

# Metropolitan Transportation Commission Programming and Allocations Committee

September 10, 2014

Item Number 5c

## BART Railcar Procurement Project Status Update

**Subject:** BART staff will provide an update to the Committee on the status of the BART Railcar Procurement Project, which will replace and expand BART's fleet.

**Background:** The BART Railcar Procurement project will replace and expand BART's current railcar fleet at an estimated cost of approximately \$2.9 billion. Through the Phase 1 Funding Plan (MTC Resolution 4126, December 2013) and the Core Capacity Challenge Grant Program (MTC Resolution 4123, December 2013) the Commission has made policy-level commitments of approximately \$2.0 billion in federal and regional funds toward the cost of 873 cars – 669 to replace the current fleet, 60 for the Berryessa extension (funded by VTA under a separate agreement with BART), 30 for the Warm Springs extension, 23 for the San Jose/Santa Clara extension, and 91 for capacity expansion. The funding sources for the project are summarized in the table below.

### BART Car Procurement Funding Summary - 873 Cars

\$ millions, Year of Expenditure

Agency	Source	Phase 1 Funding Plan	Core Capacity Challenge Grants	Total
MTC	Federal Formula Funds	\$ 871	\$ 743	\$ 1,614
	Other Regional Funds		385	385
	Subtotal	871	1,128	1,999
BART	BART Funds	158	393	551
	High Speed Rail	140		140
	Subtotal	298	393	691
VTA	VTA Funds	215		215
Total		\$ 1,384	\$ 1,521	\$ 2,905

BART staff will provide an update on the railcar project including the status of the procurement, and car design features.

**Issues:** None.

**Recommendations:** None; informational item.

**Attachments:** BART New Vehicle Procurement presentation.



# New Train Car Procurement



MTC Programming and Allocations Committee  
September 10, 2014

Morelli Designers Team



## Project Background

- ❑ Majority of BART cars are now over 40 years old. New cars are on order to avoid future breakdowns and delays, meet growing demand, and reduce crowding on the BART system.
- ❑ Contract 40FA-110 for the procurement of 775 train cars was awarded on May 30, 2012. Notice to Proceed for all options have been exercised.
  - 669 train cars for replacement of the existing fleet.
  - 60 train cars for expansion to Berryessa.
  - 46 train cars to relieve crowding and grow capacity.



# Budget Forecast

(Fed-MTC / State / BART / VTA Funding)

Description	Expended ITD	Cost to Complete	Forecast at Completion (775 Cars)
<b>New Car Procurement Contract</b>	\$223,939,385	\$1,659,324,152	\$1,883,263,537
<b>Design Engineering &amp; Inspection Consulting Services</b>	\$14,578,590	\$50,452,119	\$65,030,709
<b>Direct Purchase Material /Misc. Expenses</b>	\$669,560	\$10,502,313	\$11,171,873
<b>BART Engineering, Project Management, and Testing</b>	\$10,291,292	\$62,119,466	\$72,410,758
<b>Escalation</b>	\$38,920	\$228,311,415	\$228,350,335
<b>Subtotal</b>	<b>\$249,517,747</b>	<b>\$2,010,709,464</b>	<b>\$2,260,227,211</b>
<b>Reserve</b>	\$0	\$323,772,789	\$323,772,789
<b>Total</b>	<b>\$249,517,747</b>	<b>\$2,334,482,253</b>	<b>\$2,584,000,000</b>



## Future New Car Procurement Base and Option Scenarios

- ❑ FTA has denied the District's request to add options to Contract 40FA-110.
- ❑ Funding not identified for expanded fleet in Planning Scenarios.

	Replace	Berryessa (SVBX)	Existing Order	10 car TBT	Frequency Improvements (new train control)	San Jose/Santa Clara (SVSX)
Need	669	60	46	75	231	80
Total	669	729	775	850	1081	1161



# Schedule

Milestone	Approved Schedule	Current Forecast	Actual	Status
Award of Contract	N/A	N/A	5/30/2012	Complete
Complete Conceptual Design Phase	3/28/13	6/1/13	6/1/13	Complete
Complete Preliminary Design Phase	10/3/13	10/3/13	10/3/13	Complete
Complete Final Design Phase	9/30/14	9/30/14		In Progress
Complete Pilot Car Delivery	8/25/15	8/25/15		In Progress
Commence Revenue Service	1/31/17	1/31/17		Not Started
Complete Delivery (Base Contract)	9/21/18	9/21/18		Not Started
Complete Delivery (Option 4)	3/29/19	3/29/19		Not Started
Complete Delivery (Option 1)	1/9/20	1/9/20		Not Started
Complete Delivery (Option 2)	10/28/20	10/28/20		Not Started
Complete Delivery (Option 3)	9/27/21	9/27/21		Not Started
Complete Warranty 775th train car	10/27/25	10/27/25		Not Started



