

Rail Car Evaluation and Replacement Summary

RTA Mission:

**To Provide
Safe, Reliable, Clean, and Courteous
Public Transportation**



Greater Cleveland Regional Transit Authority



GCRTA HRV & LRV Fleets

- LRV (Light Rail Vehicle) Fleet
 - 34 of 48 Breda Cars
 - In service in 1981 (36 years)
- HRV (Heavy Rail Vehicle) Fleet
 - 40 of 60 Tokyu Car Corp. Airporter II Cars
 - In service in 1984 (33 years)



How does the GCRTA fleet service age compare to the national average per NTD data?

LRV (2,445 active)

- Avg Age = 20 years (1997)
- GCRTA Age = 36 years (1981)

HRV (11,967 active)

- Avg Age = 24 years (1993)
- GCRTA Age = 33 years (1984)



What is the useful life of a rail car as defined by FTA?

- FTA Useful Life Benchmark (ULB), published 10-26-2016 defines the useful life of LRVs and HRVs as 31 service years
- The GCRTA LRV fleet is 5 years past FTA ULB
- The GCRTA HRV fleet is 2 years past FTA ULB



LRV Overhaul

- Completed in 2005-2009
 - Car body and interior refresh– Floor, roof, side paneling, structural members, seating, window seals
 - Exterior refresh – Structural members, paint, body work, undercoat
 - Component overhaul - HVAC System, Propulsion, Braking, Doors (not modernized or upgraded, new part – old tech)
 - No wiring upgraded or replaced throughout the car



HRV Overhaul

HRV – Mechanical components completed in 2013

- HVAC, Propulsion and other components replaced with new (old tech)
- No modernization upgrade of components

HRV – Interior completed in 2016

- Interior refresh – floors, seating, panels



Maintenance Challenges

- Sourcing parts due to market obsolescence and uniqueness (one of a kind)
- Increased part lead times and costs
- Outmoded technology – several component replacement/modernization projects



LRV & HRV Fleet Evaluation

- RFP for consulting/engineering services for Rail Car Evaluation for both LRV and HRV fleets
 - Includes structural testing and 3D model analysis
 - Component & System modernization analysis
 - Maintenance practice analysis
 - Fleet improvements and costs to extend life 10 – 30 more years
 - Recommendation to purchase new or overhaul



Funding Challenges

- New rail cars are a significant capital cost
- Average cost: \$4M - \$5M
- Replacing 40 HRV and 35 LRV cars with new would cost approx. \$300M - \$375M plus any maintenance upgrades to the Rail Shop
- From NTP – 5 years to receive first car



Rail Manufacturer Meetings

- Siemens (2/2/2017)
 - San Diego - 190 LRV order
 - Seattle – 152 LRV order
- Bombardier (3/6/2017)
 - New York MTA – 1,172 HRV order
- Kawasaki US (3/20/2017)
 - Washington DC – 220 HRV order
- CRRC (10/31/2017)
 - Chicago – 846 HRV order
- Kinkisharyo (sched. 12/7/2017)
 - Los Angeles – 235 LRV order
 - Boston – 120 LRV order



Rail Manufacturer Meetings

Other Manufacturers:

- CAF USA (4/27/2017)
- Stadler US (5/31/2017)
- Brookville (10/5/2017) - *Rail Car Rebuilder*
- Hitachi (sched. 11/28/2017)



Procurement Overview LRV & HRV Fleet Evaluation

- RFP was issued on November 13, 2017
- RFP due date December 20, 2017
- Anticipated Board Award March 2018



Greater Cleveland Regional Transit Authority



Procurement Overview

LRV & HRV Fleet Evaluation

Evaluation Panel Members:

- Rail Equipment
- Fleet Management
- Engineering and Project Management
- Office of Management & Budget
- Safety
- Procurement



Procurement Overview LRV & HRV Fleet Evaluation

Evaluation Criteria:

- Technical Evaluation
- Firm Experience
- Cost Effectiveness/Price



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