.

Supplier or Subcontractor. Any manufacturer, company, or agency providing units, components, or subassemblies for inclusion in the van. Supplier items shall require qualification by type and acceptance tests in accordance with requirements associated with the contractors Quality Assurance Program.

Work. Any and all labor, supervision, services, materials, machinery, equipment, tools, supplies, and facilities called for by the Contract and necessary to the completion thereof.

CONTRACT AND MODIFICATIONS

2.1 CONTRACT AWARD AND EXECUTION

The acceptance of an Offer for award, if made, shall be evidenced by a notice of award of Contract in writing delivered in person or by registered mail to the Proposer whose Offer is accepted. No other act by the Procuring Agency shall evidence acceptance of an Offer. Such notice shall obligate said Proposer to commence performance under the Contract as specified in "Production of Documents" (Section 2.13).

2.2 CONTRACT DOCUMENTS

part 1 – Request for Proposal
Part 2 – General Contractual Provisions
Part 3 – Farebox and Related Equipment Technical Specifications
Part 4 – Required Forms

2.3 MODIFICATIONS TO CONTRACT

A. CONTRACTOR CHANGES

Any proposed change in the Contract shall be submitted to the appropriate Procuring Agency for its prior approval.

B. WRITTEN CHANGE ORDERS

Oral change orders are not permitted. No change in this Contract shall be made unless the Contracting Officer gives prior written approval therefore. The contractor shall be liable for all costs resulting from, and / or for satisfactorily correcting, any specification change not properly ordered by written modification to the Contract and signed by the Contracting Officer.

C. CHANGE ORDER PROCEDURE

As soon as reasonably possible, but no later than 30 (thirty) calendar days after receipt of the written change order to modify the Contract, the Contractor shall submit to the Contracting Officer a detailed price and schedule proposal for the work to be performed. This proposal shall be accepted or modified by negotiations between the Contractor and the Contracting Officer. At that time a detailed modification shall be executed in writing by both parties. Disagreements that cannot be resolved within negotiations shall be resolved in accordance with the Contract Disputes clause. Regardless of any disputes, the Contractor shall proceed with the work ordered.

2.4 PARTIES AND CHANGES IN PARTIES

A. PARTIES

The parties to the Contract are the Procuring Agency as defined in "Definitions".

B. SUCCESSION

The Contract will be binding on the parties, their successors, and assigns.

C. ASSIGNMENT AND SUBCONTRACTING

The Contractor will not assign or subcontract its rights or obligations under the Contract without prior written permission of the Procuring Agency, and no such assignment will be effective until approved in writing by the Procuring Agency.

2.5 SPECIFICATION AND OFFER OMISSIONS

Notwithstanding the provision of drawings, technical specifications, or other data by the Procuring Agency, the Contractor shall have the responsibility of supplying all parts and details required to make the fare collection system complete and ready for service even though such details may not be specifically mentioned in the drawings and specifications.

Any request, condition, exception, reservation, understanding or other deviation by Contractor not separately stated as required by "Instructions to Proposers" (Section 1.3; A. of the Procuring agency's solicitation) by completing the specified form(s) shall be invalid and shall not be binding on the Procuring Agency.

2.6 BREACHES AND DISPUTES

Except as otherwise provided in this Contract, any dispute concerning a question of fact arising under or related to the Contract which is not disposed of by agreement shall be decided in accordance with the following steps. However, by mutual agreement the matter may be taken immediately to any higher step in the dispute resolution process, or mutually agreed to alternative dispute resolution process (which may include structured negotiations, mediation or arbitration), or litigation. Pending final resolution of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract and in accordance with the Contracting Officer's or Chief Executive Officer's decision, as the case may be.

- A. Notice of Dispute. All disputes shall be initiated through a written dispute notice submitted by either party to the other party within 10 (ten) days of the determination of the dispute.
- B. The Contracting Officer shall issue a written decision within 14 (fourteen) days of receipt of a request.
- C. Within 30 (thirty) days of the issuance of any administratively final and conclusive decision under this the Contractor shall notify the Procuring Agency in writing of the Contractor's agreement with the final decision. Failure to provide such written notice of agreement shall indicate intent by the Contractor to litigate the claim.
- D. All contractual agreements shall be subject to, governed by, and construed according to the laws of the State of Georgia.

2.7 COMMUNICATIONS

Communications in connection with this Contract shall be in writing and shall be delivered personally; or by facsimile; or by regular, registered, or certified mail addressed to the Officer(s) or employee(s) of the Procuring Agency and of the Contractor designated to receive such communications. Telephone calls may be used to expedite communications but shall not be

official communication unless confirmed in writing. Communications shall be considered received at the time actually received by the addressee or designated agent.

DELIVERY AND TITLE

2.8 DELIVERIES

A. DELIVERY PROCEDURE

Delivery of fareboxes and related equipment shall be determined by signed receipt of the Procuring Agency's designated agent(s) Richard Jones at the following point of delivery and may be preceded by a cursory inspection of the fareboxes and related equipment.

Macon Transit Authority (MTA)
Suite 100
200 Cherry Street
Macon, Georgia 31201-7938

Any deviations to the delivery point must be approved by MTA.

B. DELIVERY SCHEDULE

The fareboxes and related equipment shall be delivered at a rate as per agreed to with the Contractor. Hours of delivery shall be 9 a.m. through 4 p.m. the following days of the week: Monday through Friday.

2.9 UNAVOIDABLE DELAYS

A. CONTRACTOR'S DELAY

If the Contractor is delayed at any time during the progress of the Work by the neglect or failure of the Procuring Agency or by a cause described below, then the time for completion and/or affected delivery date(s) shall be extended by the Procuring Agency subject to the following conditions:

- A. The cause of the delay arises after the notice of award and neither was nor could have been anticipated by the Contractor by reasonable investigation before such award;
- B. The Contractor demonstrates that the completion of the Work and/or affected deliver(s) will be actually and necessarily delayed;
- C. The effect of such cause cannot be avoided or mitigated by the exercise of all reasonable precautions, efforts and measures whether before or after the occurrence of the cause of delay; and
- D. The Contractor makes written request and provides other information to the Procuring Agency as described in "Notification of Contractor Delay" (section 2.9; B. below).

A delay meeting all the conditions of this section shall be deemed an excusable delay. Any concurrent delay which does not constitute an excusable delay shall not be the sole basis for denying a request hereunder.

The Procuring Agency reserves the right to rescind or shorten any extension previously granted, if subsequently the Procuring Agency determines that any information provided by the Contractor support of a request for an extension of time was erroneous; provided however, that such information or facts, if known, would have resulted in a denial of the request for an excusable delay. Notwithstanding the above, the Procuring Agency will not rescind or shorten any extension previously granted if the Contractor acted in reliance upon the granting of such extension and such extension was based on information which, although later found to have been erroneous, was submitted in good faith by the Contractor.

B. NOTIFICATION OF CONTRACTOR DELAY

Notwithstanding “Contractor’s Delay” (Section 2.9; A.), no extension or adjustment of time shall be granted unless (1) written notice of the delay is filed with the Procuring Agency within 14 (fourteen) calendar days after the commencement of the delay and (2) a written application therefore, stating in reasonable detail the causes, the effect to date and the probable future effect to date and the probable future effect on the performance of the Contractor under the Contract, and the portion or portions of the Work affected, is filed by the Contractor with the Procuring Agency within 30 (thirty) calendar days after the commencement of the delay. No such extension or adjustment shall be deemed a waiver of the rights of either party under this Contract. The Procuring Agency shall make its determination within 30 (thirty) calendar days after receipt of the application.

2.10 DELIVERY PAYMENT

PAYMENT

The Procuring Agency shall make payment in full to the Contractor upon equipment installation and acceptance for all costs and expenses of completing the Work in accordance with the Contract, including but not limited to all labor and material required, overhead, expenses, storage and shipping, risks and obligations, taxes (as applicable), fees and profit.

The Procuring Agency shall make payments for fareboxes and related equipment at the unit prices itemized in the Price Schedule within 30 (thirty) calendar days after the delivery and acceptance of each fareboxes and related equipment and receipt of a proper invoice. In the event that fareboxes and related equipment does not meet all requirements for acceptance the Procuring Agency may, at its exclusive option, “conditionally accept” the fareboxes and related equipment and place it into revenue service pending receipt of Contractor furnished materials and /or labor necessary to effectuate corrective action for acceptance. For any conditionally accepted fareboxes and related equipment, the payment shall be reduced by an amount to be withheld, and paid upon corrective action by the Contractor, equal to twice the estimated cost for parts and labor for the corrective action.

The Procuring Agency shall make payments for spare parts and/or equipment at the unit price itemized in the price schedule within 30 (thirty) calendar days after the delivery and acceptance of said spare parts and/or equipment and receipt of a proper invoice.

The Procuring Agency shall make a final payment for all withholding within 30 (thirty) calendar days of receipt of a final proper invoice and the following:

- A. Delivery and acceptance of all Contract deliverables, including manuals and other documentation required by the Contract.
- B. Rectification of any deficiencies found during the acceptance of fareboxes and related equipment.
- C. Contractor provision of any certifications as required by law and/or regulations.
- D. Completion of post delivery audits required under the Contract.

SERVICE AND PARTS

2.11 ENGINEER / SERVICE REPRESENTATIVES

The Contractor shall, at its own expense, have a competent engineering service representative(s) available on request to assist the Procuring Agency's staff in the solution of engineering or design problems within the scope of the specifications that may arise during the warranty period. This does not relieve the Contractor of responsibilities under Warranty Provisions.

AUDIT AND INSPECTION OF RECORDS

In accordance with 49 C.F.R. § 18.36(i), 49 C.F.R § 19.48(d), and 49 U.S.C. § 5325(a), provided the Procuring Agency is the FTA Recipient or a sub-grantee of the FTA Recipient, the Contractor agrees to provide the Procuring Agency, FTA, the Comptroller General of the United States, the Secretary of the U.S. Department of Transportation, or any of their duly authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to or relate to this Contract (1) for the purpose of making audits, examinations, excerpts, and transcriptions and (2) when conducting an audit and inspection.

- A. In the event of a sole source Contract, or single Offer, single responsive Offer, or competitive negotiated procurement the Contractor shall maintain and the Contracting Officer, the U.S. Department of Transportation (if applicable), or the representatives thereof, shall have the right to examine all books, records, documents, and other cost and pricing data related to the Contract price, unless such pricing is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the public, or prices set by law or regulation, or combinations thereof. Data related to the negotiation or performance of the Contract shall be made available for the purpose of evaluating the accuracy, completeness, and currency of the cost or pricing data. The right of examination shall extend to all documents necessary for adequate evaluation of the cost or pricing data, along with the computations and projections used therein, including review of accounting principles and practices that reflect properly all direct and indirect costs anticipated for the performance of the Contract.
- B. For Contract modifications or change orders the Contracting Officer, the U.S. Department of Transportation (if applicable), or their representatives shall have the right to examine all books, records, documents, and other cost and pricing data related

to a Contract modification, unless such pricing is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the public, or prices set by law or regulation, or combinations thereof. Data related to the negotiation or performance of the Contract modification or change order shall be made available for the purpose of evaluating the accuracy, completeness, and currency of the cost or pricing data. The right of examination shall extend to all documents necessary for adequate evaluation of the cost or pricing data, along with the computations and projections used therein, either before or after execution of the Contract modification or change order for the purpose of conducting a cost analysis. If an examination made after execution of the Contract modification or change order reveals inaccurate, incomplete, or out-of-date data, the Contracting Officer may renegotiate the Contract modification or change order price adjustment and the Procuring Agency shall be entitled to any reductions in the price that would result from the application of accurate, complete or up-to-date data.

- C. For any cost reimbursable work the Contractor shall maintain and the Contracting Officer, the U.S. Department of Transportation (if applicable), or their representatives shall have the right to examine books, records, documents, and other evidence, including review of accounting principles and practices that reflect properly all direct and indirect costs incurred as related to said cost reimbursable work.
1. The materials described in Paragraphs A, B and C above shall be available at the Contractor's office at all reasonable times for inspection, audit, and making excerpts and transcriptions until 3 (three) years from the date of final payment under the Contract except that the materials described in Paragraph A above shall also be available prior to any award and materials relating to "Service and Parts".
 2. The Contracting Officer and his/her representative and any other parties authorized under this clause shall employ sound business practices to protect the confidence of the data specified under this clause, for which the Contractor provides access, against disclosure of such information and material to third parties except as permitted by the Contract. The Contractor shall be responsible for ensuring that any confidential data bears appropriate notices relating to its confidential character.
 3. The requirements of this section are in addition to other audit, inspection, and record-keeping provisions specified elsewhere in the Contract documents.

RISK

2.12 INSURANCE

During the duration of this Agreement, Contractor shall procure and maintain a worker's compensation and employer's liability policy. This policy shall include an "all states" endorsement. The employer's liability policy shall cover claims for injury, disease or death of Contractor employees, which for any reason, may not fall with the provisions of the worker's compensation law. The liability limits shall not be less than: worker's compensation – statutory; employer's liability – \$500,000.00 each occurrence. A comprehensive general liability policy shall also be procured and maintained by Contractor that shall be written in a comprehensive form and shall protect Macon Transit Authority and Contractor against all claims arising from injuries to persons (other than Contractor's employees) or damage to property of Macon Transit Authority or others arising out of any such act or omission of Contractor, its agents or employees. The liability limit of such policy shall not be less than \$500,000.00 per occurrence for bodily injury, death and property damage. Satisfactory certificates of insurance shall be filed with Macon Transit Authority prior to the time Contractor starts any work under this Agreement.

