June 12, 2017

TO ALL PROSPECTIVE PROPOSENENTS

SUBJECT: ADDENDUM NUMBER 1
REQUEST FOR PROPOSALS NUMBER P38186
PROCUREMENT OF NEW RAIL CARS

Transmitted herewith is Addendum Number 1 to the subject Request for Proposals (RFP). Please note that the Proposal Deadline has not been changed. The RFP is hereby modified as follows:

1. Revisions to existing text are identified by a vertical line in the right margin of the line in which a revision occurs.

2. The pages replaced by this Addendum are identified by a number “A-1” in the top right corner of the replaced pages.

3. Pagination changes may occur throughout the document due to the insertion of new language.

REVISED/MODIFIED PAGES

(i) Part 1: Pages 32-33
(ii) Part 4, Exhibit A, Section 5.0 – Interior and Exterior Appointments: Page 5-2
(iii) Part 4, Exhibit A, Section 13.0 – Communications and Video Surveillance: Pages 13-5, 13-7, 13-8
(iv) Part 4, Exhibit D: Page 131
(v) Attachment D, MARTA System Track Chart has been added.
(vi) Proponents are advised that MARTA has uploaded the MARTA Systems Speed Chart to MARTA’s website for Proponent’s use and information.

METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY

Lisa DeGrace
Chief Contracts Officer
(ix) Complete first vehicle set of truck frames
(x) Truck frame fatigue test
(xi) Ship first vehicle shell to final assembly site, if separate
(xii) Commence first vehicle final assembly
(xiii) Complete equipment installation on first vehicle
(xiv) Final truck mounting on first vehicle
(xv) First Article inspection of first married pair
(xvi) Conduct climate room test on one of the first ten (10) vehicles
(xvii) Shipment of first married pair to MARTA's facility
(xviii) Delivery of first married pair at MARTA's facility
(xix) Complete design qualification test series on first married pair
(xx) Acceptance of first married pair to MARTA
(xxi) Complete each vehicle shell
(xxii) Ship each married pair to MARTA's facility
(xxiii) Delivery of each married pair at the MARTA's facility
(xxiv) Acceptance of each married pair (turnover to MARTA)
(xxv) Reliability Demonstration Test

(Proponents are required to limit responses to four (4) pages for the schedule and 4 pages of narrative)

I. **MARTA's Jobs Creation Initiative.** MARTA supports making improvements to the investment in domestic manufacturing facilities. MARTA also supports the recruitment, hiring, training and retention of individuals within the United States of America ("U.S.") facing barriers to employment. Proponents are encouraged to support MARTA's jobs creation initiative through the employment of disadvantaged
workers, development of vendor diversity programs, implementation of workforce
development and training programs and the utilization of facilities within the U.S.
Proponents (and proposed subcontractors) should provide evidence of their specific
activities that (a) have been conducted within the U.S. in the last five (5) years that
created (or Proponent/proposed subcontractors have committed to create)
employment opportunities in the U.S. in connection with the design, production,
manufacturing, testing, acceptance, maintenance and/or warranty coverage related
to electric multiple unit transit rail cars or (b) will be conducted within the U.S. in order
to meet the requirements of this RFP.

3. **Price Proposal:** Each Proponent is **required** to fully complete the Price Proposal Form (Form 3) attached to this RFP. The Price Proposal must also contain any pricing deviations that coincide with any Contract. The pricing deviations must be submitted on Form 10 with the Price Proposal.
fasteners or fire resistant adhesives, or both. Parts subject to corrosion shall be given the required protection prior to receiving insulation. Fiberglass batts and rolls shall be cut 1/2 inch oversize prior to installation, shall have the edges suitably protected to prevent fraying with aluminum foil vapor barrier on the interior facing side.

5.2.1.2.3 Materials

The selected insulation materials shall meet the performance requirements specified. For rigid insulation, glass fiber pre-formed board will be acceptable; for non-rigid insulation, spun glass fiber batts or rolls will be acceptable. Other material may be used subject to approval by the Authority. Urethane, asbestos, urea formaldehyde and polystyrene materials are prohibited.

5.2.1.3 Performance Requirements

All insulation materials shall meet the requirements specified herein:

A. Acoustical. All acoustic insulation shall be chosen for the attainment of the requirements of Section 2.0. The thickness of the damping material shall be selected to provide a vibration decay rate sufficient to attain the specified noise performance. The Contractor shall provide detailed performance characteristics of the material.

B. Thermal. The thermal insulation shall have a thermal conductivity level that is consistent with the HVAC system performance requirements such that the interior temperature requirements as specified in Section 7.0 are satisfied. The Contractor shall determine the value of the projected amount of heat transfer in units of BTU/Hr/°F per foot of carbody length through the carbody while the carbody is stationary, using only the carbody’s own floor-level heaters, under the environmental conditions specified in Section 2.0. This value shall be used in the HVAC system performance analysis required by Section 7.0.

