Fleet of the Future Design Update

January 2014

Purpose

- Share public comment with the Board
- Preview the design that will appear in the final train car model.
  - The purpose of the final model is to re-confirm design elements that were based on previous public input.

Board Directive For Robust Public Outreach Process

***From* Reuters:**

"In an inspired, yet practical move, BART's Board of Directors have decided that the design should be informed by the riding public. Those who use the BART train system can give their input on their needs by visiting BART.gov."

From BART customers:

"Great idea to ask for public input"

"Process to receive input during design phases was good"

"I appreciate the public's input being utilized"

Public Input

Train Interior Model

Prototype Seats

Over 17,500 customers provided input so far.

Topics

1. Overall Interior
2. Seats
3. Armrests
4. Tripod Poles
5. Color
6. Digital Screens
7. Bike Rack Area/Flip-Down Seats

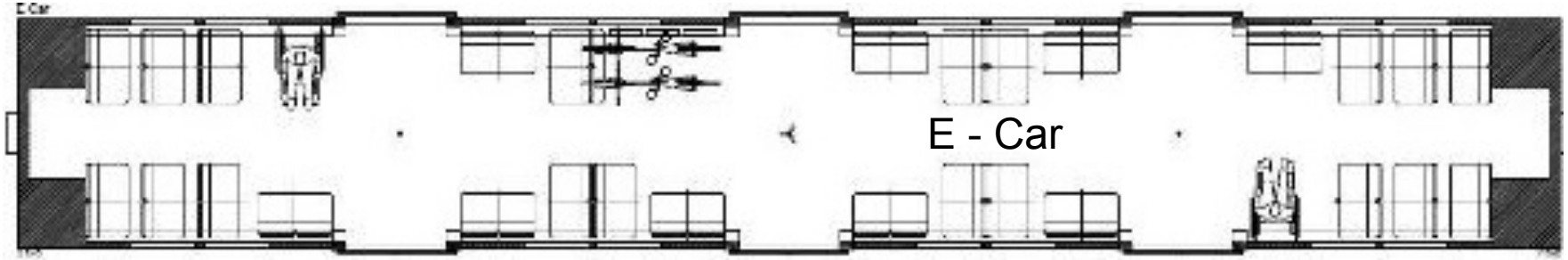
Overall Interior

Excellent	32%
Good	53%
Only Fair	12%
Poor	1%

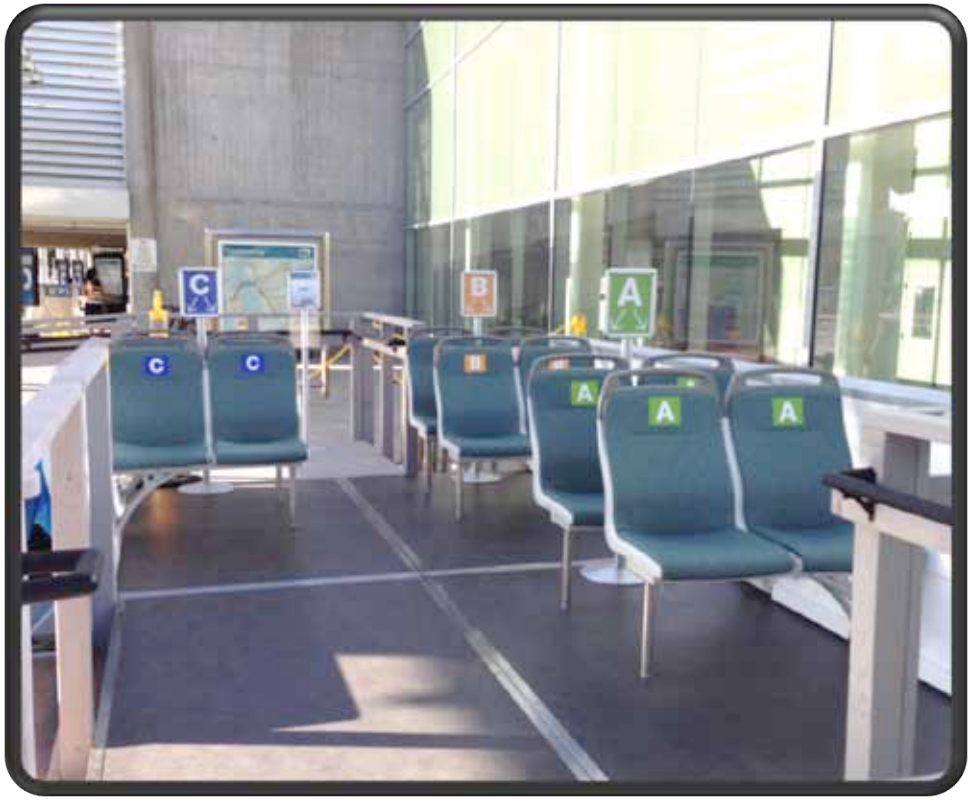
MacArthur model research sessions, N=116