2.13 PRODUCTION OF DOCUMENTS

Upon award of the Contract to an Proposer, such Proposer shall commence performance under the Contract by executing all Contract Guaranty Agreements provided with the Offer, by furnishing any required bonds, and by furnishing copies of the certificates of insurance required to be procured by the Contractor pursuant to the Contract documents within 30 (thirty) calendar days after the date of receipt of the notice of award or within such further time as the Procuring Agency may allow. Failure to fulfill these requirements within the specified time is cause for termination of the Contract under "Termination for Default" (Section 2.6; B.).

2.14 INDEMNIFICATION

The Contractor shall, to the extent permitted by law (1) protect, indemnify and save the Procuring Agency and its officers, employees and agents, including consultants, harmless from and against any and all liabilities, damages, claims, demands, liens, encumbrances, judgments, awards, losses, costs, expenses, and suits or actions or proceedings, including reasonable expenses, costs and attorneys' fees incurred by the Procuring Agency and its officers, employees and agents, including consultants, in the defense, settlement or satisfaction thereof, for any injury, death, loss or damage to persons or property of any kind whatsoever, arising out of, or resulting from, the negligent acts, errors or omissions of the Contractor, including negligent acts, errors or omissions of its officers, employees, servants, agents, subcontractors and suppliers; and (2) upon receipt of notice and if given authority, shall settle at its own expense or undertake at its own expense the defense of any such suit, action or proceeding, including appeals, against the Procuring Agency and its officers, employees and agents, including consultants, relating to such injury, death, loss or damage. Each party shall promptly notify the other in writing of the notice or assertion of any claim, demand, lien, encumbrance, judgment, award, suit, action or other proceeding hereunder. The Contractor shall have sole charge and direction of the defense

of such suit, action or proceeding. The Procuring Agency shall not make any admission which might be materially prejudicial to the Contractor unless the Contractor has failed to take over the conduct of any negotiations or defense within a reasonable time after receipt of the notice and authority above provided. The Procuring Agency shall at the request of the Contractor furnish to the Contractor all reasonable assistance that may be necessary for the purpose of defending such suit, action or proceeding, and shall be repaid all reasonable costs incurred in doing so. The Procuring Agency shall have the right to be represented therein by advisory counsel of its own selection at its own expense.

The obligations of the Contractor under the above paragraph shall not extend to circumstances where the injury, or death, or damages is caused solely by the negligent acts, errors or omissions of the Procuring Agency, its officers, employees, agents or consultants, including negligence in (1) the preparation of the Contract documents, or (2) the obligations of the Contractor shall not extend to circumstances where the injury, or death, or damages is caused, in whole or in part, by the negligence of any third party operator, not including an assignee or subcontractor of the Contractor, subject to the right of contribution as provided in the next sentence below. In case of joint or concurrent negligence of the parties hereto giving rise to a claim or loss against either one or both, each shall have full rights of contribution from the other.

FEDERAL REQUIRED CLAUSES

POLICIES FOR ALL TIERS

Contractor agrees to comply with the subsections of this Section and to include these requirements in all subcontracts of every tier. The following are Federal Clauses required:

NO OBLIGATION BY THE FEDERAL GOVERNMENT

(1) MTA and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the MTA, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

(2) The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTIONS

(1) The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the FTA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that

if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

(2) The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.

(3) The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the

ACCESS TO RECORDS

Access to Records - The following access to records requirements apply to this Contract:

The Contractor agrees to provide MTA, the FTA Administrator, the Comptroller General of the United States or any of their authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions. Contractor also agrees, pursuant to 49 C.F.R. 633.17 to provide the FTA Administrator or his authorized representatives including any PMO Contractor access to Contractor's records and construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5307, 5309 or 5311.

The Contractor agrees to provide the Purchaser, FTA Administrator, the Comptroller General of the United States or any of their duly authorized representatives with access to any books, documents, papers and record of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions.

The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

The Contractor agrees to maintain all books, records, accounts and reports required under this contract for a period of not less than three years after the date of termination or expiration of this contract, except in the event of litigation or settlement of claims arising from the performance of this contract, in which case Contractor agrees to maintain same until the Purchaser, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto. Reference 49 CFR 18.39(i) (11).

INCORPORATION OF FTA TERMS

The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1F are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any (MTA) requests which would cause the (MTA) to be in violation of the FTA terms and conditions.

CHANGES IN FEDERAL LAWS AND REGULATIONS

The Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the agreement between Procuring Agency and FTA that funds any part of this Contract, as they may be amended or promulgated from time to time during the term of this Contract. Contractor's failure to so comply shall constitute a material breach of this Contract.

CIVIL RIGHTS

The following requirements apply to the underlying contract:

- (1) Nondiscrimination - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.
- (2) Equal Employment Opportunity - The following equal employment opportunity requirements apply to the underlying contract:
 - (a) Race, Color, Creed, National Origin, Sex - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees

are treated during employment, without regard to their race, color, creed, national origin, sex, or age. 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. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(b) Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(c) Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

- (3) The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

DISADVANTAGED BUSINESS ENTERPRISE

This contract is subject to the requirements of Title 49, Code of Federal Regulations, Part 26, Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs. The agency's overall goal for DBE participation is 3 %. A separate contract goal has not been established for this procurement

The contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of this DOT-assisted contract. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as MTA deems appropriate. Each subcontract the contractor signs with a subcontractor must include the assurance in this paragraph (see 49 CFR 26.13(b)).

Proposers/Proposers are required to document sufficient DBE participation to meet these goals or, alternatively, document adequate good faith efforts to do so, as provided for in 49 CFR 26.53. Award of this contract is conditioned on submission of the following concurrent with and accompanying an initial proposal.

1. The names and addresses of DBE firms that will participate in this contract;
2. A description of the work each DBE will perform;
3. The dollar amount of the participation of each DBE firm participating;
4. Written documentation of the Proposer/Proposer's commitment to use a DBE subcontractor whose participation it submits to meet the contract goal;
5. Written confirmation from the DBE that it is participating in the contract as provided in the prime contractor's commitment; and
6. If the contract goal is not met, evidence of good faith efforts to do so.
Proposers must present the information required above with initial proposals (see 49 CFR 26.53(3)).

The successful Proposer/Proposer will be required to report its DBE participation obtained through race-neutral means throughout the period of performance.

- d. The contractor is required to pay its subcontractors performing work related to this contract for satisfactory performance of that work no later than 30 days after the contractor's receipt of payment for that work from MTA. In addition, the contractor may not hold a retainer from its subcontractors.
- e. The contractor must promptly notify MTA whenever a DBE subcontractor performing work related to this contract is terminated or fails to complete its work, and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. The contractor may not terminate any DBE subcontractor and perform that work through its own forces or those of an affiliate without prior written consent of MTA.

INCORPORATION OF FTA TERMS

Incorporation of Federal Transit Administration (FTA) Terms - The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1F, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any (name of grantee) requests which would cause (name of grantee) to be in violation of the FTA terms and conditions.

BREACHES AND DISPUTES

Disputes - Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of MTA's. This decision shall be final and conclusive unless within [ten (10)] days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the General

Manager. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the General Manager shall be binding upon the Contractor and the Contractor shall abide by the decision.

Performance During Dispute - Unless otherwise directed by MTA, Contractor shall continue performance under this Contract while matters in dispute are being resolved.

Claims for Damages - Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefore shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage.

Remedies - Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between MTA and the Contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State in which the MTA is located.

Rights and Remedies - The duties and obligations imposed by the Contract Documents and the rights and remedies available there under shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by MTA, (Architect) or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach there under, except as may be specifically agreed in writing.

TERMINATION

The following language outline conditions under which the contract may be terminated for default as well as conditions where the contract may be terminated because of circumstances beyond the control of the contractor.

a. Termination for Convenience (General Provision) The (Recipient) may terminate this contract, in whole or in part, at any time by written notice to the Contractor when it is in the Government's best interest. The Contractor shall be paid its costs, including contract close-out costs, and profit on work performed up to the time of termination. The Contractor shall promptly submit its termination claim to (Recipient) to be paid the Contractor. If the Contractor has any property in its possession belonging to the (Recipient), the Contractor will account for the same, and dispose of it in the manner the (Recipient) directs.

b. Termination for Default [Breach or Cause] (General Provision) If the Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the (Recipient) may terminate this contract for default. Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The

contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

If it is later determined by the (Recipient) that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the (Recipient), after setting up a new delivery of performance schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

c. Opportunity to Cure (General Provision) The (Recipient) in its sole discretion may, in the case of a termination for breach or default, allow the Contractor [an appropriately short period of time] in which to cure the defect. In such case, the notice of termination will state the time period in which cure is permitted and other appropriate conditions

If Contractor fails to remedy to (Recipient)'s satisfaction the breach or default of any of the terms, covenants, or conditions of this Contract within [ten (10) days] after receipt by Contractor of written notice from (Recipient) setting forth the nature of said breach or default, (Recipient) shall have the right to terminate the Contract without any further obligation to Contractor. Any such termination for default shall not in any way operate to preclude (Recipient) from also pursuing all available remedies against Contractor and its sureties for said breach or default.

d. Waiver of Remedies for any Breach In the event that (Recipient) elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this Contract, such waiver by (Recipient) shall not limit (Recipient)'s remedies for any succeeding breach of that or of any other term, covenant, or condition of this Contract.

f. Termination for Default (Supplies and Service) If the Contractor fails to deliver supplies or to perform the services within the time specified in this contract or any extension or if the Contractor fails to comply with any other provisions of this contract, the (Recipient) may terminate this contract for default. The (Recipient) shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. The Contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner or performance set forth in this contract.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Recipient.

ENVIRONMENTAL PROTECTION

The Contractor agrees to comply with all applicable requirements of the National Environmental Policy Act of 1969, as amended, 42 U.S.C. §§ 4321 et seq. consistent with Executive Order No. 11514, as amended, "Protection and Enhancement of Environmental Quality," 42 U.S.C. § 4321 note; FTA statutory requirements on environmental matters at 49 U.S.C. § 5324(b); Council on Environmental Quality regulations on compliance with the National Environmental Policy Act of

1969, as amended, 40 C.F.R. Part 1500 et seq.; And joint FHWA/FTA regulations, "Environmental Impact and Related Procedures," 23 C.F.R. Part 771 and 49 C.F.R. Part 622.

ACCESS REQUIREMENT TO PERSONS WITH DISABILITIES (ADA)

The Contractor agrees to comply with the requirements of 49 U.S.C. § 5301(d) which expresses the Federal policy that the elderly and persons with disabilities have the same right as other persons to use mass transportation service and facilities, and that special efforts shall be made in planning and designing those services and facilities to implement those policies. The Contractor also agrees to comply with all applicable requirements of section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, which prohibits discrimination on the basis of handicaps, and with the Americans with Disabilities Act of 1990 (ADA), as amended, 42 U.S.C. §§ 12101 et seq., which requires the provision of accessible facilities and services, and with the following Federal regulations, including any amendments thereto:

- (1) U.S. DOT regulations, "Transportation Services for Individuals with Disabilities (ADA)," 49 C.F.R. Part 37;
- (2) U.S. DOT regulations, "Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Assistance," 49 C.F.R. Part 27;
- (3) Joint U.S. Architectural and Transportation Barriers Compliance Board/U.S. DOT regulations, "Americans with Disabilities (ADA) Accessibility Specifications for Transportation Vehicles," 36 C.F.R. Part 1192 and 49 C.F.R. Part 38;
- (4) U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability in State and Local Government Services," 28 C.F.R. Part 35;
- (5) U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities," 28 C.F.R. Part 36;
- (6) U.S. GSA regulations, "Accommodations for the Physically Handicapped" 41 C.F.R. Subpart 101-19;
- (7) U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630;
- (8) U.S. Federal Communications Commission regulations, "Telecommunications Relay Services and Related Customer Premises Equipment for the Hearing and Speech Disabled," 47 C.F.R. Part 64, Subpart F; and
- (9) FTA regulations, "Transportation for Elderly and Handicapped Persons," 49 C.F.R. Part 609; and
- (10) Any implementing requirements FTA may issue.

CLEAN AIR

(1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq . The Contractor agrees to report each violation to the MTA and understands and agrees that the MTA will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

CLEAN WATER

(1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Contractor agrees to report each violation to the MTA and understands and agrees that the MTA will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

DEBARMENT AND SUSPENSION CERTIFICATION REQUIREMENTS

Instructions for Certification

1. By signing and submitting this bid or proposal, the prospective lower tier participant is providing the signed certification set out below.

The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, MTA may pursue available remedies, including suspension and/or debarment.

2. The prospective lower tier participant shall provide immediate written notice to MTA if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

3. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "persons," "lower tier covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549 [49 CFR Part 29]. You may contact MTA for assistance in obtaining a copy of those regulations.

4. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or

voluntarily excluded from participation in this covered transaction, unless authorized in writing by MTA.

5. The prospective lower tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction", without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Non-Procurement List issued by U.S. General Service Administration.

6. Nothing contained in the foregoing shall be construed to require establishment of system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

7. Except for transactions authorized under Paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to all remedies available to the Federal Government, (MTA) may pursue available remedies including suspension and/or debarment.

"Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction"

(1) The prospective lower tier participant certifies, by submission of this bid or proposal, that neither it nor its "principals" [as defined at 49 C.F.R. § 29.105(p)] is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) When the prospective lower tier participant is unable to certify to the statements in this certification, such prospective participant shall attach an explanation to this proposal.

STATE AND LOCAL LAW DISCLAIMER

The use of many of the suggested clauses are not governed by Federal law, but are significantly affected by State law. The language of the suggested clauses may need to be modified depending on state law, and that before the suggested clauses are used in the MTA's procurement documents, the grantees should consult with their local attorney.

BUY AMERICA

The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. Part 661, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. 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. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j) (2) (C) and 49 C.F.R. 661.11. Rolling stock must be assembled in the United States and have a 60 percent domestic content.

A Proposer or Proposer must submit to the MTA the appropriate Buy America certification with all bids or offers on FTA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as non-responsive. This requirement does not apply to lower tier subcontractors.

FLY AMERICA

The Contractor agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 CFR Part 301-10, which provide that recipients and sub-recipients of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

LOBBYING

Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

CARGO PREFERENCE

The contractor agrees:

- A. to use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels;

- B. to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of leading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the FTA recipient (through the contractor in the case of a subcontractor's bill-of-lading.)

- C. To include these requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

ENERGY CONSERVATION

The Contractor agrees to comply with 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. 6321 et seq.).

ITS ARCHITECTURE

Proposer agrees to comply with National ITS Architecture and Standards.

PART 3
FAREBOX TECHNICAL SPECIFICATIONS

3. 1 FAREBOX AND RELATED EQUIPMENTS TECHNICAL SPECIFICATIONS

FUNCTION

I. GENERAL REQUIREMENTS

A. Scope of Work

The Contractor shall furnish and deliver to the Macon Transit Authority (MTA) the specified quantity of electronic validating bus fareboxes, revenue collection equipment, data processing equipment, spare parts and other goods and services described in these specifications.

All equipment shall be provided with the appropriate license(s) and copies of software and firmware required to operate the system throughout its service life at MTA.

The Contractor shall remove existing fare collection equipment, install the proposed fare collection equipment and perform all tasks necessary to configure it into a complete system, with each item thoroughly tested and ready for operation. MTA 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.

The Contractor may make at least one on-site visit and conduct such other surveys as may be necessary to familiarize itself with the proposed locations of the revenue collection equipment and the layout and organization of MTA bus facilities.

Positioning

Lastly, Figure 1 illustrates the general location of current fareboxes that are in operation on our cut-away buses. The figure also displays the farebox location in reference to the driver. This arrangement is not optimum for the driver due to the visual obstruction in the direction of the main passenger door entry that is caused by the location of the farebox. MTA strongly desires a solution that will eliminate this problem. To assist the Contractor, MTA has provided inside specification of the cut-way buses that are in operation by MTA. The inside specifications of the buses are provided in item 3 entitled, "Location" under section II. VALIDATING FAREBOX – TECHNICAL DESCRIPTION.



Figure 1

B. Base Equipment and Services to Be Provided

The Contractor shall provide to MTA the following equipment and services for the base system:

- 20 electronic validating bus fareboxes each furnished with two cashboxes, 2 of these units will be used as spares. Each farebox shall be equipped with all standard items and features specified herein and any optional equipment that may be agreed upon;

- Removal of existing and installation of 20 fareboxes on MTA buses;
- Revenue collection system configured as follows:
 - A. One (1) moveable revenue collection vault consisting of vault housing with cashbox receiver, and
 - B. One (1) Stationary vault;
- Installation of revenue collection equipment;
- Data collection and reporting systems, including necessary hardware, software and communications equipment, configured as follows (Proposers may suggest alternate solutions):
- Installation and testing of the data system;
 1. Card stock for printing of transfers and passes;
 2. 75 training manuals;
 3. Documentation for operation and maintenance of the equipment;
 4. Spare parts of the farebox and vaulting equipment total price;
 5. Test equipment consisting of two (2) farebox test sets and any other necessary test equipment;

C. Quality of Work

1. New Materials

All materials and equipment shall be new and not used or rebuilt. The new materials and equipment shall be of recent manufacture and not of such age that their performance would be adversely affected.

2. Modular Construction

To the extent possible, modular construction techniques shall be employed in the manufacture of the equipment. In all cases where more than one unit of equipment shall be provided, e.g., fareboxes, cashboxes, vaults, etc., each unit shall be identical in manufacture and function with the others and all units and their components shall be freely interchangeable.

3. Commercial Standards

The mounting location for the farebox and OCU shall be in compliance with the Americans with Disabilities Act (ADA) of 1990 and shall be subject to MTA approval. The farebox shall be located as far forward as practicable and shall not obstruct traffic in the vestibule, especially common wheelchairs or mobility aids. The farebox shall not encroach upon the required 32- inch width required for the doorway or the route leading to the required clear floor space. A person using a wheelchair shall be able to reach the passenger fare receiving components of the farebox.

D. Delivery Schedule

1. Schedule of Events

The Contractor shall provide MTA with a schedule for the manufacture and availability of the equipment, training programs, and delivery of documentation. The Contractor shall coordinate dates and locations of delivery and installation with MTA. All equipment shall be delivered, installed and all specified services completed in not more than 90 days following the Notice to Proceed.

2. Delivery Time – Custom Features/Special Equipment/Software

The Contractor shall provide MTA a list of all work considered “custom/special”. If the Contractor is requested to provide custom/special features requiring custom work, special equipment and/or software, the Contractor shall indicate its proposed schedule of events indicating initial delivery and anticipated completion of work. At MTA’s discretion, additional time may be approved above and beyond the 90 days indicated above.

E. Work To Be Performed By The Contractor

The Contractor shall perform the following work:

- a) The Contractor shall be responsible for all work and expenses relating to the design, manufacture, and delivery of the equipment to the location specified by MTA.
- b) For those items of equipment to be installed by the Contractor, the Contractor shall provide all hardware and other materials and all personnel and supervision necessary for removal of existing farebox equipment and installation of new farebox equipment in accordance with the schedule proposed by the Contractor and approved by MTA.
- c) The equipment, subsequent to testing, shall be complete in every respect and suitable for revenue service.
- d) All equipment proposed shall be of the latest engineering change level available and shall incorporate suitable modifications for all known operational problems.
- e) The Contractor shall deliver the equipment to the location(s) specified by MTA, which shall be suitable for storage of the equipment until installation. MTA shall assume sole responsibility for the equipment while in storage.
- f) Revenue collection vault shall be installed at the location specified by MTA.
- g) The Contractor shall make available full and competent engineering services to identify and correct all problems associated with the performance of its equipment in a timely manner.
- h) The Contractor shall be responsible for repairs only under the terms and conditions of the warranty provisions indicated herein. Subsequent to the warranty period, any parts, assemblies, and equipment shipped to the Contractor for repairs shall be subject to repair charges in accordance with an agreed upon schedule of prices or quotation for parts and labor.

- i) The Contractor shall provide the services of a qualified representative to meet with MTA to provide consultation and instructions regarding installation of the equipment specified herein. For equipment installation, the Contractor shall use the DC electrical power that currently exists on MTA's buses.
- j) The Contractor shall inspect the AC power available for the data system at the bus garage and, if inadequate, shall inform MTA of the necessary modifications. It shall be the responsibility of MTA to make such modifications relative to type, capacity and quality of power lines.
- k) All work shall be performed and completed in conformance with these specifications and in accordance with the schedule described herein or accepted in writing by MTA.

F. Work to Be Performed By MTA

- a) MTA shall make buses available to the Contractor for installation of the farebox and collection equipment. The Contractor shall propose an installation schedule for MTA approval. MTA shall provide a mechanic for movement of buses as necessary and a supervisor to ensure proper handling of equipment at the garage location where installation tasks are to be performed. MTA shall approve all installation plans and procedures proposed by the Contractor.
- b) MTA shall also be responsible for any necessary repositioning of handrails and/or stanchions on the buses prior to installation of fareboxes by the Contractor.
- c) MTA will provide adequate storage space at the garage location to store the fareboxes and related equipment upon delivery from the Contractor. This storage shall be secure and protected from the weather. MTA will provide personnel and material handling equipment to bring the fareboxes (and other equipment) from such storage places to the designated installation sites.
- d) MTA will be responsible for and provide any and all material handling equipment and personnel required to lift or otherwise manipulate the vaults, collection bins, or their contents during day-to-day revenue transfer operations.
- e) MTA shall provide a specific unobstructed site at the bus garage for the installation of the vaults. These sites shall be level and of suitable construction for such installation. If it is necessary to pour a concrete pad for any vault, MTA will be responsible for this work. The Contractor shall be responsible for providing base dimensions and load requirements.
- f) Where the revenue collection vault is to be mounted through-wall, MTA will provide a properly framed opening and mounting supports based on dimensions furnished by the Contractor. MTA will be responsible for furnishing and installing any supplemental enclosures or canopies to protect the revenue vault and/or personnel engaged in their operation and maintenance.

- g) With respect to the data system installation, MTA shall be responsible for all work involved in the running of any overhead or underground cables or conduits from probe points to the computer. MTA shall provide phone lines for modems where needed. The Contractor shall furnish electrical requirements and all cable to the extent indicated in these specifications.
- h) MTA will provide adequate and secure office space in the building where data system equipment shall be installed to house the computer and printer. This space shall be heated and air-conditioned so that the temperature range is between 65 and 90 degrees F and the relative humidity is between 40 and 80 percent non-condensing. The location shall be provided with 120 volt AC, single phase, 15 ampere electrical service. MTA shall also provide 120 VAC, 15 ampere electrical service in proximity to the agreed-upon location for the data probing system isolation box.
- i) MTA shall perform system acceptance testing on all computer hardware delivered in accordance with these specifications. Such testing will be performed and completed within 30 days of final installation of the equipment.

G. Acceptance Testing

1. General

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

2. Test Plan

All tests shall be done in accordance with a written test plan reflective of the specifications provided herein. The results of any and all testing, whether conducted by the Contractor or MTA, shall be made available to both parties.

3. First Article Testing

Prior to shipment of the equipment, the Contractor shall conduct such tests as may be agreed upon to determine that the equipment has been designed and manufactured as proposed, complies with these specifications, and is free from operational defects and suitable for revenue service.

4. Acceptance Testing

The Contractor shall install all equipment procured under this contract including fareboxes and other on-board equipment, revenue collection equipment, and the data system, and provide technical consultation to MTA staff.

Acceptance testing shall consist of a reliability test that begins when the fare equipment is installed at each location and an accuracy test, as described below. Testing will take place over a period of ninety (90) days. If the equipment performs as specified it will be accepted by MTA. If it fails to perform acceptably the Contractor will be informed and given up to seven (7) days to make corrections or adjustments to the equipment.

5. Reliability Test

The farebox system will be tested for reliability and accuracy. During the ninety (90) day test period, all failures will be recorded. Those failures deemed to be a result of a product defect or

design flaw (not the result of human error, passenger abuse, vandalism, bent or defective media, etc.) will be carefully analyzed. If a fleet defect is declared, the acceptance test will be suspended until the defect is corrected in the entire fleet. A four-week rolling average of Mean Time between Failures (MTBF) will be calculated by dividing the number of failures into total farebox operating days. If MTBF meet the requirements stated in the contract, the reliability test will be concluded. If MTBF is less than the stated requirement, the test will continue until a four-week rolling average that meets or exceeds the requirement is reached.

"Farebox operating days" means total days that the farebox was installed in the bus and available for revenue service, including weekends and holidays, regardless of how many days the bus was actually used.

MTA, at its option, may unilaterally determine that all fareboxes and equipment have passed the reliability test.

6. Accuracy Test

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 \$100.00 each in collected revenue. The cashboxes will be emptied separately using the audit unit and the revenue counted. Meanwhile, accumulated transaction data will be extracted from the farebox using the portable data probe. Accuracy will be judged by comparing revenue, as determined by a physical count, to the revenue indicated on the farebox data registers. Fareboxes placed in bypass will not be counted and adjustments will be made for bogus coins.

A four-week rolling average for accuracy will be computed. If the accuracy is 99% or better, the system will have passed the accuracy test and the test will conclude. As with the reliability test, if the accuracy does not meet the 99% requirement, the test will be continued until the required performance is met.

The Contractor and MTA will meet to ascertain the cause of any failures of the reliability or accuracy tests. MTA is expected to continually monitor all physically counted revenues versus data system reported revenues. Any significant anomalies are to be reported to the Contractor immediately.

7. Final Acceptance

When the acceptance, reliability and accuracy tests are passed and all fareboxes and ancillary equipment are delivered and installed in accordance with MTA's specifications, the system will be accepted by MTA.

