



# **Massachusetts Bay Transportation Authority**

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## **Silver Line Bus Overhaul Program Neoplan Dual Mode Articulated (DMA)**

**Maine Military Authority (MMA) Negotiated Contract Agreement**

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## Overview of Neoplan Dual Mode Articulated (DMA) Overhaul Program Bus

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Our presentation today focuses on a request for funding to modify the existing Base Contract with Maine Military Authority (MMA) in order to complete the overhaul of the Silver Line DMA bus fleet.

- Overhaul of the 32 bus fleet was suspended by MMA in November 2016 with only 11 of the buses delivered.
- MBTA evaluated all available options to complete the overhaul program in the most cost-effective manner and on an expedited schedule, in order to support reliable service on Silver Line routes.
- The Authority has concluded that modifying the contract with MMA achieves these objectives, and so requests approval from the Fiscal Management Control Board (FMCB) of the revised contract agreement negotiated with MMA.



## Additional Funding Request

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- Currently the project budget has \$1,957,984 in available funding from State Revenue Bond R13A09 V52.
- Authorization from the FMCB for additional funding in the amount of \$2,187,363 from the **Capital Maintenance Fund** is required for completion of the overhaul for all 32 DMA buses.
- With the addition of the requested funding, the overall project budget will remain within the original Independent Cost Estimate (ICE).



## Neoplan Dual Mode Articulated (DMA) Bus Fleet Overview

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The DMA bus fleet is one of the most sophisticated vehicle fleets in North America. The bus is equipped with a 500hp diesel engine and generator to operate on roadways, as well as a full light rail propulsion system to operate as an electric trolley bus (emissions free) in the Silver Line Transit Way tunnel.

- The DMA buses were specially designed and delivered in 2004-2006 by Neoplan/Skoda.
- The Fleet has 32 buses, 8 of which are Massport Airport Service buses.

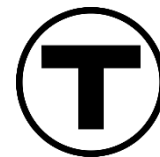




## Bus Overhaul Program

- The DMA bus overhaul was deemed essential to improve the reliability of the aging bus fleet until an alternative vehicle type is selected, designed and delivered for use in the Silver Line tunnel.
- MBTA DMA buses average 250,000+ miles/bus, while DMA Massport Airport Service buses average approximately 400,000 miles.
- The scope of work for this overhaul program is significant and includes complete structural inspection, structural repair where required, overhaul of propulsion system, refinish of interior (including LED lighting), axle overhaul, engine overhaul, upgrade of engine / generator cooling system, and other electrical, mechanical, and aesthetical updates typically performed during a midlife overhaul.





## Contract Background

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The MBTA advertised Invitation for Bid (IFB) on October 13, 2013. MMA was the sole bidder. The Contract NTP was issued on October 28, 2014.

- MMA offered a bid price of \$18,567,291 and was 17.4% under the ICE of \$22,475,415, MMA's bid may have been considered an opportunity to transition their business focus from military vehicles to transit vehicle overhaul services.
- MMA successfully completed the design review process for many new systems and established work procedures for production.
- The complexity and uniqueness of the DMA bus design, coupled with obsolete materials issues (OEM Neoplan - no longer in business) presented daily challenges to production.
- MMA has been unable to meet the contractual delivery rate (1 bus returned every 2.5 weeks) due to material procurement constraints (State of Maine purchasing/procurement regulations).
- 11 of 32 buses have been successfully overhauled and returned to service. Currently 4 buses are at MMA's facility (in various stages of overhaul).
- The MBTA has been satisfied with the overall quality of the 11 overhauled buses delivered to date.



## Status of Negotiations

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- Due to several project delays and cost overruns associated with MMA materials procurement and limited cash flow, the Governor of Maine suspended the DMA Bus Overhaul Program in November 2016.
- MBTA Staff believes that a continued partnership with MMA is important to continue the delivery of high quality overhauled buses in a timely manner.
- MBTA, MMA, and the State of Maine have held focused discussions and negotiations on reducing MMA's high costs, looking at: indirect costs, efficient utilization of direct labor, and timely delivery of required materials (sourcing/kitting) to meet the Contract delivery rate.
- Between January 20 - 25, 2017, MMA provided the MBTA a "Proposed Restart Plan" which highlights MMA's expectations and assumptions for the continuation of the Program. The MBTA has thoroughly evaluated the documentation supplied and has determined that MMA has a clear understanding of the requirements for the successful completion of the remaining vehicles.



## Overview of Negotiated Proposal

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The major elements of the agreement include:

- MMA and the State of Maine will cover all past debts associated with the remanufacturing of the DMA buses (estimated at \$6.0M). Any other costs incurred above and beyond the amounts outlined in the Negotiated Contract Agreement are the responsibility of MMA.
- MBTA requires Maine Governor / Legislative Approval and Appropriation of all MMA's past debts for labor, vendors, and subcontractors.
- Base Cost per DMA Bus is increased to a total cost per bus of \$686,423, still below the ICE.
  - **Negotiated Base Cost Per DMA Bus - \$686,423** x 32 Buses = \$21,965,532
  - **Independent Cost Estimate Cost Per DMA Bus - \$702,357** x 32 Buses = \$22,475,415
- MBTA \$2.0M advance to MMA/Loring Industries<sup>1</sup> to initiate immediate procurement of materials to be repaid through the invoicing process.

<sup>1</sup>Loring Industries is a 3<sup>rd</sup> Party Procurement Partner assisting MMA





## Overview of Negotiated Proposal

A revised Base Contract Value of \$21,965,532 was negotiated between MMA and MBTA (shown in the adjusted price columns table below).