"I like that it seems more open than the current cars, especially the aisles"

"The interior seems more spacious"



Seats



Features

- Easy to clean, wipeable
- Silicone cushions that retain shape longer
- Room underneath for carry-on luggage
- 74% recyclable
- Lightweight – less energy to move the train
- Made in the USA

Seat Feedback

"I like the material being used. I feel it will be easier to maintain for longevity & cleaning/health."

"The lower back curve on the seats is a great idea that can improve comfort levels greatly."

"I like the firmness of new seats. The current ones are too soft."

"Would look for more cushioned seats, better absorb the shocks or bumps on the ride."

"Use the same style & material as the vinyl seats on the old ones, these new seats are too hard on my bottom."

Medium Density Cushion Preferred

	Formal Research results	Open House results
Excellent	20%	34%
Good	49%	42%
Only Fair	28%	18%
Poor	3%	5%
	N=187	N=2,316

Seat Caveats and Plan

Caveats:

- Materials were not final production quality
- Did not test on moving BART train

Plan:

- Proceed with the medium density foam bottom cushion and contoured seat back that offers lumbar support.
- Confirm the seat design during the final train car model, pilot stage, and eventually in revenue service

(note: any resulting changes would have cost and schedule implications).

Armrests

Yes	34%
No	48%

Prototype seat research sessions, N=187

+	**Increases perception of personal space**
+	**Helps some passengers stand up by providing a surface to push up against**
-	**Limits ability to slide over from aisle seat to window seat**
-	**Limits seating flexibility for families and individuals who need extra space**

Armrest Plan

- Based on public feedback, remove armrests for the final train car model.
- Substitute spacers between the seats as an alternate way to accentuate sense of personal space.

Tripod Poles

Excellent	62%
Good	27%
Only Fair	4%
Poor	3%

MacArthur model research sessions, N=116

"I think it makes the BART ride itself safer. When it comes to a stop or sometimes there's a jolt or something, there's something for people to hold on."

"Currently, there's nothing for me to hang on to when cars are full . . . I'm a senior and it's easier for me to lose my balance now."

"Pole in the middle between the doors seems like it could be in the way of people with wheelchairs"

Tripod Pole Plan

- Offset pole away from wheelchair area to create a wide path (49 inches)
- Educate customers to clear a path for wheelchair users
- Embed wheelchair symbol in the floor to keep wheelchair area clear

Accessible Features

- For customers with **vision** impairments: inter-car barriers, automated announcements, pole markings to improve contrast
- For customers with **hearing** impairments: interior and exterior digital displays, test of induction loop system
- For customers with **mobility** impairments: different-colored priority seating, floor marking for wheelchair areas, seats that are higher off the floor making it easier to sit down and stand up, intercoms located near doors, separate door for bicycles


