

# CALTRAIN

Caltrain  
2025

**Caltrain, the commuter rail system, serving commuters between San Francisco, San Jose/Silicon Valley and Gilroy in California, has obtained a level of national prominence in recent years for its unprecedented growth in ridership, revenue and productivity.**

Caltrain's ability to provide a competitive transportation alternative to commuters continues to spur ridership growth, breaking records month-after-month and year-after-year. However, after 2008, the railroad will not be able to add trains in the peak commute periods without degrading travel times. This is due to the limitations of the current track infrastructure, signal system, and diesel-powered locomotives and some station configurations.

*Caltrain 2025* addresses these system limita-

tions in two ways. First, Caltrain will implement key system improvements that include electrification of the main line and a new signal system to be complete by 2015.

Second, Caltrain proposes to run a mix of conventional trains and electric multiple units on its right of way. EMUs are individually-powered, high performance vehicles used in urban transit and high-speed train systems around the world. Caltrain may be the first U.S. commuter railroad to operate the type of EMUs that are used internationally. These vehicles would be in service as early as 2015.

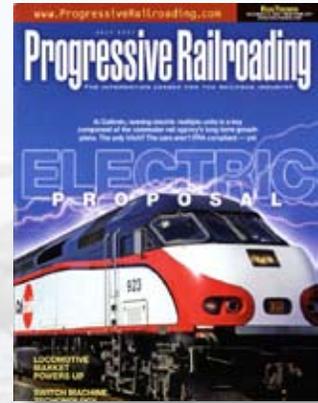
This program is the next generation of Caltrain and perhaps, the next generation of commuter rail in America. ■



Photo simulation of Caltrain EMU.

# The Challenge

- ▶ **The success of the "Baby Bullet" express service has resulted** in increasing demand for "speedier" Caltrain service at more stations. The performance of the system must be increased to provide additional stops while maintaining competitive travel times.
- ▶ **Caltrain will be unable to meet growing, commute period ridership demand** if steps are not taken to increase performance and capacity.
- ▶ **In the commute periods, there is limited capacity to add additional train service** due to limitations of the current rail road infrastructure, signal system, and current diesel-powered trains.
- ▶ **Conventional methods for increasing system capacity – lengthening station platforms, adding tracks – can be cost-prohibitive and take many years to implement.** ■

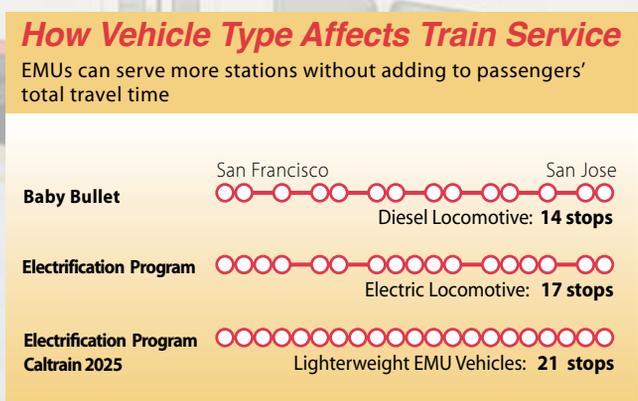


Caltrain 2025 was the cover story in the July 2007 issue of **Progressive Railroading Magazine**.