5.2.2 Floors

Floors shall include the panels on which the interior floor covering is laid and the necessary underfloor beams which are attached to the underframe structure.

5.2.2.1 Primary Floor

The floor shall be designed to withstand the dead load plus a crush passenger load of 115 pounds per square foot. Vertical deflection shall be limited to 1/360 of the short span. The floor shall be made up of convenient size panels with necessary splices arranged to coincide with structural underfloor members. The floor panels shall consist of metal faced sandwich construction or phenolic fiberglass sandwich construction, with proven characteristics in a rail environment, shall be flame retardant as defined in Appendix E and be moisture proof. The floor panels shall be fastened to the underframe in a manner that prevents chafing or horizontal movement between surfaces in contact. Such fastening shall be designed to preclude delamination of the floor paneling. All edges, penetrations, cut-outs or openings in the panels shall be sealed in an approved manner to eliminate the potential for future damage from moisture ingress.

Acoustical and vibration isolation shall be provided between the floor panels and the underfloor structure. The installed floor shall be level and flat, except for specified camber, and the upper surface shall be made free from any indentations by the use of an approved filling compound.

5.2.2.2 Subfloor

The complete floor area under the structural underfloor members shall be fully insulated against heat and sound. The compressed depth of insulation shall be two inches, minimum. The subfloor structure
areas between the side door portals. Valance monitors shall be sized to use the maximum available area of the valence. At a minimum, these displays shall show the route and next station information. Capability to alternate this information with other types of information shall be included.

### 13.3.2.4 Next Station Displays

Displays shall be provided at the transition between ceiling heights at each end of the car, adjacent to the outer door vestibules, and a double sided sign at the center of the vehicle. These displays shall provide Next Station information, including door opening side indicators readable from at least 30 feet.

#### 13.3.3 AUDIO ANNOUNCEMENT SYSTEM

An audio announcement system shall be provided for the broadcast of:

A. Automated station approach and arrival announcements  
B. Automated station specific announcements (such as elevator outages)  
C. Automated general system announcements (such as safety messages)  
D. Public address announcements made by the Train Operator or from Central Control (via the carborne radio or handheld radio)  
E. Door Operation Announcements

Automatic audio broadcasts shall be coordinated with visual displays, such that corresponding audio and visual announcements are broadcast simultaneously (closed captioning). The pre-recorded announcement unit shall use stored pre-defined digital messages and shall broadcast these messages to passengers automatically at designated locations along the tracks.

A minimum of three samples of the voice proposed for audio announcements shall be submitted to the Authority for approval. All announcements shall be submitted to the Authority for approval prior to installation on the vehicle.

Text-to-Speech technology shall be used for preparing pre-recorded messages. The text content for the pre-recorded messages will be provided by the Authority. The Contractor will be responsible for recording the pre-defined digital messages per the text provided. The Contractor shall provide to the Authority the same software used by the Contractor to record and store additional messages.

Manual announcements from the Train Operator or from Central Control shall always override a pre-recorded announcement. The Train Operator shall have the capability to make announcements via a handheld radio. Central Control shall have the capability to make announcements to all revenue trains or one train consist.

Door operation announcements shall be made in accordance with Section 6.

The Contractor shall have the public address function interface with the IOC for the unattended train operation option.

#### 13.3.3.1 Power Amplifiers and Speaker Control

Multiple power amplifiers shall be used for the PA speakers in each car of a married pair so that loss of one amplifier will not result in loss of audio announcements. Digital-input power amplifiers are preferred. Power amplifiers shall meet the requirements of EIA-SE-101. Each power amplifier shall be capable of delivering a minimum of 50 watts configured as a constant voltage distribution system at not more than 1 percent total harmonic distortion in the range of 100 Hz to 10 kHz. The frequency response shall be within ±1 dB from 100 Hz to 10 kHz, with provision for a roll-off of 6 dB per octave below 100 Hz. The signal-to-noise ratio of the amplifier below the compression threshold shall be at least 65 dB.
of traffic in front of the vehicle. The microphone shall be used for the train radio, manual public address announcements, and passenger intercom calls.

The microphone shall be noise cancelling, and shall have a frequency response of at least 200 Hz to 10 kHz, ± 7 dB. Output level shall be -56 ± 3 dB referenced to 1 volt/microbar. It shall be of the dynamic type, working in conjunction with audio compression circuitry to suppress or reject unwanted cab noises from broadcast.

A second microphone and push-to-talk button shall be installed in the left side of the cab area to allow Train Operators to make PA announcements without returning to the Operator’s console. The microphone shall be flush mounted behind a protective grill adjacent to the sliding window. The push-to-talk button shall be located in the left door control panel. Component quality and overall system performance shall be equal to that of the microphone at the cab console. The Contractor shall ensure the elimination of feedback from reflective surfaces outside of the car that might interfere with the communications system. Microphones and associated equipment shall function correctly at every location on the Authority’s system regardless of cab windows being open or closed.

