



**PROCUREMENT OVERVIEW and
RECOMMENDATION FOR AWARD
to
BOARD OF DIRECTORS**

April 26, 2012

Procurement of Transit Vehicles

RFP No. 40FA-110

Introduction



- **Purpose:**

- To provide an overview of the District's New Vehicle procurement, including the staff recommendation for award:
 - procurement goal
 - procurement results and timeline
 - proposal evaluation process
 - proposal scores and prices (Initial and BAFO)
 - discussion of funding plan
 - recommendation
 - next steps

Procurement Goal



- **Goal:**

- To obtain the best quality rolling stock at a fair and reasonable price

Procurement Result



- **Staff recommends:**

- Proposer with highest technical score
- Proposer with lowest price (highest score for price)
- Proposer with highest combined score as required by the RFP
- Proposal with the lowest price = \$1.543 Billion
 - price is 25% below Engineer's Estimate
- Award Base Contract (260 cars) and Option 1 (150 Cars) for total of 410 Cars

Procurement Timeline



- | | |
|--|----------|
| • Begin development of specification
➤ Restart 2008 | 2005 |
| • Industry/peer review of specification | 2009 |
| • RFP No. 40FA -110 released | Sep 2009 |
| • Pre-bid conference | Oct 2009 |
| • Initial proposals received | Jun 2010 |
| • Competitive range (CR) determined | Aug 2011 |
| • Negotiations with proposers in CR | Oct 2011 |
| • Request for BAFO issued | Dec 2011 |
| • Best and Final Offers received | Feb 2012 |
| • Recommendation for award (for information only) | Apr 2012 |
| • Board action on recommendation for award | May 2012 |

Proposal Evaluation Process



- **Evaluation process carefully designed to:**
 - Include the criteria, sub-criteria and sub-sub-criteria detailed in the Instructions to Proposers (ITP)
 - Include checks and balances to reduce the possibility that any one criteria or single evaluator could have any controlling effect on the overall scoring process
 - Ensure that the award will be to the qualified Proposer whose proposal is most advantageous to the District

Evaluation Criteria



- **Eight Evaluation Criteria:**
 - Key Vehicle Parameters (Go/No Go Only)
 - Price (33%)
 - Experience and Past Performance (25%)
 - Vehicle Subsystem Design Details (20%)
 - Approach to the Work (10%)
 - Delivery Schedule and Narrative (5%)
 - Staffing (5%)
 - Energy Figure of Merit (2%)

Setting the Buy America Preference



Factors:

- **Carbuilders' ability to achieve domestic content vary according to:**
 - US supplier network
 - Engineering/ ability to adapt
 - Production flexibility
 - Buy America expertise
- **Increased domestic content may have some impact on:**
 - Price
 - Engineering risk

Approach:

- **Price score adjustment that rewards increased domestic content without encouraging poor technical risk management or significant price increases**
- **It is estimated that the preference may result in a 5-10% increase in the materials cost portion of price proposals**

Application of Preference – Effect on Evaluation



- Application of Buy America preference will not change the overall evaluation factors or their relative weights in new car procurement
- Preference is applied to Price for evaluation purposes only

Evaluation Factors
(in descending order of importance)

- Price
- Experience
- Vehicle Design
- Approach to Work
- Schedule
- Staffing
- Energy Figure of Merit

Total Score

- The proposer offering the highest domestic content may or may not receive the highest overall evaluation score

Proposal Evaluation Process



**Go/No
Go**

**Score
Technical**

**Score
Price**

**Combine
Scores**

*Verification of
Key Vehicle
Parameters in
Accordance
With the ITP*

*Technical
Subcommittee
Evaluates and
Scores;
Final Technical
Scores Recorded
for Each Proposal*

*Price
Subcommittee
Opens Price
Envelopes and
Scores Each
Proposal*

*Price and Technical
Subcommittees
Combine Price and
Technical Scores;
Combined Proposal
Scores Recorded*