H. Warranty

MTA expects that the equipment shall be subject to a comprehensive warranty. MTA will specifically expect that all proposals will include standard warranty information with enhanced and extended warranty options as a part of the proposal.

II. VALIDATING FAREBOX – TECHNICAL DESCRIPTION

1. Function

The farebox shall be a bus mounted, freestanding device used to collect and securely store fares using 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 using human factors, engineering practices and industrial design.

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 except as necessary to process transfers and reduced or other special fares. The farebox shall automatically determine that fare media inserted or presented are genuine and comply with established conditions of use.

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.

2. Features

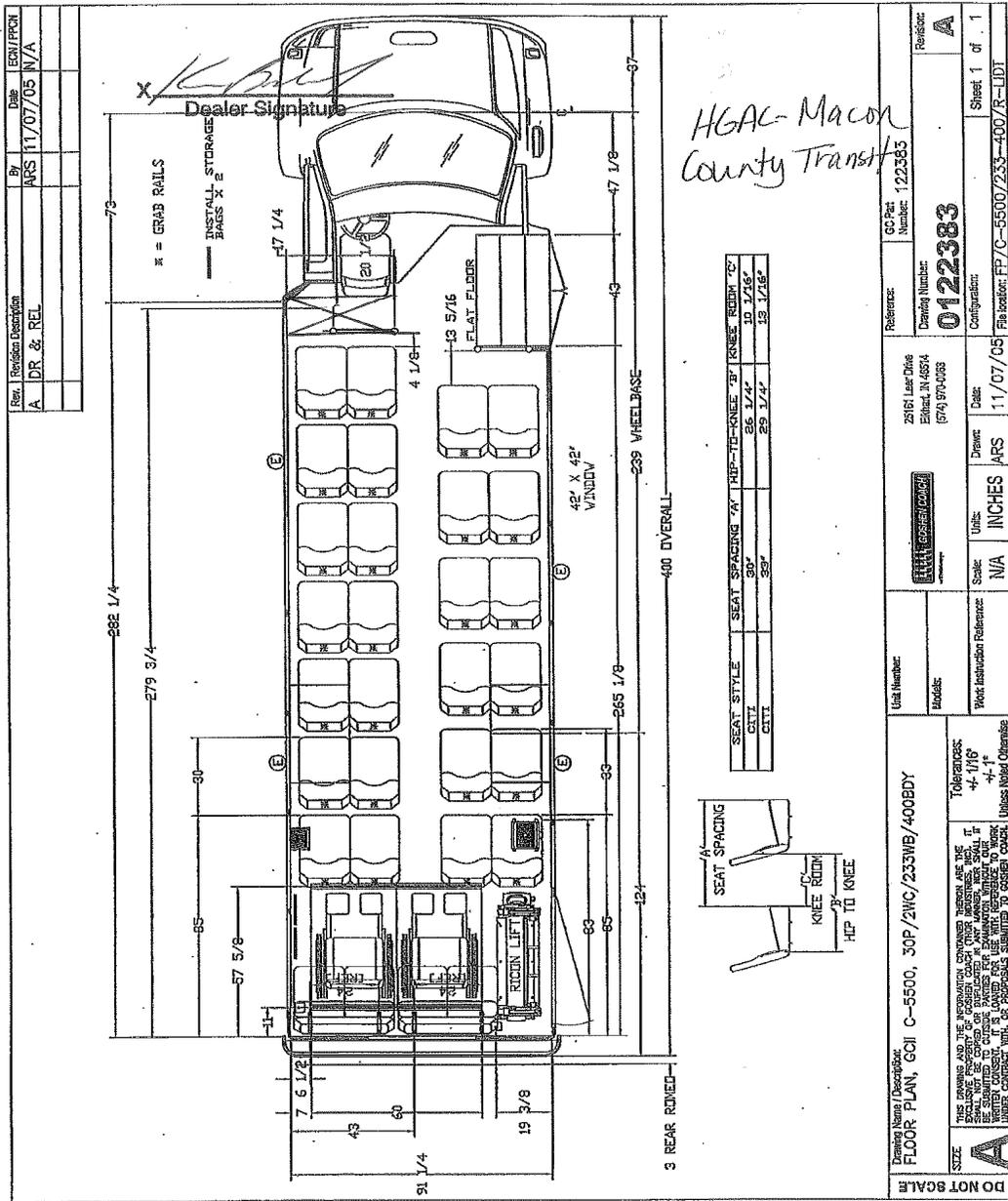
The farebox shall have the following operational features:

- Accept, validate, count, and register fares in the form of U.S. coins, tokens, and paper currency;
- Return those coins and bills that are not valid or acceptable to the system;
- Accept, validate and, if necessary, re-encode magnetic thin card fare documents;
- Print, encode and issue a magnetic transfer, day pass or other agreed-upon document from an internal supply of blank un-encoded stock;
- Print, encode and issue a magnetic transfer card for fare overpayment;
- Permit the recording of various types of fare transactions using driver activated pushbuttons.

3. Location

The farebox shall be installed on the bus near the driver and in proximity to the front door while taking into consideration the issues presented in the item labeled “Positioning” part “A.”, “Scope of Work” under “General Requirements”. It shall be positioned so that an entering passenger may quickly and easily insert or present the required fare using coins, tokens, paper currency or magnetic fare document. This position shall facilitate all required maintenance tasks and permit easy removal of the cashbox. Position shall also be in compliance with ADA standards as stated in “General Requirements”, C, 3.

A schematic displaying the inside specifications of the bus is provided below to assist the Contractor in designing a feasible solution to the problem discussed earlier.



The farebox shall be provided with an operator control unit (OCU) furnished with a keypad and display to permit the driver to operate the farebox. The OCU shall be housed separately from the farebox and electrically connected to it. The OCU shall be mounted on the bus dashboard, a stanchion, or the farebox and positioned to enable the driver to readily view the display and operate the keypad. In normal operation it shall be possible for the driver to operate the fare

collection system without having to view or touch the farebox or fare media. The mounting location for the farebox and OCU shall be subject to MTA approval.

B. Operating Environment

1. External Environment

The farebox shall be able to operate without any degradation in performance under the following 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. It is understood that 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 operational in the presence of the following contaminants: airborne particles, grease, oil, and other contaminants accumulated on coins, tokens, and bills within reasonable limits.

2. Electrical Power

The farebox shall have the following electrical characteristics:

- Power source 12 or 24 VDC nominal (bus battery)
- Operating range 10 to 36 VDC
- Power consumption 180 watts peak, 25 watts typical
- 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).
- Under voltage (0 to 10 VDC)
- Over voltage (36 VDC to 50 VDC)
- Reverse polarity of the input voltage
- Fluctuating voltages between 10 and 50 VDC

The farebox power supply shall include 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. The power supply shall be rendered immune to electrical interference caused by such items as fluorescent light, bus alternators, air conditioning units, radios, etc. Adequate protection against transient surges in the bus power supply shall be incorporated to the extent necessary to prevent damage to electronic components.

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. Sustained farebox operation with voltage levels ranging from 10 to 50 VDC or with reverse polarity 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 EMI or RFI that produces harmful interference with other on-board electronic devices and systems.

C. Accuracy and Acceptance

1. Coins and Currency

The total amount of money registered by each farebox 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 \$100.00. 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.

2. Magnetic Cards – Swipe Reader

Magnetic fare documents swiped through the card reader shall be successfully 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. Magnetic Card Processing Unit (MCPU)

Magnetic fare documents inserted shall be 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.

D. Reliability and Maintainability

1. Reliability

The farebox shall be designed for the highest degree of reliability. It shall be capable of operating a minimum sixty (60) days mean time between failures. 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. If money is exposed due to the cashbox exceeding the capacity specified herein, such occurrence shall 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 Contractor's instructions.

2. Maintainability

Mean time to repair an inoperative farebox shall 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. Modular Construction

Modular construction shall be used 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, weatherproof plugs.

4. Component Removal without Tools

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

E. Coin Processing

1. Coin Slot

The coin slot shall be positioned on the top surface of the farebox and shall allow the rapid gravity insertion of coins and tokens by passengers. It shall be funnel-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. An internal lamp shall be provided to illuminate the coin entry slot. Inserted coins shall be directed to the coin validator.

2. Coin Validator

The coin validator shall be capable of processing and validating coins and tokens. The coin validator shall determine the validity of inserted coins based on their metallic content and shall be capable of distinguishing between ten (10) different valid coins/tokens provided each item has a distinctive metallic signature. The coin validator shall accept, validate, and count the value of pennies (1¢), nickels (5¢), dimes (10¢), quarters (25¢), half-dollar (50¢) and Susan B. Anthony and Sacagawea dollar coins (\$1.00). Up to two (2) sizes of tokens shall also be validated by the coin unit provided that each token metallic signature is readily distinguishable from other coins and tokens. The validator and associated logic shall be solid state, employing no motors or moving parts for the validation process. Coins accepted by the validator shall have their value posted to the logic and displays and immediately be directed to the cashbox.

The coin validator shall be 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.
- 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. Coin Rejection

Coins shall be 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;
- 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. Coin return cup shall be fitted with a transparent spring-loaded door to prevent coins from falling from the cup and an internal lamp to provide illumination to the cup.

4. Coin Bypass

In the event that the coin slot is jammed and/or the validator is inoperative, a means shall be provided 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.

Use of the coin bypass mechanism shall not affect the security of the farebox or the collected revenue. Activation of the coin bypass mechanism shall require deliberate action by the driver. Once the bypass has been activated, it shall not be possible for the driver to reset it from outside the farebox. Resetting the mechanism shall require access to the farebox interior by authorized personnel. The farebox shall note in its memory and retain for data transmission the exact times when the bypass was activated and deactivated.

When the coin bypass is activated, bills and electronic fare documents shall continue to be accepted, in a normal manner. When probed, any farebox which has been placed in bypass since the last time it was probed shall emit a tone that is noticeably different from the normal probe tone to indicate that the farebox is in the by-pass mode and requires remedial action. This state will be logged in the data system and include driver identification and will be date and time stamped.

F. Bill Acceptor

The farebox shall be provided with a bill acceptance module 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 be positioned near the coin slot and 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. The paper currency shall be inserted approximately one-quarter inch (1/4") before the bill transport becomes operational and advances the bill to the validator.

The bill transport shall have 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 acceptor shall have indicator lights and shall show, by a green light that the acceptor is ready to accept bills or alternatively, by means of a red light, that it is not ready or able to accept bills.

1. Currency Acceptance

The bill acceptor shall accept an inserted bill in any one of four orientations – face up, face down, either end first. The acceptor logic shall examine the inserted bill and determine its validity and denomination. Invalid currency and denominations that have not been programmed for acceptance by the farebox shall be rejected.

The acceptor shall be capable of accepting and validating the following U.S banknotes:

- One-dollar bills (\$1) (old and new style);
- Two-dollar bills (\$2) (old and new style);
- 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 shall process and accurately register:

- Bills not uniformly flat or in new condition;
- Bills that is damp but not saturated.
- Processing time shall be 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.

2. Currency Rejection

Any of the above bills may be programmed by the system to be rejected for policy reasons. All bogus bills, foreign currency, and photocopies of valid currency shall be rejected. The farebox shall 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 shall reverse and the item shall be returned to the passenger via the currency slot in the bill bezel.

3. Bill Transport

The bill validator shall feed an accepted bill into a bill transport, which shall progress the bill into the cashbox. The bill transport shall employ a pulley and belt mechanism to positively engage an unfolded bill, irrespective of condition. No force shall be required to cause the bill transport to start. Solid-state devices shall be employed to start the bill transport. The transport shall operate until the bill has been deposited into the cashbox.

4. Manual Bill Override

Upon examining a rejected bill and determining that it is genuine, the bus operator shall have 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. One and only one bill shall be accepted 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 data system. MTA 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.

5. Accuracy

Valid bills shall be accepted at a rate of not less than 95% on first insertion and 99% on second insertion.

G. Magnetic Card Processing Unit

1. Functional Description

The farebox shall be provided with an integral magnetic card processing unit (MCPU) capable of processing a magnetically striped, thermally coated document. The MCU shall be 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:
 1. If the card is valid, encode, verify, and print on it as appropriate, and return it to the passenger;
 2. 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 MCU shall be 2-1/8 inches wide by 3-3/8 inches long and 0.007 inches to 0.010 inches thick. Documents to be issued shall be made of paper stock 0.007 inch thick.

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.

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

2. Magnetic Fare Document Processing Requirements

The magnetic stripe of the magnetic fare documents shall be of the high coercivity type (typically 2700 Oersteds) and shall be placed in ISO tracks 2 and/or 3. Data on track 2 shall never be exposed to a write head and shall therefore be fixed. Track 3 shall contain variable data such as current value, date, time, bus number, route of last use, next available print location, etc. Transfers which have no fixed track shall have only variable data relevant to transfer issue and use.

All data on both the fixed and variable tracks shall be encoded at a minimum density of 120 bits per inch. All data encoded by the MCPU shall be 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. Printing on a Document

The MCPU shall have 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. It shall be possible to store special symbols for use as required.

The MCPU shall be capable of printing 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.

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

Blank document stock shall have no value until printed and encoded by the MCPU. Stock shall be supplied in a cassette with a capacity of at least 700 individually stacked die-cut cards. It shall be possible to add document stock before the existing stock is exhausted.