13.3.4 PASSENGER CALL STATIONS

Passenger call stations shall be provided adjacent to side doors 3 and 10, on the left collision post of the R-end doorway, and on the right side of the cab partition to permit two-way communication as an intercom between the passengers and the Operator. Call station controls shall be accessible, located 46 inches ±1 inch above the finished floor, or as required by the latest ADA regulations.

Each passenger call station shall be enclosed to prevent moisture entry, and shall have a momentary action, illuminated pushbutton. The Operator’s cab communications control panel shall be equipped with two momentary action pushbuttons, labeled “Talk Intercom” and “Reset Intercom.” The function of the pushbuttons shall be as follow:

A. Depressing the passenger call station pushbutton:
   1. Connects the call station to the active cab and alerts the Train Operator.
   2. Illuminates the active cab “Reset Intercom” pushbutton and actuates a short stroke chime in both the cab and the call station.
   3. Illuminates the activated call station pushbutton, which remains lit until reset by the Train Operator.

B. Depressing the cab “Talk Intercom”
   1. The Train Operator shall be able to select and address an activated call station.

C. Releasing the cab “Talk Intercom” pushbutton:
   1. The activated call station shall be able to address the Train Operator.

D. Depressing the cab “Reset Intercom” pushbutton:
   1. The lamps on all illuminated pushbuttons are extinguished.
   2. The connection between cab and call station is released.

Eight or more intercoms shall be able to queue their presence to the Operator, regardless of train length.

The Passenger Call Station system shall include a caller-ID functionality. The MDS shall indicate the car number and call station position within each car for all activated call stations. If two or more call stations are activated, the Operator will be able to identify the activated locations on a display and select the call station with which to connect. Also, the Operator shall be able to choose to respond to only the active call station or make a general response over the PA system.
Activation of a passenger call station anywhere in the train consist shall cause automatic display of live
video from the camera monitoring the location of the active call station on an Authority-approved
display. An exterior indicating light shall be provided on both sides of the car and shall illuminate upon
activation of any passenger call station on that car. The Contractor shall have the passenger call station
interface with the IOC for the unattended train operation option.

13.3.4.1  Passenger Call Station Speaker and Microphone

Each passenger call station speaker shall have a nominal 4-inch outside diameter and shall be mounted
in an enclosure of which the entire interior surface is covered with a sound-absorbing material.

The loudspeaker shall have an axial free field sound pressure of 79 ± 2 dB referenced to 2E-11 N/mm²
(20 µPa) at a distance of 10 feet from the speaker, with an 80-1,250 Hz, 1 watt warble input signal. It
shall have a continuous power rating of at least 5 watts RMS. The frequency response of the
loudspeaker in its enclosure shall be at least 300 Hz to 5 kHz, ± 5 dB. It shall have a nominal coverage
angle of 100 degrees; response shall be no more than 10 dB down, 50 degrees off axis.

The microphone element of the passenger call station shall have a sensitivity of -50 ±5 dB re 1
volt/microbar.

13.3.4.2  Cab Speakers

There shall be two speakers in each cab, one for the train radio and one for the intercom systems. Both
speakers shall be direct radiator cone type, with a 90-degree coverage angle, and mounted in an
enclosure covered in sound absorbing material. Individual volume adjustment controls shall be provided
for each speaker.

13.3.5  RAIL LINE IDENTIFICATION STRIPS

Rail line color identification strips shall be provided for the full length of both sides of the exterior of the
vehicle. The strips will be viewable from anywhere on the platform and the brightness shall be
automatically adjusted based on ambient conditions. These identification strips shall be capable of
displaying a minimum of 25 colors and shall automatically change to the rail line identification based on
the final destination of the train. Specifications for the rail line identification strips shall be submitted to
the Authority for review and approval.

13.3.6  COMMUNICATIONS CONTROL PANEL AND RADIO EQUIPMENT

The communications control panel (CCP) shall be integrated into the Operator's console. Mounting shall
be from the top, to facilitate maintenance. The CCP shall be functional only when the cab is activated by
the key switch. The CCP shall provide the Train Operator with a control interface to the audio and visual
communications system, and shall provide the following functions:

A. Control and reset passenger call stations
B. Select and control cab-to-cab communications
C. Initiate and control transmit and receive functions of the train radio
D. Adjust speaker outputs in the cab (not PA speakers)
E. Select and control automatic PIS audible and visual announcements.
F. Connect radio transmissions to the PIS system for broadcast.

The CCP shall contain communications equipment status indicators. Indicator lamps shall be LEDs. The
failure of any one CCP in a train shall not cause the communication system to function improperly.