Technical Evaluation Protocols



Two Independent Teams



Consistent Team Member Assignments



Consistent Scoring Methodology



Consistent Evaluator Scoring Process



Consistent Score Reconciliation Process

Technical Evaluation Protocols

Two Independent Teams - Consistent Team Member Assignments - Consistent Scoring Methodology



Sub-sub-criteria example

Evaluation Criteria and Sub-criteria	Evaluation Team A	Evaluation Team B
▪ Key Vehicle Parameters (Go/No-Go)	▪ Lead -- Advisor	▪ Lead -- Advisor
▪ Experience	▪ Lead	▪ Lead
▪ Vehicle Subsystem Design Details	▪ Lead	▪ Lead
– Carbody	– Advisor	– Advisor
– Trucks	– Advisor	– Advisor
– Propulsion and Control	– Advisor	– Advisor
– APSE/LVPS and Grounding	– Advisor	– Advisor
– Friction Brakes	– Advisor	– Advisor
– HVAC	– Advisor	– Advisor
– Lighting	– Advisor	– Advisor
– Communications	– Advisor	– Advisor
– Cab and Trainline Controls	– Advisor	– Advisor
– Door	– Advisor	– Advisor
– Coupler and Coupling System	– Advisor	– Advisor
– Train Control and VATC	– Advisor	– Advisor
▪ Approach to the Work	▪ Lead	▪ Lead
– Design	– Advisor	– Advisor
– Manufacturing	– Advisor	– Advisor
– Quality Assurance	– Advisor	– Advisor
– Program Management	– Advisor	– Advisor
– SMP	– Advisor	– Advisor
▪ Delivery Schedule and Narrative	▪ Lead	▪ Lead
– MPS Verification	– Advisor	– Advisor
– Schedule History	– Advisor	– Advisor
▪ Staffing	▪ Lead	▪ Lead
– Program Organization	– Advisor	– Advisor
– Key Personnel	– Advisor	– Advisor
– Qualifications	– Advisor	– Advisor
▪ Energy Figure of Merit (EFM)	▪ Lead	▪ Lead

- Friction Brakes:

- a) System Capacity and Control
 1. Verification that system will meet specified brake rates
 2. Verification that system will meet specified duty cycle
 3. Maximum allowable braking disk and pad temperatures
 4. Friction disc and pad wear (expected life)
 5. Verification of power-to-brake, brake-to-power transition times
 6. Description of CPU/Controller timing arrangement verifying sufficient CPU/Controller margin to perform all required control and interface tasks.
- b) Overall System Arrangement
 1. Configuration (number and location of electronic control units, actuator units, brake disks, etc.)
 2. Interface with vehicle controls
 3. Brake force modulation method (linear, stepped), resolution, accuracy
 4. Diagnostics concept
 5. Verify proper operation of all system components with the specified environmental conditions, including roof, undercar, and interior temperatures absent HVAC (lack of HVAC must be allowed for in the design)
 6. Selected hydraulic fluid type and maximum operating temperature, as applicable
 7. Brake disk type (solid, split, segmented, etc.), material, size, mounting and removal methods
 8. Service brake caliper, including configuration (floating, fixed, etc.), number of pistons, brake pad removal process, etc.
- c) Parking Brake
 1. Procedure for manual release of parking brake for towing
- d) Safe Braking Concept
 1. Failsafe blend
 2. Failsafe commands
- e) Load Leveling System Feedback
 1. Control methods and accuracy, response to load changes, effect on suspension operation

Technical Evaluation Protocols

Consistent Scoring Methodology



Objective Process

- Scored technical criteria are subdivided into more than 20 scored sub-criteria, all linking back to the score sheets
- Sub-criteria are further subdivided into more than 500 individually verified and evaluated sub-sub-criteria

