Electric Multiple Unit Procurement Update

Public Meetings
August / September 2014

Context*

* The proposed project is not yet approved – pending environmental clearance.
Status

- April 2014
  - JPB update on EMU procurement process

- May 2014
  - RFI issued

- RFI Purpose
  - Q & A to support stakeholder dialogue
  - Inform RFP (early 2015)

- June 2014*
  - Industry responses
  - Meetings with car builders

* First industry scan conducted 2008

Engagement

- 11 car builders contacted
- 4 have “Off-the Shelf” models
- 3 participated in June meetings
- Anticipate 2 – 4 car builders to propose on RFP
Meetings with Car Builders

Maximize Car Capacity

- Growing Demand
  - Ridership today: 55,000+
  - Ridership future: 100,000+
- Today
  - 20+ mile trips
  - 95%-125% peak weekday capacity
  - 11% bikes on board
- Future
  - Share train slots with HSR
  - 6 Caltrain / 4 HSR (per hour per direction)
  - Caltrain needs to maximize car capacity / service frequency
Industry Confirmation

- Bi-level EMU Maximizes Capacity (vs. single-level)
- “Off-the Shelf” Available
  - Service proven
  - Saves costs / time
- 22” – 24” Floor Threshold (most common)
- US Regulation Compliance
  - ADA
  - Buy America
  - FRA Waiver / Alternative Compliant Vehicles Criteria
  - Will meet Caltrain Technical and Quality Standards

Discussion Topics
## Consist Length

<table>
<thead>
<tr>
<th>Current</th>
<th>EMU</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| • Push / Pull diesel locomotive  
• 5-car consists | • 6-car fixed consists (two cabs and four intermediate cars)  
• 3-car consists (two cabs and one intermediate car that can couple into 6 car consist)  
• Mix of 3-car and 6-car consists | • Conductor ability to walk through train between stations  
• Shorter trains for off-peak service (reduced energy consumption and O&M costs)  
• Reduced seating capacity in cabs |

## Seats / Standees

<table>
<thead>
<tr>
<th>Current</th>
<th>EMU</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| • 620 – 680 seats per train  
• Limited standing room on gallery cars  
• One gallery car per train ADA accessible  
• Lifts for bombardier cars | • Seat size / configuration flexibility  
• Handholds / leaning benches for standees  
• Full ADA accessibility | • Seat widths  
• Space between seats  
• Seat orientation  
• Balance with other amenities  
• Loading standard changes |
### Bikes on Board

<table>
<thead>
<tr>
<th>Current</th>
<th>EMU</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 2 of 5 cars hold bikes</td>
<td>• Concepts vary by car builder</td>
<td>• Balance seats and bikes on board</td>
</tr>
<tr>
<td>• 48 bikes per bombardier train</td>
<td>• Car builders can design areas based on current bike capacity</td>
<td>• Wayside facilities</td>
</tr>
<tr>
<td>• 80 bikes per gallery train</td>
<td></td>
<td>• Need to comply with safety and ADA requirements</td>
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<tr>
<td>• Bike riders and other passengers sit in bike cars</td>
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<tr>
<td>• Displace 2 seats</td>
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### Bathrooms

<table>
<thead>
<tr>
<th>Current</th>
<th>EMU</th>
<th>Considerations</th>
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</thead>
<tbody>
<tr>
<td>• 2 per gallery train</td>
<td>• Modular bathroom units available</td>
<td>• Public bathrooms at 2 of 27 stations</td>
</tr>
<tr>
<td>• 5 per bombardier train</td>
<td>• Compliant with ADA requirements</td>
<td>• Average trip 20 to 28 miles</td>
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<tr>
<td>• Annual maintenance costs</td>
<td></td>
<td>• Average trip 30 to 50 minutes</td>
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<tr>
<td>• Displaces 8+ seats</td>
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</tbody>
</table>

Other systems: ACE 1 bathroom per car
Capitol Corridor 1 – 2 bathrooms per car
BART 0 bathrooms per car
Station Platform Implications

Background

- Previous Platform Discussions
  - JPB October 2013: level boarding

- Current Status
  - No level boarding: impacts dwell time and on-time performance
  - 8” above-top-of-rail (ATOR) platforms
  - Passenger trains 1st step at 18” ATOR
  - Use mini-highs and lifts
  - Supports freight and passenger cars
Moving Forward

- Dedicated Platforms
  - Capitol Corridor, ACE at 2 stations and Amtrak at 1 station
  - HSR dedicated platforms at 3 stations

- Different Caltrain EMUs and HSR trains
  - Customer needs / performance needs / cost
  - HSR floor threshold ~50” ATOR
  - Caltrain EMU floor threshold ~25” ATOR

- EMUs Compatible with Existing System
  - 8” platforms
  - Current diesel fleet (for interim mixed-service)
  - Future 25” level boarding

Challenges for Level Boarding

- Conflicting CPUC and ADA requirements
  - CPUC: distance between platform and trains
  - ADA: maximum 3” gap and 5/8” vertical difference between platform and trains
  - Need to get waiver from CPUC

- Potential impact to historic stations
- Construction challenges in operating system
- Transitional service
- Funding
# Stakeholder Outreach Process

## Stakeholders

<table>
<thead>
<tr>
<th>Boards/Elected Officials</th>
<th>Advisory Committees</th>
<th>Customers</th>
<th>Local Agencies and Funders</th>
<th>Advocacy Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Joint Powers Board</td>
<td>• Citizen Advisory Committee</td>
<td>• Workers</td>
<td>• City / County Staff Coordination Group</td>
<td>• Friends of Caltrain</td>
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<tr>
<td>• Local Policy Maker Group (LPMG)</td>
<td>• Bicycle Advisory Committee</td>
<td>• Residents</td>
<td>• Peninsula Corridor Working Group</td>
<td>• Chambers of Commerce / Business Organizations</td>
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<tr>
<td></td>
<td>• Caltrain Accessibility Advisory Committee</td>
<td>• Visitors</td>
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<td>• Neighborhood Groups</td>
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<td></td>
<td></td>
<td>• Students</td>
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<td>• Advocacy Groups</td>
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</tbody>
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Note: Communications through meetings, website, press release, social media and CalMod E-Newsletters, Caltrain station tabling, onboard info, electronic surveys
Outreach – 2 Phases

<table>
<thead>
<tr>
<th>Shell: Structural Size / Capacity</th>
<th>Interior: Aesthetic / Comfort</th>
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<tbody>
<tr>
<td>• Consist Configuration</td>
<td>• Seat size / Spacing</td>
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<tr>
<td>• Seats / Standees</td>
<td>• Internal Material</td>
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<tr>
<td>• Bikes on Board</td>
<td>• External Color / Branding</td>
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<tr>
<td>• Bathrooms</td>
<td>• Bikes on Board Configurations</td>
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<td>• Passenger Amenities</td>
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EMU Input Milestones

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<td>Issue RFI</td>
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<td>Meetings with Builders</td>
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<td>Phase I Outreach</td>
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<td>Develop / Issue RFP</td>
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<td>Select Car Builder</td>
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<td>Phase II Outreach</td>
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Q & A

- website: [www.caltrain.com/emu](http://www.caltrain.com/emu)
- comments or questions: [caltrainemu@caltrain.com](mailto:caltrainemu@caltrain.com)