



**SFMTA**  
Municipal  
Transportation  
Agency



# Muni Forward: Get On Board!



**Siemens S200 SF Light Rail Vehicle**

07 | 15 | 2014

SAN FRANCISCO, CALIFORNIA

# The Right Vehicle to Meet Increasing Demand for Rail Transit in the City

- Meets Central Subway time-table
- Addresses demand for more transit rail services
- Introduces new standard for performance
- Provides immediate economic stimulus for region



## We Have Integrated Lessons Learned From Prior Procurements & Day-to-Day Service Issues

- Industry Outreach
  - regular and open communications with carbuilders
- Selection process
  - designed to ensure a qualified carbuilder
- Performance based specification
  - to allow carbuilder to provide proven designs
- Increased reliability requirements
  - Doors and steps 85,000 mdbf (LRV2 was 12,000)
  - Coupler 100,000 mdbf (LRV2 was 19,000)

(MDBF – Mean Distance Between Failures)

**The goal of the project was to procure a first class car, from a quality carbuilder, at a competitive price**

# The Evaluation is complete!

## Recommendation for Award is ready for approval.

- RFQ / RFP Process was completed March 2014
- RFP Evaluations Completed April 2014
- Contract Negotiation Completed in May 2014
- **Recommending to Award the Contract July 2014**
- Contract Award Anticipated Fall 2014
- First cars for Central Subway will be delivered by end of 2016
- Last of the 24 Car order will be delivered by 2018
- Completion of Option car (40 cars) by end of 2019
- Phase 2 - 151 cars delivered from 2021 – 2028



## Two Responsive Proposals Were Received

Evaluation Committee	Item	CAF	Siemens
Qualitative	LRV Experience	Strong	Strong
Qualitative	US Market Experience	6 projects	More than 14 projects in 5 yrs
Qualitative	On Time Delivery Record	Has had some delays	<b>Strong on time performance in US over 10 yrs.</b>
Qualitative	Financial Strength	Medium	<b>Supportive &amp; Strong Parent Company</b>
Technical	Design	Similar to current LRV	Offering significant improvements over LRV2/3
Technical	Sub suppliers	All proven with US experience	All proven, some with no US exp. with chosen systems
Technical	Organization/Location	Multiple Locations (Design/prototype in Spain)	<b>Designed, built, tested, assembled - LOCAL</b>
Technical	Headquarters location	Spain	Sacramento, CA
Price	Base Price	Within Anticipated Range	<b>~ 20% lower than estimate</b>
Alternate	Alternate Approaches	1 Commercial 4 Technical alternatives	4 Commercial & 25 Technical alternatives



## Siemens outscored CAF in every category and by a significant margin

	Weighting	CAF Proposal Score	Siemens Proposal Score
Qualitative Responsibility	10%	4	6
Technical Evaluation	65%	29	53
Price Evaluation	25%	20	25
Alternate Approaches	10 extra	1	7
<b>TOTAL</b>		54	91
Base Proposal Price		\$817,145,015	\$640,626,951

## Evaluation Committee Validated Siemens Proposal - Exceeds Expectations!

Evaluation Committee of panelists with various backgrounds and experience had conducted multiple reviews and assessments of both technical and commercial terms of the proposal and determined that :

- Siemens has a proven record of providing reliable, safe, attractive and technically advanced LRVs
- S200 SF features provide above and beyond industry standard that give value and financial benefits to our Agency's operation, including but not limited to energy efficiency improvements and time/cost saving maintenance designs
- Siemens Price is nearly 20% below estimates.