## Project Accomplishments

- ❑ Commenced First Article Customer Inspection (FACI) and Qualification testing at the subsystem level.
- ❑ Conducted monthly DBE development workshops.
- ❑ Completed initial end frame crash test.
- ❑ Completed preliminary track geometry test report.
- ❑ Completed undercar temperature simulation review.
- ❑ Completed mock-up public outreach events (21 events in total).
- ❑ Commenced car shell manufacturing for pilot cars.
- ❑ Commenced truck manufacturing for pilot cars.



## Planned Activities Next Quarter

- Continue FACIs and Qualification Test at subsystem level.
- Conduct cab ceiling temperature test.
- Continue DBE development.
- Set up site inspections at final assembly plant.

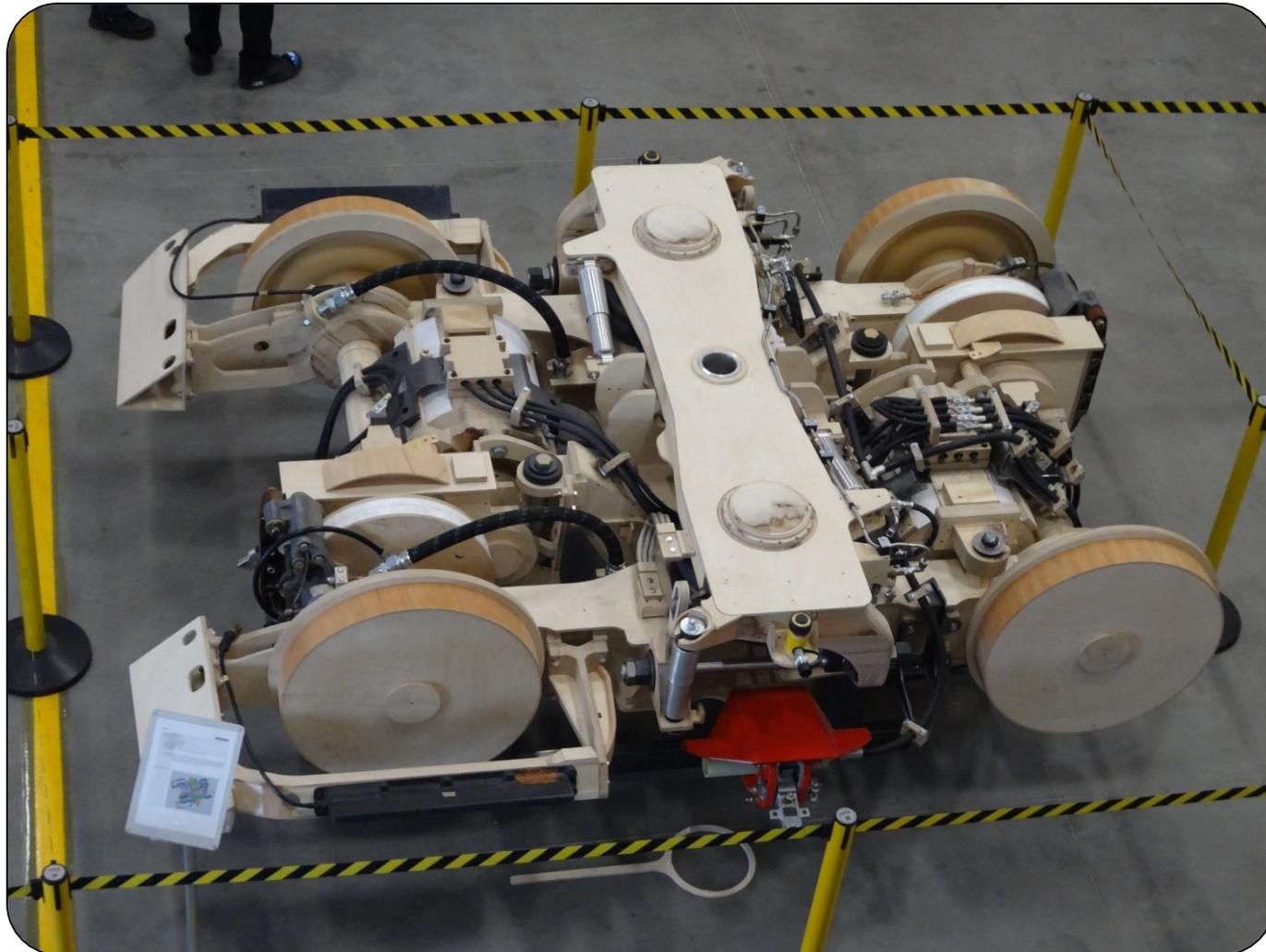


# Cab Mock-up





# Truck Mock-up





# Public Outreach – 35,000 participants, 21 events



Initial Model  
MacArthur  
July 2013

Final Model  
Embarcadero  
April 2014





## You Spoke, We Listened (Examples)

1. Interior LCD screens and automated announcements, and exterior LED signs with line color to help people navigate the system.
2. Three doors per side to make it faster and easier to get on and off the train.
3. Microplug doors to help seal out the noise and provide a quieter ride.
4. Improved cooling distribution making it more comfortable for standees on hot days.
5. Easy to keep clean, wipeable seats and floors.
6. More handholds – poles and straps – to provide something to hold onto.
7. Seat choice – dimensions, foam density, lumbar support. Wider aisles.
8. Higher seats make it easier to get up and sit down, and room underneath for carry-on luggage.
9. More senior/disabled seating, and a different color to remind people to yield these seats to those who need them.

More info at [bart.gov/cars](http://bart.gov/cars)



## You Spoke, We Listened (Examples)

1. Added legroom at L-shaped seat configurations.
2. Removed center armrests to better accommodate larger people
3. Add armrests on seats next to doors as a safety measure.
4. Removed flip down seats from bicycle area to remove potential for conflict.
5. Increased various knuckle, arm, and head clearances.
6. Will lower the bright, contrasting decal on tripod poles.
7. LCD screen improvements – reduced glare, highlighted route and You Are Here bubble.
8. Static plus flashing mode for end door LED's.
9. Will move intercom lower for wheelchair users.
10. Braille for blind customers.

More info at [bart.gov/cars](http://bart.gov/cars)