The Contractor shall submit for approval functional descriptions and block diagrams of the CCP and
B. **Workers' Compensation and Employer's Liability Insurance**

Contractor must procure and maintain Workers' Compensation and Employer's Liability Insurance in the following limits to cover each employee who is or may be engaged in work under the agreement:

- **Workers' Compensation:**
  - Employer's Liability:
    - Bodily Injury by Accident/Disease: State of Georgia Statutory Coverage
    - Bodily Injury by Accident/Disease: $100,000 each accident
    - Bodily Injury by Accident/Disease: $100,000 each employee
    - Bodily Injury by Accident/Disease: $100,000 policy limit

C. **Commercial General Liability Insurance**

Contractor must procure and maintain Commercial General Liability Insurance on form (CG 00 00 01 or equivalent) in an amount not less than $5,000,000. The following indicated extensions of coverage must be provided (only if the box is checked):

- Contractual Liability
- Broad Form Property Damage
- Premises Operations
- Medical Expense
- Independent Contractor/Sub-Contractor
- Additional Insured Endorsement* (primary & non-contributing in favor of MARTA)
- Waiver of Subrogation in favor of MARTA

D. **Commercial Automobile Liability Insurance**

None.

E. **Excess or Umbrella Liability Insurance**

Contractor must procure and maintain Excess Liability in an amount of not less than $5,000,000 per occurrence.

The following indicated extensions of coverage must be provided (only if the box is checked):

- Coverage must follow form with primary policy
- May be used to achieve minimum general and auto liability limits
- Coverage must be as broad as primary policy
ATTACHMENT D
MARTA SYSTEM TRACK CHARTS

See attached.
System

Track Charts

This Track Chart belongs to
NOTES:
1. SEE DWG #22, ITM3, CTW1, CTW4 AND CTW4 FOR 301, 302 AND 303 TRACK ALIGNMENTS.
2. EXCEPT FOR 301, 302 AND 303 TRACKS T/R CAPS FOR ALL OTHER TRACKS IS 0/14.75.
AS BUILT

SYSTEM MAINTENANCE TRACKS HORIZONTAL ALIGNMENT

LINE    DESCRIPTION    STATION    NORTH    CURVE DATA

West    P1    #670 TO    SM-1 375+00    1.367-570.234    2.256-051.000
        160 P1 #670 TO    ET-1 319+041.71    1.367-084.017    2.254-906.349
        141 P1 #670 TO    SM-1 378+43.14    1.367-613.138    2.256-029.966
        168 P1 #670 TO    SM-1 378+95.46    1.367-627.340    2.255-101.966
        168 P1 #670 TO    SM-1 378+96.62    1.367-627.340    2.255-116.940
        184 P1 #670 TO    SM-1 378+96.00    1.367-337.035    2.235-488.189

East    P1    #670 TO    SM-1 370+46.72    1.367-504.017    2.254-356.349
        170 P1 #670 TO    ET-2 302+44.14    1.367-601.477    2.255-094.911
        171 P1 #670 TO    SM-1 372+68.38    1.367-605.029    2.255-078.626
        172 P1 #670 TO    SM-1 372+72.58    1.367-602.920    2.255-078.626
        173 P1 #670 TO    SM-1 375+00.05    1.367-568.267    2.255-112.058
        174 P1 #670 TO    SM-1 379+91.00    1.367-621.059    2.255-486.816

METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY
NORTH LINE RAIL SERVICES FACILITY
ALIGNMENT CONTROL PLAN
SHEET 2 OF 7

DATE REVIEWED: 04-10-2003
SHEET 1 OF 7
NR LH NO. 10 T.O. TO YL YARD LEAD

NR RH NO. 10 T.O. TO BYPASS
AS BUILT

METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY

SOUTH LINE
SOUTH YARD AND SHOPS
ALIGNMENT CONTROL PLAN

NOTES:

1. FOR GENERAL NOTES SEE DWG NO. 3845

CURVE DATA

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YARD TRACKS HORIZONTAL ALIGNMENT

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### YARD TRACKS HORIZONTAL ALIGNMENT

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**METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY**

**SOUTH LINE**

**SOUTH YARD AND SHOPS**

**ALIGNMENT CONTROL PLAN**

**CY154**

**TX554 2 1**
NOTE: TO ALL TURNOUTS ARE NO. 8 UNLESS NOTED OTHERWISE.

INSULATED JOINT LOCATED AT STOCK RAIL TENDS PER FOOT

SOUTH LINE
SOUTH YARD

INSULATED JOINTS

METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY

SOUTH LINE
SOUTH YARD

AS BUILT

PRELIMINARY SHEETS

DESIGN DRAWING

INSULATED JOINTS

INSULATED JOINTS