ICE	MMA Bid	Adj. Price	Adj. Price/Per Bus	Description
\$ 6,771,520	\$ 5,391,969	\$ 5,391,969	\$ 490,179	First 11 Remanufactured DMA Buses - Cost per Bus (based upon the MMA original bid price)
\$ 12,927,447	\$ 10,293,759	\$ 13,692,000	\$ 652,000	Next 21 Remanufactured DMA Buses - Cost per Bus (negotiated to complete remaining 21 DMA Buses)
\$ 19,698,967	\$ 15,685,728	\$ 19,083,969	\$ 596,374	32 Remanufactured DMA Buses
\$ -	\$ 297,024	\$ 297,024	\$ 9,282	Optional Work Scope (No Change)
\$ 524,992	\$ 373,776	\$ 373,776	\$ 11,681	Optional Three Generators (No Change)
\$ 20,223,959	\$ 16,356,528	\$ 19,754,769	\$ 617,337	Total of Above
\$ 2,251,456	\$ 2,210,763	\$ 2,210,763	\$ 69,086	Hidden Damage & As-Needed Budget (No Change)
\$ 22,475,415	\$ 18,567,291	\$ 21,965,532	\$ 686,423	Total Contract Amount & Final Cost per DMA Bus
		\$ 547,106	\$ 17,097	Change Order for Five (5) Additional PA44 Generators
		\$ 200,000	\$ 6,250	Change Order for Increased Hidden Damage Budget
		\$ 22,712,638	\$ 709,770	Total Contract Amount & Final Cost per DMA Bus (Including Change Orders)



## Additional Contract Provisions Negotiated with MMA

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Other important terms and conditions of the Negotiated Contract Agreement include:

- The MBTA will need to review and approve the following:
  - MMA indirect labor headcount & costs, as well as the final indirect labor reductions & costs.
  - MMA direct labor staffing levels & costs that are consistent with meeting the contractually required delivery rate.
  - MMA project “restart” schedule, with details and definition of full staffing.
- To assist MMA in the restart of the program, the MBTA will provide materials currently available in MBTA’s inventory for critical shortages on the four buses currently in process at MMA. “Loaned” parts will be returned either in kind or a reduction of cost to the overall Contract.
- MBTA is waiving all prior liquidated damages for the first 11 Remanufactured DMA Buses. Going forward, the delivery requirement is 1 bus delivered every 2.5 weeks, and any potential liquidated damages for failure to meet this requirement will be applicable once MMA “ramps-up” to full staffing or no later than 45-days after the Authority issues NTP for the revised Contract.



## Recommended MMA Change Orders (In Addition to Negotiated Contract Agreement)

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The average DMA bus providing service to the airport has accumulated in excess of 400,000 revenue miles. The Generators, manufactured by a MA local firm (DRS), allow these buses to run “off the wire”. However, the original Generators are starting to fail at a higher rate than anticipated. Additional rebuilt and new Generators will be required to successfully complete this Overhaul Program.

The following Change Orders are therefore recommended:

- **Change Order 1: Procurement and installation of five (5) additional PA44 Generators.**
  - MMA/Skoda have successfully integrated a smaller, less expensive Generator (new PA44 vs. older PA57). The MBTA currently has three (3) of these new Generators operating in revenue service on overhauled buses.
  - MMA has provided a proposal for the purchase of five (5) additional PA44 Generators (in the amount of \$547,106).
- **Change Order 2: Increase in Hidden Damage (HD) Budget in the amount of \$200k for the repair of existing PA57 Generators.**
  - Four (4) failed PA57 Generators have been sent to DRS for repair (approximately \$200k total).
  - Formally allocating funds to the Generators will allow for continuation of “as-needed repairs” above and beyond the basic work scope.



## Summary: Final Actions Required to Complete DMA Bus Overhaul Program

- MMA’s original bid (\$18,567,291) was \$3,908,124 less than the Independent Cost Estimate (ICE - \$22,475,415).
- In the Negotiated Contract Agreement between MMA and the MBTA, the revised Contract amount (\$21,965,532) excluding additional work scope is within the ICE.
- The DMA Bus Overhaul Program success has been enhanced by the successful integration of a less expense Generator alternative for the MBTA buses. The additional Change Orders (\$747,106) are required to ensure the successful completion of the program and mitigate the associated risks with Generator failures.
- Currently this Program has \$1,957,984 available in the Project budget. Therefore additional funding in the amount of **\$2,187,363** from the **Capital Maintenance Fund** is hereby requested (as shown in the table below).

\$	21,965,532	Total Contract Amount & Final Cost per DMA Bus
\$	547,106	Change Order for Five (5) Additional PA44 Generators
\$	200,000	Change Order for Increased Hidden Damage Budget
\$	22,712,638	Total Contract Amount & Final Cost per DMA Bus (Including Change Orders)
\$	18,567,291	Original Contract Value
\$	4,145,347	Total Dollars Required to Fund MMA Revised Contract
\$	1,957,984	Project Budget Available (State Revenue Bond - R13A09 V52)
\$	<b>2,187,363</b>	<b>Additional Funding Requested (Capital Maintenance Fund)</b>



## MMA Agreement Lessons Learned

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- The MBTA should have utilized a Request for Proposal (RFP) “Best Value” process for the bid evaluation and contract award process instead of Invitation for Bid (IFB) low bid process.
  1. The Best Value process may have attracted more than one bidders proposal.
  2. Bidders prefer a negotiated process as opposed to a low-bid offer.
  3. Bidders prefer to have confidential discussions on technical solutions and prices can be evaluated for rational and realistic assumptions.
- MMA offered a bid price of \$18,567,291, that was 17.4% under the Independent Cost Estimate.
  - There was no opportunity to evaluate the assumptions or rationale that determined the MMA pricing proposal.