Printing shall be on the magnetic stripe side of the document. Printing shall be of the thermal type, made up of dots with a resolution of not less than 190 dots per inch. The MCPU shall be capable of printing in a portrait 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 shall be capable of printing text in a variety of fonts and sizes in either landscape or portrait orientation. The MCPU shall be capable of printing graphics of any size except as limited by the printing area on the card. It shall be possible to reserve certain areas on the document for such variable and/or conditional information as may be required and agreed upon.

4. Transfer Issuance

Upon manual or automatic command the MCPU shall be able to issue a paper transfer which shall be encoded with the conditions of use and expiration on the magnetic track and printed in human readable form. The transfer shall be printed on the die cut thermal stock contained within the MCPU.

5. Transfer Acceptance

The MCPU shall accept previously issued transfers from other similar fareboxes and determine their validity and authorized use. It shall accept the transfer, read it to determine validity, route of issue, and other agreed-upon restrictions of use, print on and re-encode the transfer as appropriate, register the completed transaction in memory, and return the transfer. The farebox shall maintain separate "Transfers Issued" and "Transfers Received" registers in memory and transmit the information collected to the data system during probing.

The MCPU shall be capable of being programmed to:

- Process transfers with or without driver intervention. For transfers processed without driver intervention, downloadable acceptance parameters shall include 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.

6. Change Cards

The MCPU, 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. It is understood that change cards are intended for a maximum of six (6) uses unless plastic stock is used.

7. MCPU Card Stock Replenishment

The MCPU shall have an internal removable cassette which shall hold not less than 700 cards 0.007 inches thick. The cassette shall be removable to enable additional cards to be inserted or another full cassette inserted in its place.

The MCPU shall have sensors to indicate when the card stock is low, with approximately 100 cards remaining. The indications shall be visual on the driver's display.

A viewing window shall be incorporated into the farebox design to permit observation of the vertical stack of card stock in the MCPU. This window shall make it possible to determine the approximate amount of stock in the MCPU without having to open any lids or covers.

8. MCPU Processing Time

The MCPU shall have the following maximum processing times:

- Read Only 1.0 seconds
- Read, Encode and Verify 1.3 seconds
- Read, Encode, Verify and Print 1.6 seconds
- Issue, Encode, Verify and Print 2.0 seconds

H. Magnetic Swipe Card Reader

1. General

The farebox shall be provided with a swipe card reader to process read-only magnetic documents such as passes which have been previously encoded with data such as serial number, card type, validity dates, etc. The card reader shall be integral to and flush with the top surface of the farebox near the coin and currency slots.

The card reader shall permit passengers to easily and rapidly swipe cards created with TRIM and TRACK2 technology through a slot. The reader shall have its slot oriented so that cards shall be swiped from right to left (from the passenger's viewpoint), in the general direction of passenger boarding. A guide way shall be provided to direct the card into the slot for swiping. A polished stainless steel plate shall be provided at the bottom of this guide way to resist abrasion and prevent the card from snagging on any surface irregularities as it is swiped. The guide way shall be illuminated for ease of use at night. The maximum speed at which a card can be swiped and still be accurately read shall be at least 70 inches per second. The read mechanism shall be spring loaded and shall accommodate passes with a minimum thickness of .006 inch and a maximum thickness of .030 inch.

2. Processing Time

The swipe card reader shall allow 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.

I. Electronic Fare Document Operations

The following requirements apply to all electronic fare documents.

1. Processing Requirements

Upon insertion in or presentation to the appropriate fare processing module, electronic fare documents shall be 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?

2. Stored Ride/Stored Value Card Processing

a. General

Stored value and stored ride cards shall be pre-encoded for a specific amount or number of rides and distributed off the bus. When a stored value or stored ride card is inserted or presented, the farebox shall 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, provision shall be made for "split payment" transactions in which a combination of cash and electronic media may be used to pay the fare.

b. Operation

When a stored value or stored ride card is processed, the farebox shall:

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

If the card passes all the preceding tests, the farebox shall deduct the appropriate value or number of rides, re-encode the card, sound the "successful transaction" tone, register the fare in memory, and display the amount deducted and remaining on both the driver and passenger displays.

In the event a reduced fare pass is used, an appropriate message such as "STUDENT," "SENIOR," etc., shall appear on the driver's information display once the pass is validated. It shall be possible to restrict use of a student pass to weekdays.

The farebox shall record 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.

c. Embedded Transfers

It shall be possible to cause an "embedded transfer" to be encoded on a stored magnetic value card. An embedded transfer shall permit the stored value card to act as a transfer without issuance of a separate document.

3. Period Pass Processing

a. General

Two types of period (limited duration) passes shall be supported:

- fixed period passes
- 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 data 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.

b. Conditional Use Passes

A subset of passes shall be conditional use passes such as "off-peak only," "peak only," and "anytime" passes. Peak hours shall be definable by the MTA 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 these time windows, while "peak only" passes shall be valid only during the time windows. "Anytime" passes shall be valid at all times.

c. Operation

When a pass is processed, the farebox shall:

- Determine that the card has been properly read. If a misread is detected, the driver's information display shall indicate a misread and a distinctive tone shall sound.
- Check the pass's validity period. If the pass has not yet become valid, the display shall indicate that it is invalid. If the expiration date has passed, the display shall indicate it is expired.
- Check 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 a passback situation.
- Check 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 a bad pass. If the card passes all the preceding

tests, the farebox shall sound a "pass accepted" tone, register the fare in memory, and display 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 "STUDENT," "SENIOR," etc., shall appear on the driver's information display once the pass is validated. It shall be possible to restrict use of a student pass to weekdays.

The farebox shall record in memory the quantity of each pass type processed, e.g., full, senior, student, etc. Acceptance of magnetic stripe cards shall be subject to control by the driver's keypad and may require the insertion of money in the farebox, as in the case of reduced fare passes for seniors or students.

Normally the passes shall be 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 shall not alter any of the encoded information on the pass.

4. Passback Check

The farebox shall have the ability to check 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 similar message and the pass shall be rejected. The passback list shall have a capacity of at least 50 pass numbers.

5. Bad Number List

The farebox logic shall have 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 2,500 individual cards.

6. Adding Value to a Card

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

J. Passenger Indications

1. Passenger Display

The farebox shall be provided with a passenger display mounted on top of the farebox in proximity to the coin and bill slots. The display shall be a backlit LCD and shall be easily viewable by a passenger paying a fare.

When the farebox is in "ready" mode the passenger display shall cycle through various instructional messages. These messages shall automatically adapt depending on the operational status of the farebox; for example, if the coin validator or bill validator is out of service.

When a cash transaction is initiated, the display shall show the amount deposited and the amount of the fare. When a transaction involving a magnetic fare document is initiated, the display shall show relevant information, e.g., the amount of rides/value deducted and remaining when a stored ride/value card is used. In the event a magnetic document transaction fails the display shall show the reason for failure, e.g., INVALID, EXPIRED, BAD READ, etc.

The passenger display shall be equipped with two buttons, one on either side of the display. Each button shall be a minimum of one-quarter inch wide by one-half inch high. The buttons shall be of the sealed membrane type with tactile feedback. Different "labels" for the buttons shall be shown on the passenger display depending on the task to be performed.

2. Audio Signals

The farebox shall be equipped 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.

K. Operator Control Unit

1. General

The farebox shall be furnished 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. The OCU shall be provided with appropriate hardware to permit it 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. The installed position shall not interfere with any bus controls, block any bus indicators, or create a safety hazard. The OCU mounting shall be designed so that it may be adjusted by each operator to 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.

The OCU shall be connected to and communicate with the farebox via cable.

2. Driver's Display

The OCU shall be provided with a backlit liquid crystal display (LCD). It shall be possible to show text in a variety of fonts, sizes, and orientations. Display contrast shall be adjustable and backlighting shall be capable of being turned on or off via the driver keypad. The display shall be of sufficient brightness to be visible in all forms of ambient lighting within the bus. The display shall be protected by a panel of clear plastic with a matte finish to reduce glare.

3. Display Indication

The display shall be 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 shall be reserved for information pertaining to transaction amount, 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 shall automatically reset to "\$0.00" fifteen (15) seconds after the last coin has been inserted. Any numeric value indicated on the display when this occurs shall be added to the "unclassified revenue" data register. It shall be possible to delay resetting by pushing a designated "hold" button.

4. OCU Driver Pushbuttons

Different "labels" for the function keys shall be shown on the driver's display depending on the task to be performed. All driver pushbuttons shall provide tactile and audio feedback and be sealed against the intrusion of liquids and other foreign material.

The OCU shall enable 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 OCU shall be capable of being programmed to:

- register a specific preset value \$0.01 to at least \$99.99;
- increment a zero-value tally counter; or
- be disabled (nonfunctional).

The fare values assigned to each numeric or function key shall be individually programmable; that is, for each fare set activated by the driver one or more of the buttons may have a different value assigned. Each time a numeric "keypad button" is pressed, the driver's information display shall indicate the key number pressed and show the value assigned to that button.

When the farebox is in "ready" mode, the function keys can be programmed for the most commonly used reduced-fare presets and farebox operations, with appropriate indications shown on the OCU display such as CHILD, SENIOR, or XFER ISSUE. It shall be possible to reach secondary screens by means of a single key press.

5. OCU Operation

Pushbuttons used to register a cash fare may be pressed prior to, during, or after the insertion of money in the farebox to obtain the proper count. Pushbutton keys used as tally counters shall require no money to be inserted to obtain a count. Each time a pushbutton is depressed in the proper manner, a tone shall sound, indicating that a count has been made in the corresponding farebox data register. Individual pushbuttons may also be disabled, in which case their use shall have no effect on the farebox.

It shall be possible to use the OCU display and keypad for tasks such as driver logon and logoff, creation of "route/run" records, and review of the contents of the farebox summary data registers. It shall also be possible to use the display and keypad for various tasks in connection with farebox maintenance. Prompts and menus shall be shown on the display to aid the driver or maintenance technician in performing such tasks. At a minimum, the OCU shall provide 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.

L. Farebox Logic

The farebox shall be provided 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 a central data system.

1. Fare Registration

Upon determining that an inserted item is a valid fare medium, the coin validator, bill transport, card reader and MCPU, shall send appropriate signals to the farebox's electronic logic. As each transaction is completed, it shall advance electronic data registers in the farebox that 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 shall be used to record the accumulated value of all cash displayed on the driver's digital display but not counted toward a completed transaction.

The farebox shall have the ability to identify and record the use of at least forty-eight (48) non-cash revenue items. Each time a ticket, token or pass 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 shall be available for review via the OCU display. All data, summary and otherwise, shall be uploaded to the data system computer during data probing for use in the preparation of management reports. The farebox shall be 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.

2. Fare Table

The farebox shall have the ability to have at least ten (10) fare sets programmed into its electronic logic. All the fare sets taken together shall constitute the fare table. 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. Alternatively, the driver may accept a reduced fare by use of the OCU keypad, as described in these specifications.

Within a given fare set it shall be possible to specify different fares for the various passenger categories for each type of fare medium in use. It shall be possible to establish different fare sets for different classes of service, such as local, express, shuttle, holiday or promotional fares, etc. It shall be possible for the driver 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.

The fare table shall be stored in the non-volatile memory of the farebox and shall be programmable via the keypad using appropriate devices and authorization codes or via the data 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. In normal circumstances the fare table shall be maintained via the data system and automatically downloaded to the farebox whenever the farebox is probed.

3. Farebox Diagnostic Reporting

The farebox and its electronic logic shall be designed to provide trouble reporting and self testing and diagnosis.

- A. 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. The automatic sequencing shall be initiated by pressing the appropriate sequence of keys on the OCU or, if the OCU is unavailable, the 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.
- B. 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 data system on probing for use in generating management reports.

- C. 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.
- D. 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 data 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.
- E. 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.
- F. 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. These counts shall be used for audit purposes and as an indicator of the need for periodic maintenance.

4. Route/Run Segmenter

The farebox shall be equipped with a route/run segmenter. The route/run segmenter shall permit 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 at least 250 such records.

The information stored in the segmenter shall not be accessible through the information display but shall only be available for transmission to the data system computer, as later described in these specifications. Data shall not be available to the driver for editing in any fashion.

To create a primary route/run record: The driver shall 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 shall be used for the new route/run record.

To create a secondary route/run record: The driver shall press specific buttons in a prescribed sequence. The creation of this record shall be confirmed by the audio signal.

In general, route/run records shall be 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 shall also be 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 shall contain a real time clock which shall store 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.

5. Operator Logon/Logoff

Prior to the start of service, the farebox shall be disabled until the driver has logged on 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 and no magnetic tickets shall be read shall be processed. However, the OCU keypad and display shall be functional.

To log on, the driver shall press 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, direction, 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
- A programmable amount of time elapses without activity
- The farebox is probed
- The internal power switch is turned off.

M. External Interfaces

1. Bus Fare Collection System Interface

The bus fare collection system shall have the ability to communicate with compatible external devices for the purpose of exchanging data and in support of integrated operational functionality.