## Factors Which Contribute to Lower Cost & Higher Value on Siemens Vehicles

- Vehicles are to be manufactured locally (90 Miles from San Francisco)
- Assembly plant is solar-powered and has been up and running for a proven amount of time
- **Proven technology & design**
- Several major systems in the car provided by Siemens Corporation
- Design to meet our unique infrastructure constraints
- **Competitively priced to win!**

## New LRV4 train on the lift at MUNI Metro East Facility



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# State of The Art Features in the New LRV To Improve Safety and Performance

- Lightweight car body features a crashworthy design – meeting CPUC requirements
- Meets stringent weight requirements
- Designed to allow easy access for inspections, maintenance and repairs to minimize time out of service



- Improved passenger amenities, fully ADA compliant
- Modern information system with crystal clear audio announcement and camera surveillance system

## High Reliability / Low Maintenance Design

- Open interior reduces cleaning effort
- Advanced Monitoring & Diagnostics system – reduces diagnostic time, identifies service needs
- Streamlined door design, fewer parts than LRV2 (over 200 parts versus less than 20 parts)
- Full range electric braking reduces wear on friction brake components
- Modular design – serviceable components can be easily disconnected, removed, replaced, and reconnected
- Primary suspension reduces shock loads between truck frame and track
- Replaceable carbody elements facilitate repairs

New LRV4 near 3<sup>rd</sup> and King



# Directly Address Component That Most Negatively Impacts Rail Service

- Improved passenger door system - higher reliability – fewer moving parts
- Dramatic Reduction in maintenance
- Improved passenger door obstruction detection system
- Electrically operated steps for higher reliability and smoother operation



# Longitudinal Seating: Wide, Open Interior



Final layout will be determined via public process/vetting with stakeholders such as CAC and MAAC

