



CalMod Program EMU Procurement Update

Board of Directors
May 7, 2015
Agenda Item 7a



Key Discussion Items

- Original Plan
- Alternative Plan
- Two Timeframes
 - 2020 electrified service
 - Future blended service (with level boarding)

Note: Board Workshop May 20th Discussion



Caltrain

Goal: Maximize Caltrain Capacity

- Growing Demand
 - Weekday ridership today: 60,000+
 - Weekday ridership future: 110,000+
- Today
 - 20+ mile trips
 - 95%-125% peak weekday capacity
 - 11% bikes on board
- Future
 - Share train slots (6 Caltrain / 4 HSR) per hour / direction

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The slide features a red vertical bar on the left side. The background is a blurred image of a train. The Caltrain logo is in the top left corner. The title 'Goal: Maximize Caltrain Capacity' is centered. Below the title is a bulleted list. A small number '4' is in the bottom right corner.



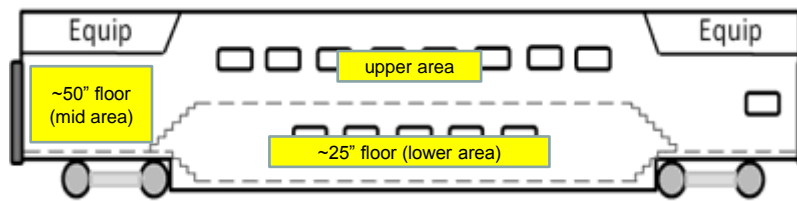
Exceeding Capacity Today



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Terminology



Platform 8" Above Top of Rail (ATOR)



Double Door



Single Door

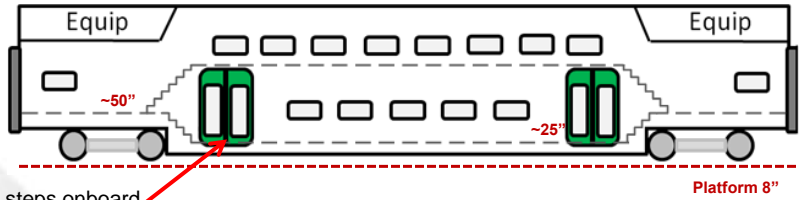
- Caltrain EMU Floor ATOR: 22" - 25" (for this presentation ~25")
- HSR Train Floor ATOR: 48" - 51" (for this presentation ~50")

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Original Plan

Timeframe: 2020 Electrified Service



1-2 steps onboard

Platform 8"

- 2 double doors (located: ~25" floor)
- Passengers step (1-2) from platform
- ADA passengers and bikes located ~25" level
- ADA use mini highs and wayside lifts

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Similar to Today's Bombardier



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Request for Information

Summer 2014

Attributes	Industry Confirmation
Maximize Capacity	<ul style="list-style-type: none"> • Bi-level (versus single level)
Previously Made	<ul style="list-style-type: none"> • Service proven options • Saves costs / time
US Regulation Compliance	<ul style="list-style-type: none"> • ADA • Buy America • FRA Waiver / Alternative Compliant Vehicles Criteria • Meet Caltrain Technical / Quality Standards
Floor Threshold	<ul style="list-style-type: none"> • 2 double doors per car (low level boarding) • ~22" to ~25" most common

Note: Anticipate adequate competition for the RFP

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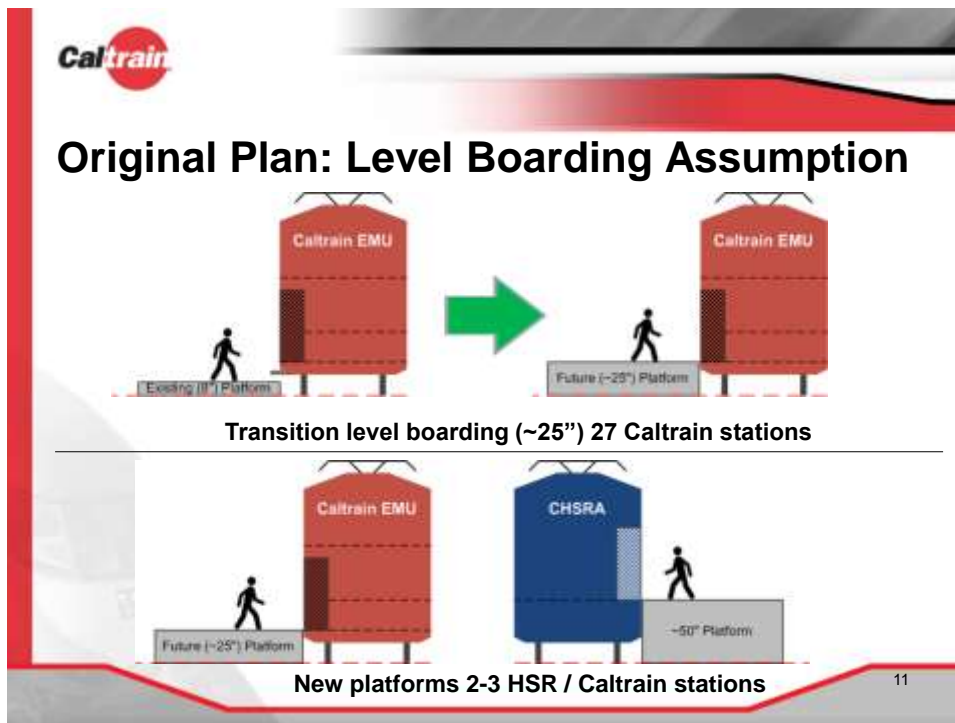
Original Plan