To the extent practical, the external communication architecture shall be designed in conformance with open systems standards and shall be free of non-standard, proprietary technology. The farebox and OCU shall be provided with an asynchronous serial communications port compliant with the SAE J-1708 and J-1587 standards in addition to communications ports utilized by Contractor provided devices. The J-1708 connector shall have 6 positions as follows: P1 = Ground, P2 = N/C, P3 = J-1708A (+) -2, P4 = +12VDC Unswitched, P5 = +12VDC Switched, P6 = J1708B (-) -2.

2. Data System Interface

The data system shall have the ability to interface with the following MTA-provided systems:

- Local area network (LAN, WLAN) via Ethernet
- Wide area network (WAN) via TCP/IP

N. Farebox Construction

Mechanical Details

The farebox and its mounting fixtures shall be designed and built to discourage vandalism and theft. Finishes and locking mechanisms shall be corrosion and moisture resistant. 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.

1. Top Cover. A top cover made of durable materials, suitable for MTA's operating environment 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.

2. Upper Portion of Farebox. The upper portion of the farebox shall be made of durable materials, suitable for MTA's operating environment. 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 apertures to permit retrieval of returned coins and the viewing of magnetic fare document stock.

3. Lower Portion of Farebox. The remainder of the farebox housing shall be made of durable materials, suitable for MTA's operating environment. The material shall be reinforced for rigidity. The compartment housing the cashbox shall have a door attached by a full length hinge and secured by a four point locking bar, actuated by a high security lock mounted adjacent to the door. The door shall have an aperture in the front through which a portion of the cashbox protrudes to indicate that the cashbox is present and ready to receive revenue. 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.

4. 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 durable material, suitably reinforced 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. In compliance with ADA regulations, the completed assembly shall measure not more than forty-one inches (41") high, or thirty-six inches (36") high if the short model farebox is purchased, as measured from the bus floor, and not more than ten (10") inches in cross section.

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 pre-tested under power for a minimum of 72 hours prior to final inspection within the farebox. All segments of the electronic displays shall be tested for a minimum of 72 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 employed 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 that may be

supplied with this procurement. 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 be designed to give the counting of inserted coins or bills precedence over any other function. 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. The farebox circuits shall be designed to draw minimum power from the bus battery. The farebox shall have three power levels:
 - "Process" mode – when a fare transaction is in progress, the power draw shall not exceed 180 watts peak, 25 watts typical.
 - "Ready" mode – the farebox is logged on and ready to collect revenue. During "ready" mode the farebox passenger display shall cycle through a series of instructional messages, the lights illuminating the various fare entry bezels shall be on, and the backlighting on the driver's display shall be extinguished. "Ready" mode shall be activated after a predetermined time, e.g., 3 minutes after the last transaction or when the farebox is probed. Power draw in "ready" mode shall not exceed 29W.
 - "Standby" mode – the farebox is logged off; all lights are extinguished. Power draw in "standby" mode shall not exceed 12W. The farebox circuitry shall include at least two open data ports for subsequent installation of communications links with other on-board devices. One of these ports shall comply with the SAE J1708 standard.

O. Data Port

The farebox shall be provided with a means of communication to permit high-speed communication between the farebox and the data system during routine servicing. Such communication shall include the uploading of farebox transaction and operating data to the system computer and the downloading of the fare table and other configuration parameters from the data system computer to the farebox. The communication device shall be an integral part of the farebox and shall be positioned to permit easy interface by an operator. The port shall be protected against the entry of dirt and water. A non-contact means of transmitting data, e.g., infrared light shall be employed. All fareboxes provided shall be equipped with such a communication device, tested and ready for use.

P. Cashbox

1. General

The cashbox shall have two separate compartments, one for coins/tokens and one for bills. The cashbox 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. It shall be provided with a handle to permit carrying by a person with a gloved hand. Removal of the cashbox from the farebox shall require opening of the cashbox access door by activation of the electronic lock described later in these specifications.

2. Construction

The cashbox shall be made of a durable material, suitable for MTA's operating environment, 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.

The cashbox shall be 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 shall function in a dependable manner in the transit environment.

The mechanism and operation of the cashbox shall be positive and at no time during the collection or transfer of revenue expose the interior of the cashbox or its contents. The cashbox shall fit into the farebox in a unique position and shall be placed into the ready position to collect revenue by a single continuous motion.

The farebox shall remain inoperable until the cashbox is properly inserted and ready to accept revenue and the cashbox access door is closed and locked. The cashbox shall not have lids, covers or other elements that may be detached from the cashbox. The operation of the cashbox shall be such that it shall be locked and sealed unless it is in a farebox or receiver for revenue transfer. There shall be no unauthorized means of gaining entry to the cashbox or other than physical destruction of the cashbox, which shall be immediately noticeable through visual inspection.

The locks and keys used on the cashbox shall be of the high security type as defined in this specification. 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 shall be positive and smooth in operation. Internal locking mechanisms shall be constructed 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 shall afford gravity discharge of the contents during revenue transfer, while maintaining separation of coins and bills. There shall be 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 shall be inscribed on the cashbox in such a way that it shall be visible when the cashbox is in the farebox and the access door is closed and locked.

Q. Security

The highest degree of security shall be employed in the design and manufacture of the farebox and the cashbox. No seams and/or openings shall be permitted by which deposited money may be removed in an unauthorized manner.

1. Locks and Keys

All locks and keys used on the farebox shall be of the high security type, defined as follows:

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. Making an unauthorized duplicate of the key for a high security lock by means of impressions or similar technique presents a high degree of difficulty.

Security keys shall be registered by the Contractor to MTA. Only authorized and registered MTA personnel shall have the ability to order new or additional keys from the Contractor.

The lock and key used for the cashbox shall be of the rare earth magnetic type, MIWA or 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 access to the farebox shall be a high security pin and tumbler lock.

2. 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 "fishing" of the cashbox upon removal of the coin or bill module from the farebox enclosure.

3. Cashbox Identification

The farebox shall be fitted with a device to automatically read a four (4) digit serial identification number on the inserted cashbox. 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 data system shall have the capability of inventorying the numbers of all cashboxes in the system.

4. Electronic Lock – Cashbox Access Door

Each farebox shall have a cashbox access door built into its lower portion that shall protect and conceal the cashbox inside. 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 door shall be fitted with an internal electronic locking device that shall permit the door to open upon successful transmission of data or receipt of a proper security signal from other devices.

The farebox logic shall have the ability to retain a specific five digit security code number. This number shall be modifiable at any time by downloading from the data system under authorized

conditions. It shall be possible to change the security code in the farebox by means of the data system or by a portable electronic key.

When a data system probe is interfaced with the farebox, a coded number shall be transmitted to the farebox. If this number exactly matches the number previously stored in the farebox, the farebox shall release the locking pins on the door. The door shall then open, permitting the cashbox to be removed.

The data system shall be designed so that the security code may be entered using the data system. After proper entry of the security code, the data system shall display a menu with the options "LOCKS ENABLED" or "LOCKS DISABLED." If "LOCKS ENABLED" is selected, the cashbox access door shall unlock when the farebox is probed and data is extracted. If "LOCKS DISABLED" is selected, the farebox and the data computer shall exchange data, but the cashbox door shall not unlock. Closing the cashbox access door and holding it in the closed position for approximately one-half (0.5) second shall cause the locking mechanism to engage the door pins and lock the door. If the door is slammed, with rebound, the mechanism shall not engage.

5. Portable Electronic Key

Two (2) portable electronic keys shall be provided to enable MTA 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 data system.

The battery that powers the portable electronic key shall be of an alkaline type. To conserve battery life, the probe shall be fitted with a momentary contact switch that shall be pressed to activate the portable key. An audio transducer shall alert the operator to a "low battery" condition. The electronics module shall also contain 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 water-resistant construction. It shall be sufficiently protected to withstand use in an outdoor service lane in all types of weather.

R. Magnetic Document Stock

The Contractor shall supply pre-printed and pre-encoded magnetic fare document stock conforming to the specifications below and in the quantities indicated for all documents to be printed and/or processed in the MCPU.

1. Size and Type

Ticket stock intended for use in the MCPU shall be:

- Die-cut to credit card size (2.125" by 3.375") and shall have dimensions as defined in ANSI/ISO standard 7813-1987 for identification cards.
- Two types of document material shall be provided: 1) polyester stock for use in long-duration items such as passes, ID cards, etc.; and 2) paper stock for short-duration items such as transfers. Unless otherwise specified, document stock shall be white.
- Magnetic material shall be applied either by coating, extruding, or tape transfer processes. It shall be impossible to separate the stripe from the document stock intentionally without visually degrading the document surface. Operation in the

equipment shall not cause the stripe ends to lift, nor shall any portion of the stripe separate from the document stock during normal handling or use.

- Abrasiveness of the magnetic material shall not cause magnetic head wear at a rate greater than that caused by standard credit card tape.

2. Flatness

Ticket stock shall be flat and not have any curl in the "X" or "Y," or diagonal planes. Variation from true level shall be less than 1/16th of an inch on any corner of a single card, as measured on a flat surface, at 65 degrees F. and 80% RH.

3. Resistance to Moisture

Ticket stock provided shall be dimensionally stable in high ambient moisture conditions. The ticket material or coating shall be such as to prevent one ticket from sticking to another while in the cassette or experiencing curl due to moisture.

4. Static Printing

Transfer stock shall be printed on one side with information relating to direction of insertion and identifying information as required by MTA. The Contractor shall submit its proposed artwork to MTA for approval. Artwork shall be for single color printing and comply with MTA's requirements for color, ink coverage, borders, and the like.

5. Packing

Transfer stock shall be packed in boxes with not less than 1,500 cards per box. Boxes shall be clearly marked as to contents and date and source of manufacture. All ticket stock shall be printed with an identifying number.

III. REVENUE COLLECTION SYSTEM

A. General

Revenue deposited into the cashbox in each farebox shall be transferred to a vault of the mobile bin type, consisting of the following components:

1. A cashbox receiver, which shall accept a cashbox and, by means of a mechanism operated in a secure manner, open the cashbox and discharge its contents (coins and bills) into separate compartments in the mobile bin located below the receiver.
2. The vault structure, which shall contain the receiver (above) and one backup bin. It shall be permanently installed at a MTA-specified location convenient to the vehicle service lane and serve as a secure weather resistant housing for the receiver and backup bin.
3. A backup bin, which shall accept separated coins and bills from the receiver and store them in separate compartments. The backup bin shall be removable from the vault structure only in a closed and locked condition. It shall be possible to transport the backup bin to the counting room or bank using MTA-supplied means where the bins' 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 MTA may choose to employ.

B. Environmental Conditions

The Contractor shall install the garage equipment used for revenue handling, comprising the cashbox receiver, vault housing, and backup bin plus the data transmission probes and cables used to retrieve data from the fareboxes. The garage equipment shall operate 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

C. Cashbox Receiver

There shall be a mechanism atop the vault called a receiver into which the cashbox is inserted in a unique correct position for revenue transfer. The receiver shall be provided with a heavy interlocked door and designed so that the cashbox is positively guided in and out. Once the door is closed and locked, an internal mechanism operated by a crank shall open the cashbox and securely transfer the contents into the dual compartments in the vault below. The receiver door shall remain 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 basic revenue transfer process shall be manual in operation, requiring no electrical devices or components. In the event of power and/or battery failure, it shall be possible to transfer revenue in a secure manner.

The receiver shall function in a secure and efficient manner (optimally revenue transfer process shall take 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/vault system shall retain its security when a jam occurs except for access by authorized personnel. Appropriate maintenance access openings, secured by a high-security locking system, shall be provided. The mobile bin shall be provided with a high security locking system to assure that when it is removed from the vault all revenue input mechanisms are closed and locked

All cashbox receivers shall be of the same dimensions and shall accept all cashboxes provided to MTA by the Contractor.

1. Capacity

The capacity of the collection bin shall be adequate to hold a total of approximately \$50,000 in "street" money, with a coin compartment capacity of not less than \$20,000 and a bill compartment capable of holding not less than 30,000 bills. A means shall be provided that

prevents additional cashboxes from being emptied into a specific vault receiver once the vault enters a "Full" condition. The parameters for determining when the vault is full shall be software settable through the Garage Data System.

D. Backup Bins

1. Construction.

The backup bin shall be configured the same as the cashbox receiver.

2. Capacity

The capacity of the backup collection bin shall be adequate to hold a total of approximately \$20,000 in "street" money, with a coin compartment capacity of not less than \$10,000 and a bill compartment capable of holding not less than 10,000 bills. A means shall be provided that prevents additional cashboxes from being emptied into a specific vault receiver once the vault enters a "Full" condition. The parameters for determining when the vault is full shall be software settable through the Garage Data System.

3. Security

Revenue transfer from the cashbox to the mobile bin shall only begin when all of the following requirements are met:

- a. The bin is in position;
- b. The bin is properly sealed and locked within the vault enclosure;
- c. The bin's cash inlet doors are fully open and ready to accept revenue; and
- d. The cashbox has been properly inserted into the cashbox receiver and the receiver door is locked closed.

Once revenue transfer has started, a full transfer cycle shall be completed before the cashbox can be removed.

When a mobile bin is being placed in the vault, the vaults enclosure doors shall 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 shall be prevented. The bin shall be removable from its enclosure only after all vault openings are securely closed.

