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

<table>
<thead>
<tr>
<th>Category</th>
<th>Weighting</th>
<th>CAF Proposal Score</th>
<th>Siemens Proposal Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative Responsibility</td>
<td>10%</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Technical Evaluation</td>
<td>65%</td>
<td>29</td>
<td>53</td>
</tr>
<tr>
<td>Price Evaluation</td>
<td>25%</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Alternate Approaches</td>
<td>10 extra</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>54</td>
<td>91</td>
</tr>
<tr>
<td>Base Proposal Price</td>
<td></td>
<td>$817,145,015</td>
<td>$640,626,951</td>
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</tbody>
</table>
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
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 3rd 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
Final layout will be determined via public process/vetting with stakeholders such as CAC and MAAC
Operator’s Cab

Ergonomic, High Visibility Design

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

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

<table>
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<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Recommended SFMTA Board Meeting Approval</td>
<td>July 15, 2014</td>
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<tr>
<td>Recommended Board of Supervisors Approval</td>
<td>September 2014</td>
</tr>
<tr>
<td>Notice to Proceed</td>
<td>October 2014</td>
</tr>
<tr>
<td>First prototype car delivered</td>
<td>December 2016</td>
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</table>
New LRV4 at 3rd and King