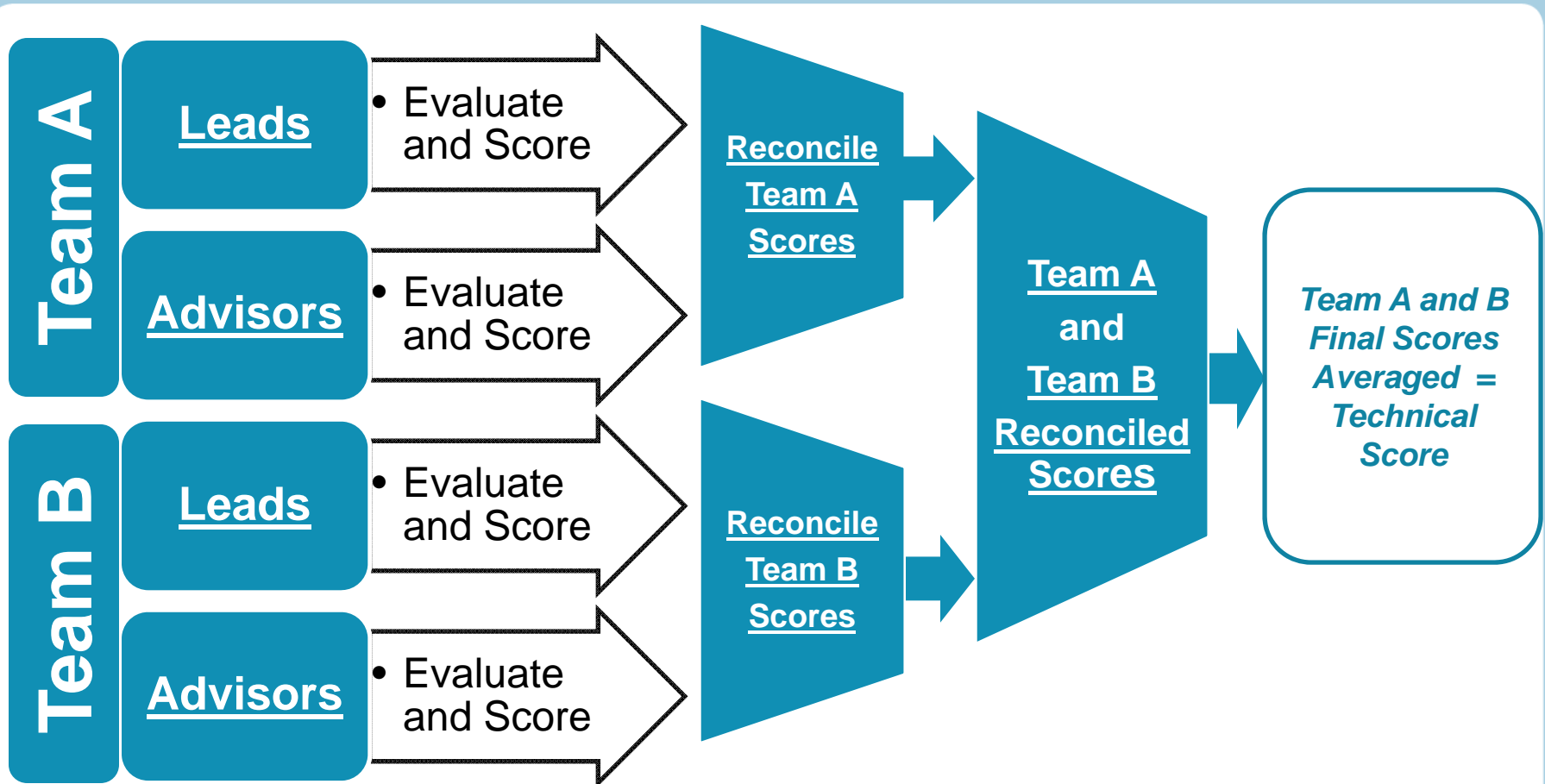
Structured and Organized

- Detailed evaluator guidelines (over 300 pages) provide one-to-one correspondence back to the technical evaluation criteria and sub-criteria, as well as to the sub-sub-criteria

...number
...date
e) Available reliability data
5. Theory of operation of the Subsystem, containing sufficient detail to describe the Subsystem and how it is integrated into the other systems on the Vehicle.
6. Description of the mechanical and electrical design characteristics of the Subsystem. Provide an estimated weight of a component.
7. Specific details related to any Standards and Regulatory requirements, including the Federal Railroad Administration (FRA), California Public Utilities Commission (CPUC), Public Transit Association (APTA), Institute of Electrical and Electronics Engineers (IEEE), American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), American Society for Testing and Materials (ASTM), and other applicable standards.
8. Description of the maintenance requirements, including the preventive maintenance intervals, estimated worker hours to complete, and any special handling instructions.
9. A single comprehensive table listing all of the estimated weights. The table shall include the Component.