When the mobile bin is inserted into the vault, it shall be locked into place and shall be removable only in an authorized manner; the key(s) used for this purpose will be different from any others used in the revenue collection process, and shall be of the high security type, as previously defined.

E. Vault Housing

The receiver, its enclosure, and the vault structure shall be solidly built of substantial materials to ensure maximum security.

The revenue collection vault structure shall be constructed of heavy steel plate, welded and ground to prevent access to the vault other than through authorized apertures. The interior of the vault shall have durable guide rails/plates to guide and position the mobile bin upon insertion or removal. Holes in the base of the vault shall be provided to permit the vault to be

permanently attached to a concrete pad or floor by a minimum of four anchor bolts; when the enclosure doors of the vault are closed, the bolt heads shall not be accessible.

The vault shall be fitted with mechanical interlocks to sense the presence of a properly seated and open mobile bin. If the interlocks are not satisfied, the cashbox receiver shall not accept or process a cashbox.

F. Construction and Finishes

All parts of the vault shall be made of non-corroding or plated materials or, to the extent cold rolled steel is used, shall have been cleaned, prepared, and painted with weather resistant enamel. The front surface, door and interior of the receiver shall be made of stainless steel for corrosion protection and wear. All doors on the vault and receiver shall be structurally rigid with heavy duty hinges. All locks used on the vault shall be of the high security type.

G. Installation

The Contractor shall provide all materials and labor required for proper installation of the revenue collection system. MTA shall be responsible for providing a smooth level surface on which to mount the vault.

IV. DATA COLLECTION AND REPORTING SYSTEM

A. General

The Contractor shall furnish and install a data collection and reporting system (DCRS) at MTA designated within the confines of the bus garage. The DCRS shall communicate with the fareboxes to extract transaction and event data and download operating parameters and related information. The DCRS shall communicate with the vault to extract cashbox identification from cashboxes inserted in the receiver. The DCRS shall be complete and fully functional, with all necessary items of hardware and software installed and tested, and shall be furnished with such software licenses as may be required. The DCRS shall provide one data probe linked to the database server identified in section C. The data system shall be capable of generating comprehensive management reports for use by MTA.

B. Data Probe and Cabling

1. Data Probe Cable

The data cable shall be custom made with three (3) twisted wire pairs, a shield, and a heavy polyurethane jacket flexible at low temperatures and resistant to salt, moisture, abrasion and fuel. The cable length shall be at least twenty-five (25) feet. The cable shall be supported in the center by a retractor mechanism designed to hold the cable out of the way when not in use. The retractor may be attached to a supporting pole or to an existing structure. A lockable box shall be provided to hold the data probe when not in use. The Contractor shall furnish and install all hardware required.

2. Junction Box

Each data probe cable shall terminate in a junction box containing one or more connectors for the data probe cable(s) and a terminal strip for a cable connecting the junction box to the central isolation box. Junction boxes may be mounted on the supporting pole or to an existing structure, as appropriate.

3. Supporting Poles

Data probe supporting poles and all other equipment shall be properly grounded for lightning protection through existing electrical outlets. The data probe printed circuit board and isolation boxes shall have transient protection circuits.

4. Interconnection Cable

Each data probe junction box shall be connected to a central isolation box by standard cable to be installed by the Contractor. Both ends of the cable shall attach to screw terminals. Maximum cable length shall not exceed 1500 feet.

5. Central Isolation Box

The data probe subsystem shall include an isolation box designed to protect the data computer and its operator from a near-hit by lightning. The isolation box shall contain a separate opto-isolating printed circuit board for each data probe powered from a common power supply. Terminal strips shall be provided for connection to each of the data probes. The isolation box shall typically be mounted on a wall within 10 feet of the data computer, where its case can be properly grounded. Cables shall connect the isolation box to the data computer. The isolation box shall have its own 110 VAC grounded power cord.

C. Computer Equipment

Computer Requirements

Enhanced Data System – Application/Database Server

- Server of the recommended configuration including but not limited to the following:
- Hot-swappable RAID (5) preferable configured SCSI hard drives (146 GB)
- RAID controller
- 8X DVD ROM drive
- All necessary licensing assigned to MTA
- A minimum of 3-years on-site support (with ownership transferred to MTA)
- 100/1000 NIC
- Redundant Power Supply
- Windows XP or Vista Server operating system

All equipment shall be delivered fully configured, with the hard drive formatted and all software installed and ready for use. The system shall boot from the hard disk upon being switched on and shall have been thoroughly tested prior to delivery.

Operation of the computer to generate data system reports shall not prevent probing of the fareboxes. The hard disk drive shall be capable of storing all of the data from 100 fareboxes with maximum route/run records. As new farebox records are added, the oldest records on the disk drive shall be automatically deleted. MTA shall be able to specify how many days of detailed data and months of summary data shall be saved.

The data system software shall be written in a standard, commonly available computer language not proprietary to this application. All communications shall be accomplished using standard networking protocols and hardware.

Workstation connectivity to the Application/Database Server

- Usage of the Fare Collection System application (including configurable security levels allowing full functional configuration ability and reporting) shall be accessible from existing Windows XP desktop and laptop workstations within the MTA intranet via a web-based (Internet Explorer) interface and/or a client/server type configuration which is compatible with all other applications used by MTA (application compatibility testing/acceptance required).

The vendor will train MTA IT personnel to configure Fare Collection System access on MTA workstations.

D. System Operation

The data collection and reporting system shall be configured in the following manner:

1. Farebox Data Probing

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 an audible sound. The transmitted data shall be immediately buffered in the data computer where it shall be checked for validity. The master list totals from the farebox shall be added to the cumulative registers within the data computer.

2. Computer Operations

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 data system shall then be left for automatic operation. The password used to get access to the application menu shall be changeable by means of a higher level password.

The system shall have the capability 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. It shall be possible to use the data computer to change the fare tables in all fareboxes probed at the garage. These changes shall include 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 MTA's discretion, changes to the fare tables and farebox clock shall be downloaded to each farebox automatically during routine probing. All operator entries shall go into a transaction log capable of being printed on demand.

Software shall be available in the data system to allow backup and retrieval of files. Software shall be available in the data system to allow archiving of transactional data as needed.

3. Access to Computer Reports

Both summary and detailed farebox data shall be 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. Software shall be available in the data system to allow backup and retrieval of files.

The data system shall have multitasking capability and shall be 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.

4. Fare Table

The data system shall have the capability of changing the fare tables in the fareboxes per the procedure previously described. Each fare table assigns the value of a full fare as well as any reduced fares (student, elderly, etc.). Each individual fare amount may be between \$0.01 and \$99.99. It shall be possible to change the values through the farebox keypad or data system without removing or replacing any of the farebox electronic components. In addition, the following shall be transmittable:

- Current time and date (any valid time and date)
- Electronic lock code (any five digit number)
- 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 (the data system should transmit the fare structure to each farebox probed)
- Lock code action (the farebox should unlock the cashbox access door upon probing)
- Transfer acceptance parameters
- Tickets/Tokens/Passes acceptance parameters and other attributes

5. Configurable Parameters

The data system shall have the ability to enable or disable various functions such as ticket types, or other designated parameters as previously defined in this document.

6. Custom Reports and Queries

The Contractor-supplied database shall be Microsoft SQL Server/2003 which is compliant with the Microsoft Open Database Connectivity standard (ODBC) to permit manipulation by ODBC-compliant third party tools.

E. Standard Reports

The following standard reports, at a minimum, shall be available from the data system. All reports shall carry the MTA name, the date or period for which data is reported, and the date on which the report was generated and printed by the system. All reports shall be generated through "user friendly" menu-driven software.

1. Individual Farebox/Bus Reports

For individual farebox reports, the printed report 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)
- Total number of riders at each fare level
- Tickets/Tokens/Passes
- Total tokens
- Total stored ride/value cards
- Total passes
- Total bills
- Total coins by denomination
- Technical Maintenance Reports
- Bus Farebox Maintenance History

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 printed next, following printing of the master list. Each route/run record shall be printed in the order in which it was created, along with notations of driver or route number(s) and the time the record was created. It shall be possible to transcribe this data from hard disk to other electronic storage medium for archiving or analysis purposes.

2. Daily Summary Report

The daily summary report shall be printable, on request, at the end of the operating day. MTA shall have 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 shall be 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 printed 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 printed.

3. Periodic Summary Reports

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

Monthly Summary Report: This report shall summarize all activity fleet-wide for a given month. Monthly summary information can 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. It shall be possible to print bar charts giving total revenue by date and total ridership by date.

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. It shall be possible to show each value of revenue, pre-set and key plotted by week in a separate bar chart.

Daily Route Summary Report: This report shall summarize all totals by route for a given day fleet-wide.

Monthly Route Summary Report: This report shall summarize all totals by route for an entire month.

Route/Sum Report: This report shall allow data daily or over a period of time to be sorted first by route, then by run, or by time/date. Ridership shall also be calculated and printed. For each route printed, the number of route run records included in the summary shall be indicated. 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.

4. Exception Report

It shall be possible to 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 data system.

5. Security Reports

The data 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.

6. Editing Data

It shall be possible to edit data in the data system in restricted ways. In order to preserve the security of the data system, only operator entries (route, run, driver and trip numbers) shall be changeable.

7. Transaction Log

A transaction log shall be maintained in the data system computer. The transaction log shall maintain a record of all uses of passwords to access reports, the 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. It is not to be subject to editing by users through any Contractor data system software.

F. Transactional Database and Reporting

The farebox and data system shall be equipped with the software 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 data system during routine probing. At the option of MTA, the transactional database shall be capable of recording:

- 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.

For period pass transactions, the database shall be capable of storing the following information at minimum:

- . Pass serial number
- . Pass type
- . Passenger category
- . Employer account number if applicable

Other data fields shall be provided to permit recording of peak/off-peak usage.

V. SOFTWARE

A. Software License

The Contractor shall provide all software and firmware required to operate the equipment and the system as indicated herein. It is understood that this may include software obtained from commercial sources, as well as software developed by the Contractor.

B. Contractor Software

The Contractor shall provide each MTA location with a license to use, enjoy and operate the equipment using such software as may be developed by the Contractor. Such license to MTA shall be used in conjunction with the equipment provided.

The Contractor agrees to provide such updates and corrections to the software, concurrent with the warranty period, at no additional charge.

If MTA is required to make any changes to the provided software, MTA shall contact the Contractor for an estimate of time and effort to effect such changes. Unless otherwise indicated and agreed to in writing, MTA shall make no changes to the software as supplied by the Contractor. Any changes made without Contractor approval shall void any and all warranties.

It is understood and agreed that the Contractor shall furnish MTA with installed and back-up copies of Contractor-developed software. As such, this does not include any source codes or information relative to the basic design of the software.

C. Commercial Software

The Contractor, as part of the work, may be required to provide MTA with commercial software. MTA shall be responsible for registering the software, obtaining upgrades, and abiding by the terms and conditions of the licensor.

D. Confidentiality

MTA agrees to safeguard all software, key codes, and other security-related information and not disclose such information to any third party unless that third party is retained by MTA to operate and/or maintain the equipment in question.

VI. DOCUMENTATION

The Contractor shall supply complete documentation of hardware, software, and operating system. Such documentation shall consist of, at a minimum, schematics, service manuals, and operating manuals.

A. Operations and Maintenance Manual – Fareboxes

The Contractor shall provide an operations and maintenance manual for the fareboxes. The operations portion of this manual shall 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. The Contractor shall also provide pocket size 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 include, but not be limited to:

- 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.

B. Manuals/Drawings – Vaults

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

C. Data System Manuals

1. Computer and Printer

The Contractor shall provide maintenance information for the various items of equipment provided under this project for the data reporting system. The information shall include a listing of all equipment, a brief description of the system with interconnect diagrams and those commercial operations manuals for the computer and printer which are normally supplied with the equipment by the respective manufacturers, and parts diagrams for the probe and interface enclosures.

2. Probes and Related Equipment

The Contractor shall provide maintenance information on the data probes, junction boxes, and interface boxes supplied with the system. The information shall include interconnect diagrams and parts lists.

3. Software

The Contractor shall provide documentation on the data system computer to allow MTA to access the database for the purpose of report generation. Such documentation shall include the manufacturer's operating guide, disk operating system manuals, and other hardware manuals normally supplied by the computer manufacturer or commercial software supplier. Data system manuals shall include an explanation of all menus and identify data on all reports.

VII. TRAINING

A. Farebox Maintenance Training

The Contractor shall provide a comprehensive farebox and related equipment maintenance and repair training program to be conducted at the Contractor's facility. Personnel to be trained shall be sent at MTA's expense. The instructor provided by the Contractor shall be well versed in the maintenance and repair of the Contractor's equipment. The Contractor's instructor shall make use of visual training aids and all appropriate electronic media to further reinforce the material presented. Handouts to students are required.

The Contractor shall provide a comprehensive farebox training program, including the following:

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

Each student shall be required to tear-down and build-up a farebox in the class. The Contractor shall provide training for a minimum of four (4) technical staff members at various times with completion occurring before installation of the fareboxes at MTA.

B. Revenue Collection System

The Contractor shall provide training classes on the maintenance, troubleshooting and repair of the revenue collection system. This training shall be conducted at MTA's facility immediately following installation of the equipment.