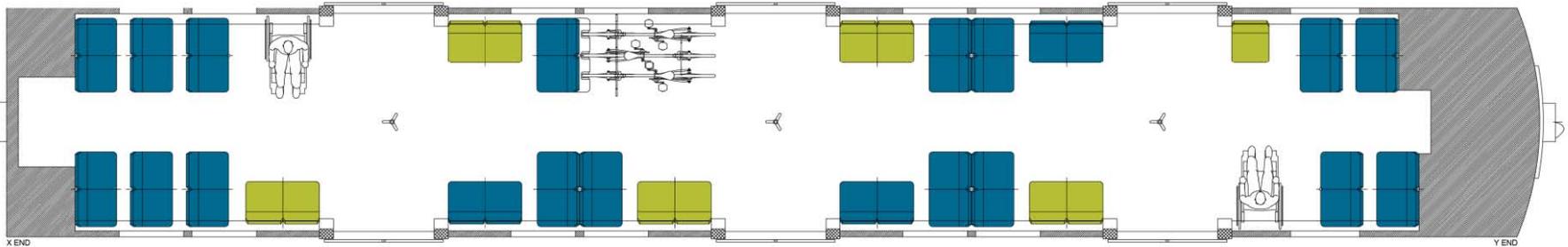
# Interior Design



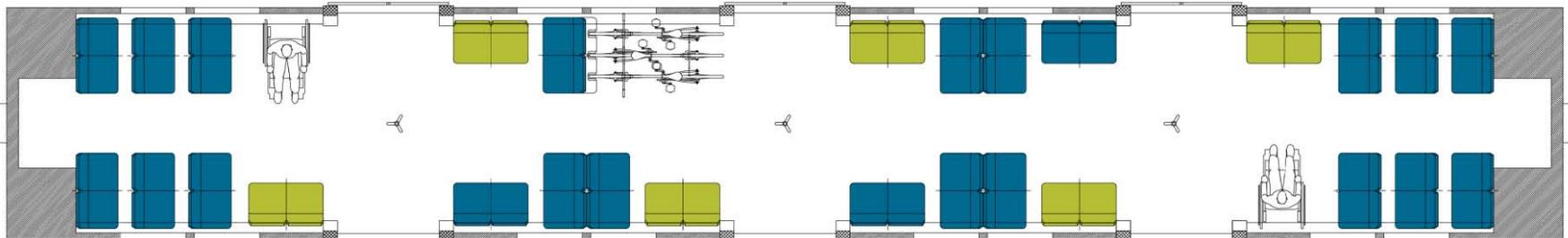


# Space Plan

## Cab Car: 51 Seats



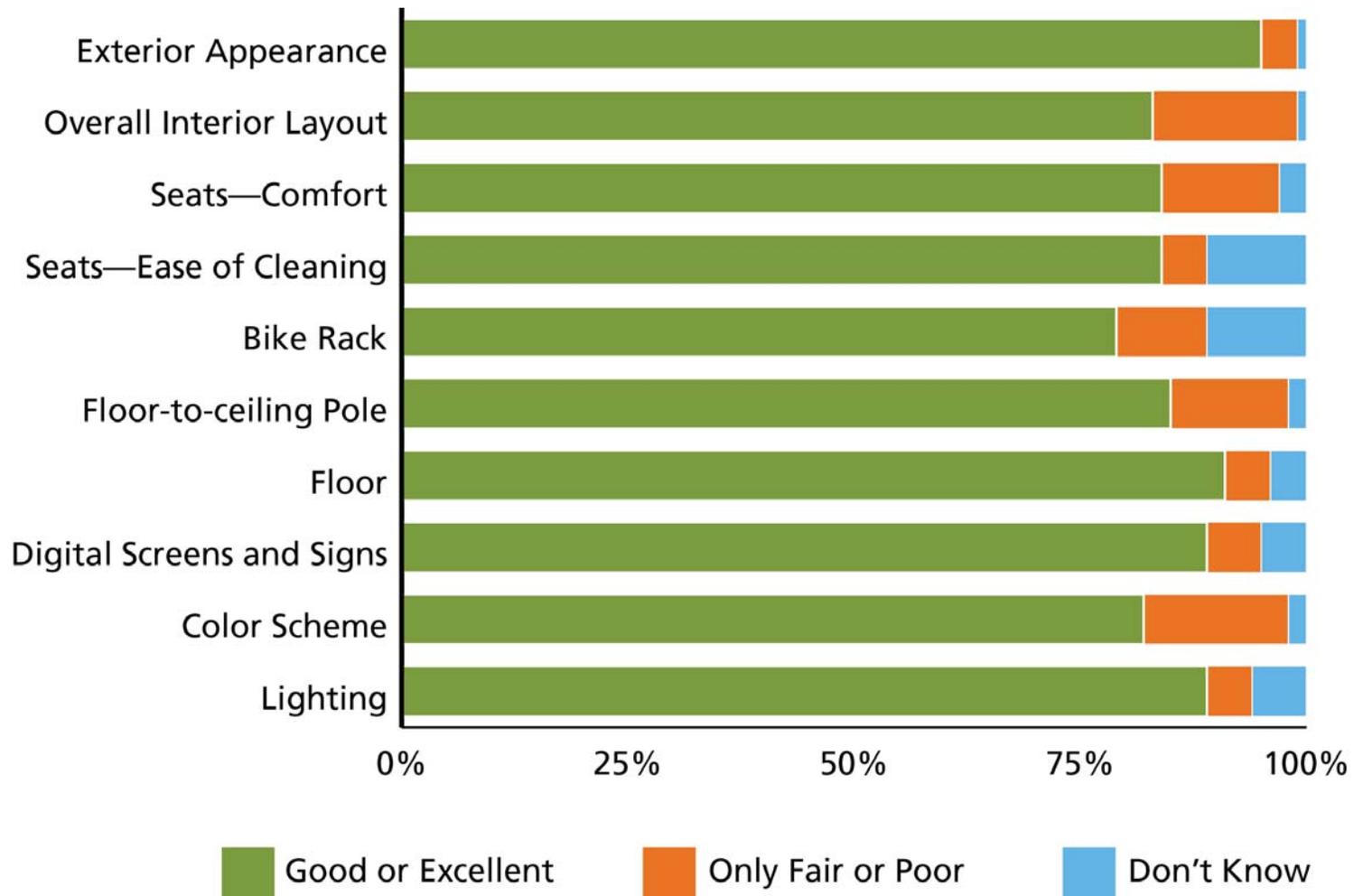
## Other Cars: 56 Seats



BART Board voted on the interior design configuration of the 10 pilot train cars (6 E-Cars and 2 D-Cars with offset poles, and 2 D- Cars with end poles and bike racks removed).



# Train Car Model Positive Survey Results





## Tripod Pole

- Supported by 82% of seniors and 72% of people with disabilities. Valued by people with balance or mobility issues to provide a reachable, ergonomic and stable hand-hold when the train lurches during acceleration and deceleration.
- But a portion of people with disabilities have expressed concerns.