Technical Evaluation Protocols

Consistent Evaluator Scoring and Score Reconciliation Processes



Price Evaluation



- **Price Subcommittee opened Price Proposals and applied the following scoring formula:**

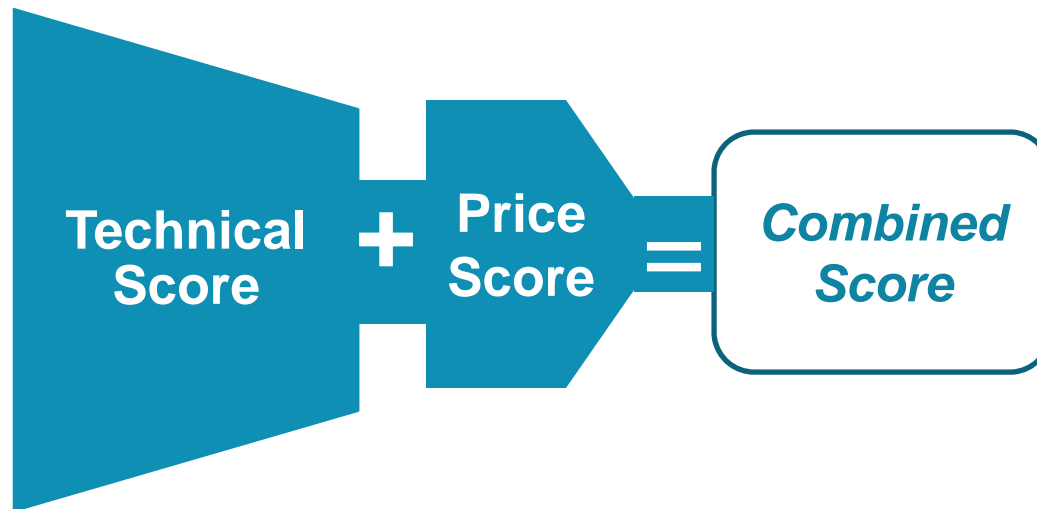
$$\frac{\text{Lowest Adjusted}^* \text{ Proposal Price}}{\text{Proposer's Adjusted}^* \text{ Proposal Price}} \times 33 \text{ (Maximum Price Points)} = \text{Proposer's Price Score}$$

* Adjusted in accordance with the District's Buy America Bid Preference Policy for Federally Funded Rolling Stock Procurements (For each 1% over 60%, 0.25 % price credit for evaluation purposes only)

Price and Technical Scores Combined



- **Evaluation Subcommittees assigned a combined score to each responsive and acceptable BAFO Proposal:**



- **The Proposer receiving the highest combined score is being recommended for award**

Proposers' Initial Scores and Prices



	ALSTOM*	BOMBARDIER*	CAF	CSR	ROTEM*
Technical Score	42.80	46.91	18.73	6.24	29.10
Price Score	33.00	31.55	30.09	30.34	30.56
Combined Score	75.80	78.46	48.82	36.58	59.66
Initial Price (rounded)	\$1.895B	\$1.983B	\$2.078B	\$2.062B	\$2.046B

* Shortlisted

Proposers' BAFO Scores



	ALSTOM	BOMBARDIER	ROTEM
Technical Score	41.39	46.70	30.05
Price Score	31.83	33.00	18.43
Combined Score	73.22	79.70	48.48

Proposers' BAFO Prices (775 Cars)



	ALSTOM	BOMBARDIER	ROTEM
BAFO Price	\$1,727,025,189	\$1,543,192,904	\$2,791,394,850
Variance from Low Price	+\$183,832,285	Low Price	+\$1,248,201,946