# Operator's Cab



Left View

Right View

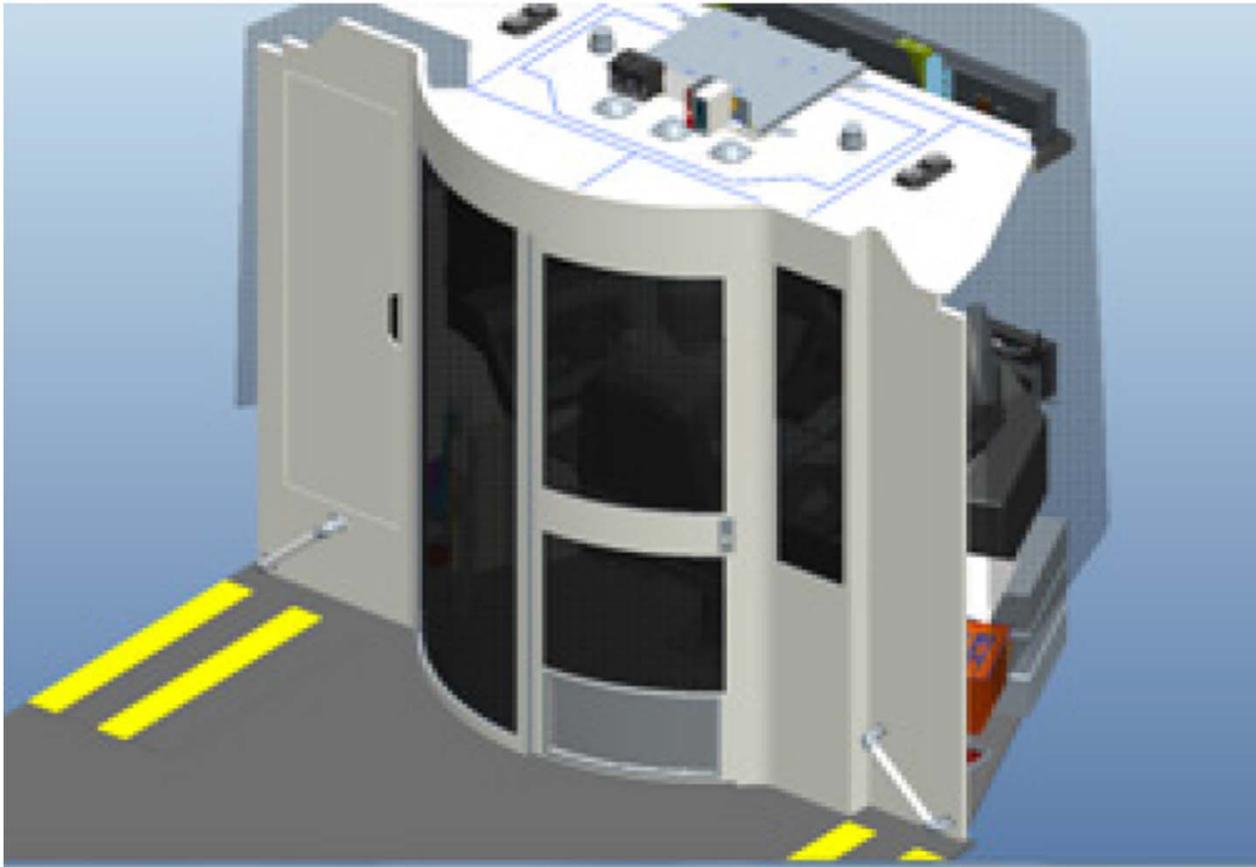


Center View



Ergonomic, High Visibility Design

## Sliding Cab Door Offers Easier Access to Cab



Sliding Cab-Door increases speed, ease of ingress / egress for operators. Provides benefit and value in safety and aesthetic comfort preference for operator.

# Exceed All Our Procurement Objectives

- **ON TIME:** Car builder has solid history of delivering **Quality** cars on time
- **LOCAL :** The project to be delivered (including support) within 90 miles of San Francisco
- **EXTENDED LIFE:** Offering 30 year design life vs. 25 years required
- **EXCEED RELIABILITY REQUIREMENTS :** Offering safe, attractive vehicles with reliability more than twice specified values in the RFP
- **FASTER DELIVERY :**Committed to deliver vehicles earlier than required, and also offering expedited delivery rate
- **COMPETITIVE PRICE:** High value low cost cars provide the Agency the opportunity to get 215 cars with the original budget for 175 cars
- **FINANCIAL SOLUTION:** Offering financing solutions to address Muni cash flow challenge

Three trains at MUNI Metro East Facility



# Meeting Transportation Goals of Current and Emerging San Francisco

<b>Need</b>	<b>No. of Cars</b>	<b>Delivery</b>
<b>Central Subway Extension and near term service expansion</b>	<b>24</b>	<b>2017 – 2018</b>
<b>Fleet Replacement</b>	<b>151</b>	<b>2021 – 2027</b>
<b>Expansion Needs (Travel Demand Study)</b>	<b>85</b>	
<b>Short Term</b>	<b>40</b>	<b>2018 – 2021</b>
<b>Long Term</b>	<b>45</b>	<b>2027 – 2030</b>

- **Funding for the base order for CS and fleet replacement is in place**
- **Funding for the needed short term expansion is being determined**

## Alternative Approaches Offer Benefits

- **Inclusion of alternatives was designed to allow Carbuilders to:**
  - Suggest changes to the RFP if there is benefit to the SFMTA
  - Offer **creative solutions** to the gap in vehicle deliveries
- **Siemens alternate commercial proposals presents an opportunity to SFMTA**
  - Early arrival of vehicles
  - Reduced price for faster production with no gap in vehicle delivery
  - Financing in lieu of accelerated schedule and parent company guarantees

# Siemens Proposed Commercial Alternatives Offer Faster Delivery and Cost Savings

1. Parent Company in lieu of Commercial Paper – savings of \$3.4 M savings
2. Early delivery of 40 cars (to fill the production gap) - additional savings of \$2.7 M savings, meeting service demand and improve service reliability
3. Three year financing for \$150M for \$5M cost – (savings from item 1 and 2 above neutralize this cost)
4. Faster delivery of 151 cars (four per month, instead of two per month) – potential savings \$16M (quicker/cheaper)

## Requesting approval from the MTA Board today for the following:

- Execute the Contract to provide up to 260 vehicles
- Recommend that the Board of Supervisor approve the contract
- Pursue vendor financing option for other or available funding to expedite delivery of option vehicles
- Action is required today to meet the project schedule

Recommended SFMTA Board Meeting Approval	- July 15, 2014
Recommended Board of Supervisors Approval	- September 2014
Notice to Proceed	- October 2014
First prototype car delivered	- December 2016

## New LRV4 at 3rd and King