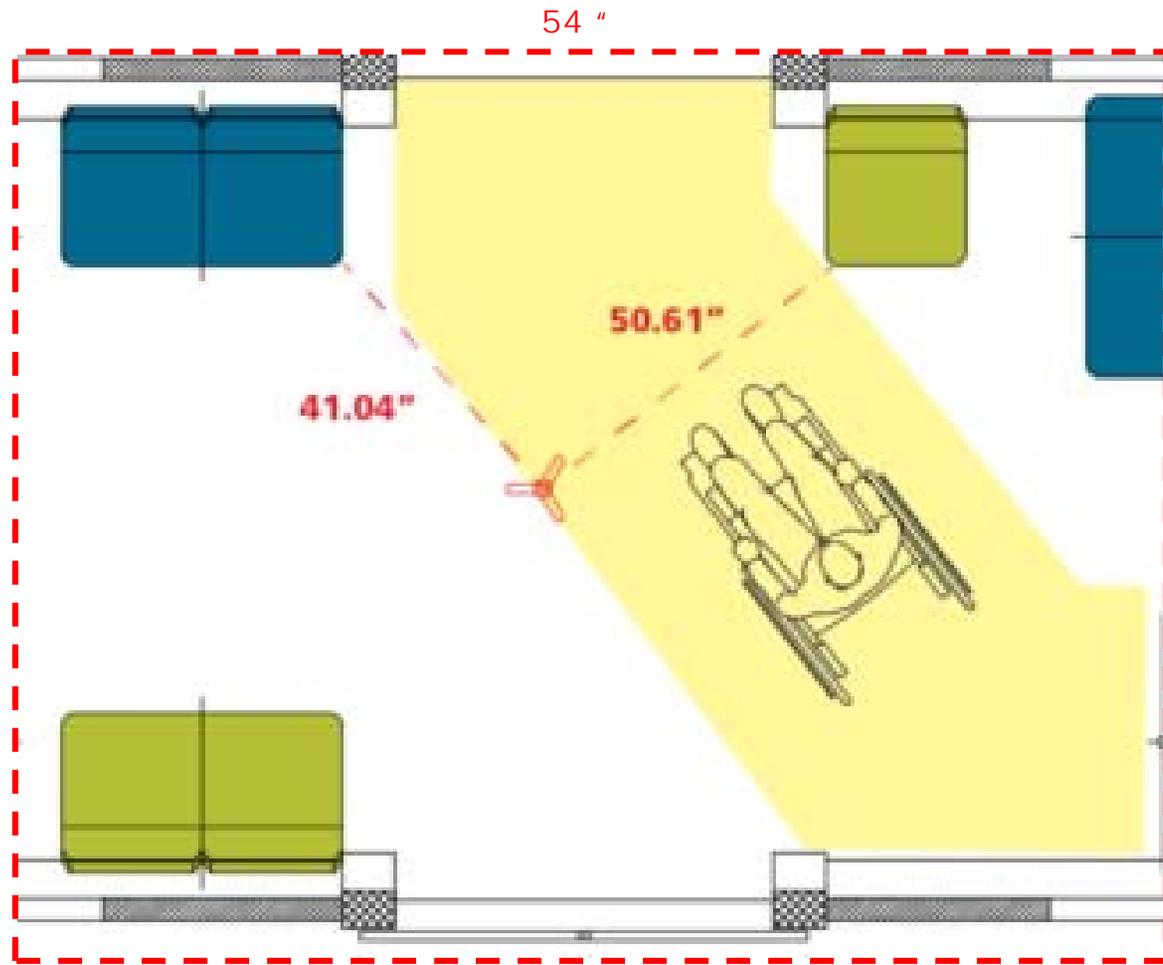
## Modifications To Address Concerns

Based on discussions with the accessibility community, there are six steps BART is taking to address concerns, while still keeping the pole for seniors and people with disabilities who feel they need it:

1. Pole offset by 6 inches. Creates approximately 50.6 inch wide accessible path. Exceeds ADA standard and almost as wide as 54 inch door opening.
2. Wheelchair symbol embedded in floor
3. Pole marked with high contrast decal
4. BART commitment to a Clear The Path communications campaign
5. First ten pilot cars will include two cars without a pole - to be tested in 2016
6. BART has set goal of increasing fleet size to at least 1,000 train cars to relieve crowding on BART.



# Accessible Path





# Fleet of the Future



**Questions?**