Timeframe: Future Blended (with level boarding)

- 2 – 3 HSR/Caltrain Stations w/ New Platforms
 - Transbay Transit Center, Millbrae, Diridon
 - HSR at ~50"
 - Caltrain at ~25"
- 27 Caltrain Stations with Modified Platforms
 - Level boarding at ~25"
 - Remove / fill-in steps in cars
 - Longer EMU trains and extend platforms



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Request for Vehicle Modification

- HSR vehicles high door boarding (~50")
- Can Caltrain EMUs be modified to support high door boarding?
- Enables common platforms in future
 - Caltrain & HSR access to all platforms
- Provides system operational flexibility
 - Regular incident recovery
 - Emergency / disaster recovery

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Analysis Process

- December 2014 to May 2015
 - Carbuilder interviews w/ HSR
 - Technical analysis w/ HSR
- Caltrain operational assessment
- May 2015 – July 2015
 - Policy discussion / decisions
 - Boards
 - Stakeholders

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Car Builder Interviews

- Seven car builders participated
- Proposed modification solutions
 - 1. Cars with more doors**
 - 2 ~25" double doors and 2 ~50" single/double doors
 - Seat loss: 60-100 potential range per 6-car train
 - 2. Cars with traps**
 - 2 single ~50" doors w/ traps and 2 single ~50" doors
 - no seat loss
- Positive
 - Redesign existing vehicles (not starting from scratch)
 - Vehicle delivery (2020 revenue service)
 - Competition adequate

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Alternative Plan Caltrain Operations Assessment

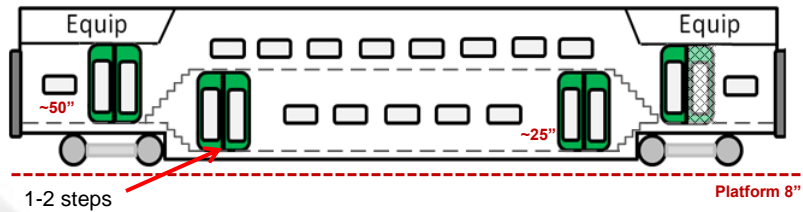
Timeframe: 2020 Electrified Service

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Alternative Plan A

Cars with More Doors (2020)



1-2 steps

Platform 8"

- 4 double doors (located: ~25" & ~50"*)
- Passengers / bikes use ~25" doors (1-2 steps)
- ADA location TBD
 - Located at ~50" (use high doors: need high blocks / wayside lift)
 - Located at ~25" (use low doors: need mini high / wayside lift)

*Double ~50" doors may not be feasible

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Alternative Plan A

Cars with More Doors (2020)



High Block



Mini-High



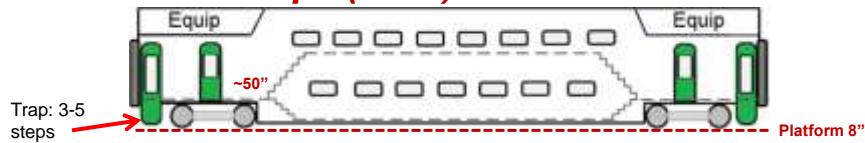
Wayside lift

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Alternative Plan B

Cars with Traps (2020)



Open Trap



Close Trap



Single Door w/ Trap

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Alternative Plan B

Cars with Traps (2020)

- 2 single doors w/ traps, 2 single doors no trap
 - All doors to ~50" floor
- Single door access (longer dwell)
- Passengers/bikes use 2 single doors w/ traps (3-5 steps)
 - Taller first step or step stool needed
 - Bikes located ~25" level (use additional internal steps down)
- ADA location ~50" level
 - At stations high blocks / wayside lifts
- Automatic / manual traps

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Alternative Plan Caltrain Operations Assessment

Timeframe: Future Blended (with level boarding)

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Future Scenario 1

Share Platform 2-3 HSR/Caltrain Stations

- Caltrain/ HSR stations level boarding ~50"
- Caltrain stations level boarding ~25"
 - Existing station footprint and visual impact
- Alternative Plan A **cars with more doors**
 - Continue using both doors
 - Seats cannot be restored
 - Interior lift needed if ADA ~25" level
 - Potential mitigation by car reconfiguration
- Alternative Plan B **cars with traps**
 - Continue using traps





Future Scenario 2

Shared Platforms All 27 Stations

- Level boarding ~50"
 - Existing station footprint and visual impact
- For Caltrain **cars with more doors**
 - Seal low doors and use high doors only
 - Interior reconfiguration / restore seats
 - Bike circulation and storage challenge
 - Interior lift needed if ADA ~25" level
 - Potential mitigation by car reconfiguration
- For Caltrain **cars with traps**
 - Seal traps
 - Bike circulation and storage challenge



Next Steps

- JPB May 20 Workshop
 - Compatible boarding height discussion
 - Seats/Bikes/Bathroom balance
- JPB July Board Action
 - Release EMU RFP
 - Updated Funding Plan / HSR Additional Funding Commitment