C. Cashbox and Vault Operations



The Contractor shall provide to MTA the services of a qualified and experienced instructor to conduct classes for supervisory and maintenance personnel in the proper insertion and removal of the cashbox from the farebox and in the operation of the cashbox receiver and vault.

D. Data System

The Contractor shall provide the services of a representative to train personnel in the proper operation and use of the data collection and reporting system. Training shall include:

- 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.

The Contractor's representative shall be on-site at MTA's facility for a period of at least one (1) full day for this training.

E. Operations Training

The Contractor shall provide MTA with experienced and qualified instructors who shall conduct one day classes at MTA's training facility. This training program shall be for supervisory personnel, who in turn shall be responsible for the actual training of the drivers. The training program shall cover the operations of the farebox and shall make use of one of the fareboxes provided under this Contract for illustrative use.

F. Passenger Training

The Contractor shall provide MTA with sample educational materials suitable for use in a public relations campaign aimed at educating riders about the new fareboxes.

G. Printing and Encoding Machine (PEM) Training

The Contractor shall provide to MTA experienced and qualified instructors who shall conduct one day classes at MTA's training facility. This training program shall be for personnel who will be using the machines. The training program shall cover all operations of the PEM and shall make use of one of the PEM's provided under this Contract for illustrative use.

VIII. INSTALLATION

A. Fareboxes

The Contractor shall remove existing fareboxes and install the new fareboxes in accordance with the following requirements: The Contractor shall supply all labor, supervision and materials required for the proper installation of the fareboxes in vehicles owned by MTA. All installation shall be performed at MTA's location. The storage and security of these units shall be the responsibility of MTA.

Installed fareboxes shall be positioned for maximum ease of passenger movement and driver operation and compliance with accessibility requirements. The installed position shall allow for complete, unrestricted opening of all farebox maintenance and cashbox doors. Handrails or other equipment which may interfere with these access doors shall be identified by the

Contractor at least 30 days prior to farebox installation so that MTA shall have adequate time to reposition that which interferes with the farebox equipment prior to actual farebox installation by the Contractor.

The Contractor shall supply and install all the necessary wiring, protective devices and mounting hardware necessary for the proper installation and operation of the fareboxes. All new undercarriage wiring shall be suitably protected against the road elements and fastened so as not to interfere with normal bus operation and/or maintenance. No "butt connectors" shall be utilized under the bus.

B. Data System

Except as specifically described herein, the Contractor shall supply all labor, supervision and materials required for the proper installation of the data collection system in the designated MTA location. MTA shall be responsible for running the interconnection cable and any necessary conduit to comply with local electrical codes or requirements.

C. Vault Receiver Installation

Except as specifically described herein, the Contractor shall supply all labor, supervision and materials required for the proper installation of the Vault Receivers in the designated MTA location. MTA shall be responsible for running the interconnection cable and any necessary conduit to comply with local electrical codes or requirements.

IX. SPARE PARTS

A. Spare Parts Requirements

A suggested spare parts list shall be included in the proposal that will allow MTA Technical staff to totally rebuild fareboxes.

B. Parts Availability

1. Contractor Designed Parts

The Contractor agrees to make available such parts, components, devices and/or assemblies used in the equipment and which is designed, made or otherwise controlled by the Contractor for a period of not less than ten (10) years from the date of equipment acceptance. The Contractor shall notify MTA not less than six (6) months from the date of discontinuance to enable MTA to purchase whatever parts are anticipated to be required for the remaining useful life of the equipment.

2. Commercial Parts

For those parts which are purchased by the Contractor from commercial sources and over which the Contractor has no control, the Contractor agrees to monitor the availability of such parts. If a part is to be discontinued and no longer available from the original source, the Contractor shall notify MTA not less than six (6) months from the date of discontinuance to enable MTA to purchase whatever parts are anticipated to be required for the remaining useful life of the equipment. All spare parts shall become the property of MTA

X FAREBOX SIMULATOR

MTA desires to have equipment that simulates the functionality of the farebox to test, identify and troubleshoot problems in individual malfunctioning modules. The components tested shall include, but limited to, Bill Transport and Validator, Coin Validator, Magnetic Stripe, Locks and OCU.

**PART 4
REQUIRED FORMS**

REQUIRED FORMS



PROPOSER'S REPRESENTATIONS

By the act of submitting a bid for the proposed Contract, the Proposer represents that:

- The Proposer and all subcontractors the Proposer intends to use have carefully and thoroughly reviewed the Drawings, Specifications and other Documents and found them complete and free from ambiguities and sufficient for the purpose intended.
- The Proposer and all workers, employees and subcontractors the Proposer intends to use shall follow all applicable codes and regulations, including but not limited to, the Americans with Disabilities Act (ADA) requirements. To that effect the successful Proposer shall be responsible to verify and construct the Project in compliance with the above stated regulations and coordinate any installations as required in order to meet the respective codes. In the event that the Project or any part thereof is found to be non-compliant, the successful Proposer shall be held solely responsible to remedy all found deficiencies at no additional cost to the Owner, or the Owner's employees or agents including Architects, Engineers or Consultants.
- The Proposer and all workers, employees and subcontractors the Proposer intends to use are skilled and experienced in the type of construction represented by the Construction Contract Documents bid upon.
- The proposed figure is based solely upon the Construction Contract Documents and properly issued written Addenda and not upon any other written representation.
- Neither the Proposer nor any of the Proposer's employees, agents, intended suppliers or subcontractors have relied upon any verbal representations from the Owner, or the Owner's employees or agents including Architects, Engineers or Consultants in assembling the bid figure.

Acknowledged:

By: _____

For: _____

Date: _____

LOBBYING



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 making lobbying contacts 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," 61 Fed. Reg. 1413 (1/19/96). Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, et seq.)]

(3) The undersigned 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 sub-recipients 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 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). 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.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, et seq., apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

Name and Title of Contractor's Authorized Official

Date

CERTIFICATION OF PRIMARY PARTICIPANT REGARDING DEBARMENT, SUSPENSION, AND OTHER
RESPONSIBILITY MATTERS

The Primary Participant _____ certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency.

2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction,- violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and

4. Have not within three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Where the Contractor is unable to certify to any of the statements in this certification, the participant shall attach an explanation to this certification.

Contractor (name) _____ CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. SECTIONS 3801 ET. SEQ. ARE APPLICABLE THERETO.

Date: _____ Authorized Official: _____

Signature: _____

The undersigned legal counsel for the Contractor _____ hereby certifies that the Contractor _____ has authority under State and Local law to comply with the subject assurances and that the certification above has been legally made.

DATE: _____ AUTHORIZED OFFICIAL: _____

SIGNATURE: _____

CERTIFICATION OF LOWER-TIER PARTICIPANT REGARDING DEBARMENT, SUSPENSION, AND
OTHER INELIGIBILITY AND VOLUNTARY EXCLUSION

The Lower-tier Participant certifies, by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by Federal department or agency.

If the Lower-tier Participant (potential subcontractor) is unable to certify to any of the statements in this certification, such participant shall attach an explanation to this proposal.

THE LOWER-TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 USC SECTIONS 5801 ET SEQ. ARE APPLICABLE THERETO.

Signature and Title of Authorized Official

The undersigned legal counsel for the _____ hereby certifies that the _____ has authority under State and Local law to comply with the subject assurances and that the certification above has been legally made.

DATE: _____ AUTHORIZED OFFICIAL: _____

SIGNATURE: _____

PROPOSED EXCEPTION TO MTA RFP

Requesting Firm: _____

Name: _____

Address: _____

Phone: _____ Fax: _____

Signature: _____

Re: Section: _____ Page: _____ Line: _____

Proposed Exception: Please enclose catalogs, product information, literature, technical and/or performance specifications as pertinent to help our evaluation.

NB:

In the interest of saving paper, exceptions may be submitted in letter Format provided the section, page and line numbers are clearly marked.

ACKNOWLEDGMENT OF ADDENDA

The undersigned acknowledges receipt of the following addenda to the solicitation document. Write the number and the date issued for each addenda received. If none were received, then write "N/A" here:

Addendum No.: _____ Dated: _____

Signature: _____

Name: _____

Title: _____

Firm Name: _____

Date: _____

INELIGIBLE CONTRACTOR CERTIFICATE

The _____
(Name of Third Party Contractor)

hereby certifies that it is/is not (underscore one) included on the U.S. Comptroller General's Consolidated List of Persons or Firms Currently Debarred for Violations of Various Public Contracts Incorporating Labor Standards Provisions.

Company Name: _____

Authorized Signature: _____

Title: _____ Date: _____

AFFIDAVIT AND INFORMATION REQUIRED OF PROPOSERS

Affidavit of Non-Collusion

I hereby swear (or affirm) under the penalty for perjury:

1. That I am the Proposer (if the Proposer is an individual), a partner in the bid (if the Proposer is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the Proposer is a corporation); and
2. That the attached bid or bids have been arrived at by the Proposer independently and have been submitted without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment, or service described in the invitation to bid, designed to limit independent bids or competition; and
3. That the contents of the bid or bids has not been communicated by the Proposer or its employees or agents to any person not an employee or agent of the Proposer or its surety on any bond furnished with the bid or bids, and will not be communicated to any such person prior to the official opening of the bid or bids; and
4. That I have fully informed myself regarding the accuracy of the statements made in the affidavit.

Company Name: _____

Authorized Signature: _____

Title: _____ Date: _____

Subscribed and sworn to before me this Proposer's E.I. Number:

_____ Day of _____, 20_____

(Number used on Employer's Quarterly Federal Tax Return)

Notary Public

My Commission Expires: _____, 20_____

BUY AMERICA CERTIFICATE

Certification Requirement for Procurement of Steel or Manufactured Products

This procurement is subject to Federal Transit Administration requirements in 49 CFR Part 661. A Buy America Certificate, as shown below, must be completed and submitted with the proposal. A proposal, which does not include the certificate, shall be considered non-responsive.

SIGN ONLY ONE:

Certificate of Compliance with 49 U.S.C. 5323(j) (1)

The proposer hereby certifies that it will meet the requirements of 49 U.S.C. 5323(j) (1) and the applicable regulations in 49 CFR Part 661.

Date: _____

Signature: _____

Title: _____

Company Name: _____

Certificate of Compliance with 49 U.S.C. 5323(j) (1)

The proposer hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j) (2) (B) or (j) (2) (D) and the regulations in 49 CFR 661.7.

Date: _____

Signature: _____

Title: _____

Company Name: _____

(To be submitted with a bid or offer exceeding the small purchase threshold for Federal assistance programs, currently set at \$100,000)

**PROPOSER'S CERTIFICATION OF DISADVANTAGED BUSINESS
ENTERPRISES (DBE)**

STATEMENT OF INTENT OF DBE UTILIZATION

(TO BE SUBMITTED WITH THE BID/PROPOSAL)

We, _____ do certify that on the

(Project Name)

(Dollar Amount of Bid)

DBE's will be employed as subcontractor(s), vendor(s), supplier(s), or professional service(s). The estimated dollar value of the amount that we plan to pay the DBE subcontractor(s), vendor(s), supplier(s), or professional service(s) is \$_____

The undersigned understands that they are to report the amount disbursed to these DBE(s) is required to report the total amount disbursed to DBE(s) for this project at the completion of the project and that payments may be withheld until these reporting requirements are met.

DATE: _____ COMPANY NAME: _____

SUBMITTED BY: _____
(Authorized Representative).

TITLE: _____

OFFEROR SERVICE AND PARTS SUPPORT DATA

Location of nearest Technical Service Representative to Procuring Agency:

Name: _____

Address: _____

Telephone: _____

Offeror to describe technical services readily available from said representative.

Location of nearest Parts Distribution Center to Procuring Agency:

Name: _____

Address: _____

Telephone: _____

Offeror shall describe the extent of parts available at said center.

Policy for Delivery of Parts and Components to be purchased for Service and Maintenance:

Regular Method of Shipment: _____

Cost to Procuring Agency: _____

PRICE SCHEDULE

Name of Proposer: _____

Signature of Authorized Individual: _____

Title of Authorized Individual: _____

Date of Proposal: _____

The Proposer shall use this price proposal form; however, the Proposer is also free to offer an alternative form of pricing.

QUANTITIES AND PRICES

1. Quantity

This delivery quantity contract is for the purchase of Fareboxes and Related Equipment as specified. The initial year purchase will be 20 fareboxes and other related equipment.

Prices

MTA reserve the right to order fareboxes over a one year (1) year period beginning upon the date of contract award. The prices of such fareboxes shall be the prices quoted below. The prices shall remain firm/fixed for any orders issued by MTA within a period of ninety (90) days of contract award.

DESCRIPTION	Quantity	Unit Price	Total Price
Electronic Validating Farebox complete with one (1) Operator Control Unit , and one (1) cashbox			
Single Garage, Single Lane Data System complete with all hardware and probing equipment			
Portable Electronic Key			
Cashbox ID components, computer and software			
Spare Parts			
Thermal coated plastic media, magnetic striped encoded passes			
Thermal coated paper media magnetic striped suitable for transfers			
Farebox Installation			
Farebox Simulator			
Training Cost			
Total			