PRIORITY SEATING

Digital Screens

Interior LCD Screen

Excellent	42%
Good	48%
Only Fair	9%
Poor	2%

2013 on line survey, n=300

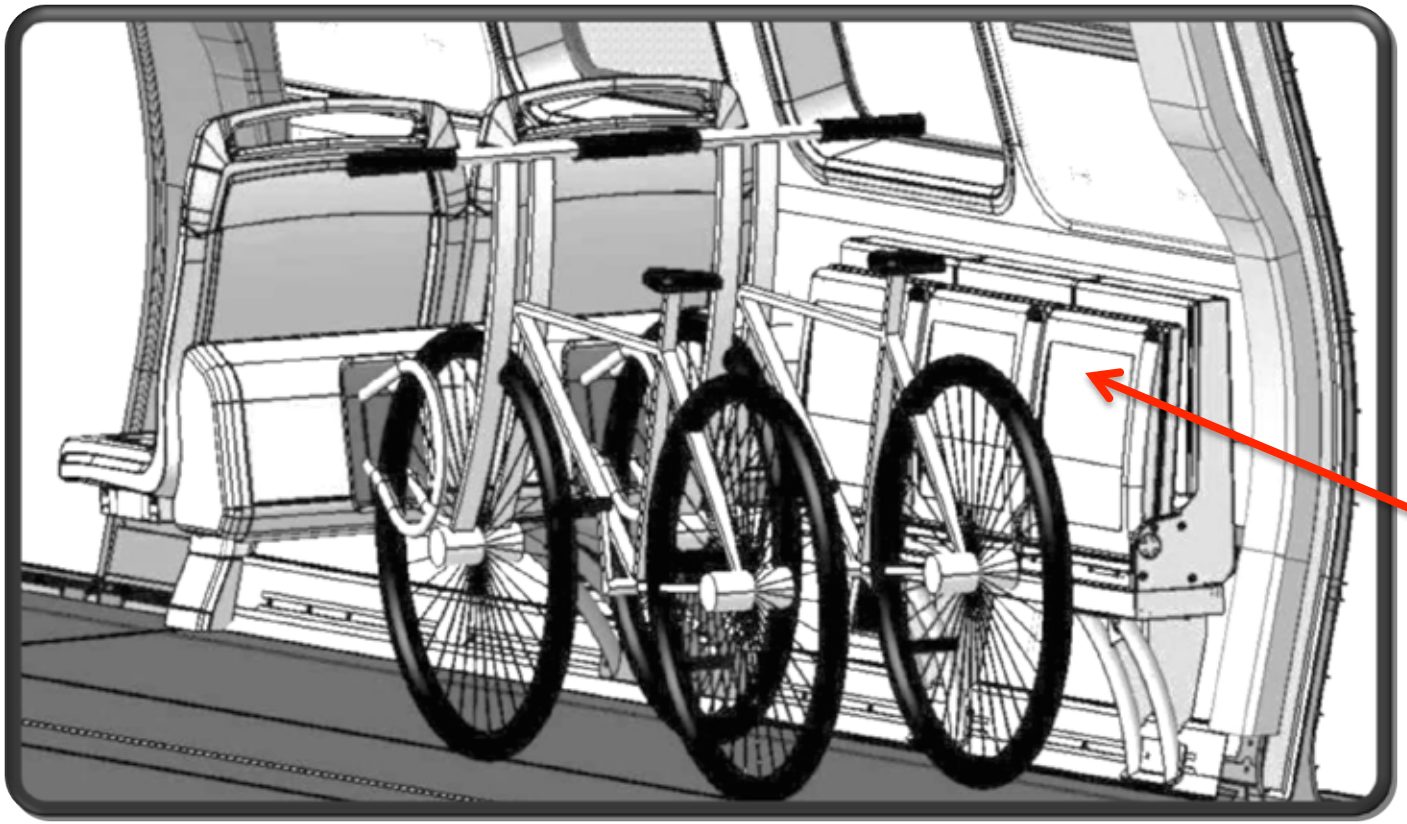
"Please use digital displays and recorded announcements for announcing train stops and train destinations. I can't decipher what the train conductor is saying most times. If using displays, consider multiple languages."

"I think all BART trains need more maps – there should be a map by every door."

Other Features

- **Better circulation** – 50% more doors make getting on and off the train faster and easier
- **Cooler** – cooling systems will distribute air directly to the ceilings, making it more comfortable for standees on hot days
- **Quieter** – microplug doors seal out noise

Bike Racks And Flip Down Seats



Seat Count

	775 Cars		1,000 Cars	
	Without Flip Down Seats	With Flip Down Seats	Without Flip Down Seats	With Flip Down Seats
Avg. Seats Per Car	54	57	54	57
Total Seats In Fleet	41,850	44,175	54,000	57,000
% Change vs Today	+6.7%	+12.6%	+37.6%	+45.3%

Flip Down Seat Plan

- In the final train car model, test a design that removes the flip down seats.
- This option would allow bike racks to do their job of keeping bikes out of the way and not block seats, aisles, and doorways.
- Maintain the goal of 1,000 cars to increase the total number of seats in the fleet.

Next Steps

- Train Car Model – April 2014
- Pilot Cars – June 2015
- First production cars in service – Jan 2017