Proposers' Prices with Buy America Bid Preference



CARBUILDER (% Domestic Content)	ALSTOM (95%)	BOMBARDIER (66%)	ROTEM (70%)
BAFO Price	\$1,727,025,189	\$1,543,192,904	\$2,791,394,850
Value of Buy America Adjustment	\$151,114,704	\$23,147,893	\$69,784,871
Adjusted Price*	\$1,575,910,485	\$1,520,045,011	\$2,721,609,979

* Adjusted in accordance with the District's Buy America Bid Preference Policy for Federally Funded Rolling Stock Procurements for evaluation purposes only

Recommendation



- **Of the three BAFO Proposals Bombardier had the highest combined score:**
 - Lowest price (i.e., highest price score)
 - Highest technical score
- **An award can only be made to the proposer with the highest combined score**
- **The low price dramatically increases the probability that the District will be able to fully fund all 775 vehicles**

Total Program Budget – 775 Cars



	Average Per Car	Total Project Cost	Percent of Total Project Cost
Contract Cost	\$2,398,452	\$1,858,800,000	72.5%
Project Management and Engineering Cost	\$192,089	\$148,868,760	5.8%
Contingency	\$300,942	\$233,230,214	9.1%
Escalation	\$415,615	\$322,101,026	12.6%
Total	\$3,307,097	\$2,563,000,000	

Contract Economies of Scale (Minus Sales Tax and Contingency)



	Proposal Car Price	Average Per Ordered Car Price
Base Contract (260 Cars)	\$2,425,010	\$2,425,010
Option 1 (150 Cars)	\$1,772,214	\$2,186,182
Option 2 (150 Cars)	\$1,772,214	\$2,075,298
Option 3 (115 Cars)	\$1,772,214	\$2,023,662
Option 4 (100 Cars)	\$1,772,214	\$1,991,217

MTC/BART Resolution Funding Plan (669 Cars)



(\$ Millions)

	# Cars	MTC	BART	Total
Phase I	200	\$871	\$155	\$1,026
		85%	15%	100%
Phase II	469	\$1,545	\$651	\$2,196
		70%	30%	100%
Total	669	\$2,416	\$806	\$3,222
		75%	25%	100%

Competitive Bidding: Cost Savings



(\$ Millions)

	MTC (75%)	BART (25%)	VTA	Total
669 (BART Replacement Fleet)	\$2,416	\$806	\$0	\$3,222
715 (BART Fleet + Expansion)	\$1,761	\$587	\$0	\$2,348
Savings	\$655	\$219	N/A	\$874 (+ 46 Cars)
60 (VTA Cars)	\$0	\$0	\$215	\$2,563

MTC/BART Funding – 410 Cars



(\$ Millions)

	# Cars	MTC (75%)	BART (25%)	VTA	Total
Phase 1	200	\$610	\$99		\$709
Phase 1 (VTA)	60			\$215	\$215
Option 1	150	\$261	\$199		\$460
Total	410	\$871	\$298	\$215	\$1,384

BART Funding



(\$ Millions)

	Base + Option 1 (410 Cars)	Remaining Options (365 Cars)	Total
BART Banked	\$22.4	----	\$22.4
Proposed FY13 Budget	<u>\$45.7</u>	----	<u>\$45.7</u>
Subtotal	\$68.1		\$68.1
Proposed Annual Operating to Capital Allocation (~\$45m/yr) -or- Other Funding Sources	\$229.9 (5.1 yrs)	\$289.1 (6.4 yrs)	\$519.0
Total	\$298	\$289.1	\$587.1

Next Steps



- Board Authorization for Award
- Contract Execution
- Notice to Proceed
- First pilot car delivered
- Pilot train into revenue service
- *Berryessa opening*
- *First production train in revenue service*
- *60th car in revenue service*
- Option deadline (FTA 5 year rule)
- 410th car delivered
- 775th car delivered
- Contract close-out

May 10, 2012
Jun 4, 2012
Jun 27, 2012
Mar 2015
Oct 2015
Aug 2016 - Jun 2018
Jan 2017
May 2017
Jun 2017
Apr 2020
Apr 2023
May 2028