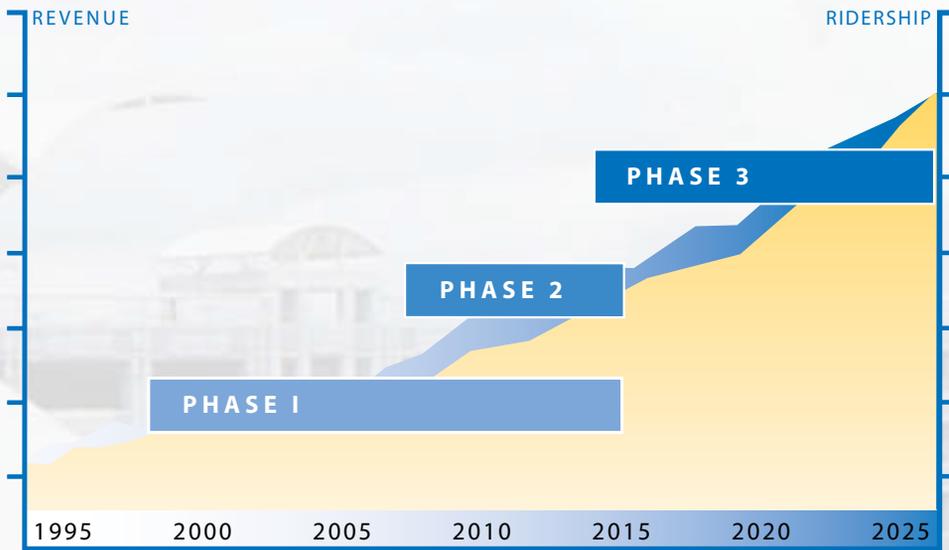
# The Solution



- ▶ **By 2015, the Caltrain corridor will be electrified from San Francisco to San Jose.** New substations and overhead contact system will deliver electric power to the new fleet.
- ▶ **By 2015, a majority of the fleet will be due for scheduled replacement.** Caltrain proposes to replace vehicles with **EMUs**, which in concert with a new signal system, will greatly enhance performance and safety for Caltrain.
- ▶ **The proposed signal system will feature positive train control –** an existing technology that automatically engages the train brakes in advance of potential collisions.
- ▶ **By installing a new signal system, operating EMU trainsets, and improving stations,** Caltrain will be able to carry three times more passengers in the peak hour than it does in 2008.
- ▶ **Caltrain is seeking permission from the Federal Railroad Administration** to operate both electric multiple units and conventional diesel-powered trains on its right of way. If successful, Caltrain could be the first commuter railroad in the United States to provide rapid transit levels of service in a traditional railway environment. ■



## Caltrain 2025 Program Phases



The different stages of the Caltrain 2025 Program include:

### PHASE 1

Replacement & rehabilitation, track expansion and other infrastructure improvements that support "Baby Bullet" express service.

### PHASE 2: CALTRAIN 2015

Systems improvements, such as electrification, a new signal system and replacement of the existing vehicle fleet to be complete by 2015. This phase is sometimes referred to as "Caltrain 2015."

### PHASE 3

Terminal capacity improvements, expansion of the fleet to accommodate ridership growth through 2025.

### Electrification Program



Once the electrification project is complete in 2015, an overhead contact system will supply power to electric trains. Electric trains have better performance than diesel-powered trains, consume substantially less energy, and will result in reduced emissions and reduced noise.

### Electric Multiple Units

Caltrain proposes to run EMUs on its right of way once the railroad is electrified. EMUs can run on standard gauge rail and do not need dedicated tracks. Standard gauge rail is used by intercity, commuter and freight trains all over the country.



### Crash Energy Management

An EMU carbody is designed based on crash energy management principles and absorbs energy during a collision, much like automobiles are designed today. This provides additional safety for train crew and passengers.

### Positive Train Control

Caltrain is planning for a new signal system that includes positive train control and additional features that improve the performance and safety of commuter rail operations. In an emergency, brakes will automatically be applied to protect against potential incidents. PTC is mandated for all rail systems in the U.S. by 2015.

# Next Steps



- ▶ **Caltrain is seeking permission from the Federal Railroad Administration** to operate both electric multiple units and conventional diesel-powered trains on its right of way.
- ▶ **The Caltrain corridor will be one of the first segments of the statewide high-speed rail network.** Caltrain continues to work with the California High Speed Rail Authority to move the program forward.
- ▶ **Caltrain will continue to broaden its outreach to stakeholders and explore funding opportunities to finance portions of the program.** ■



Caltrain EMUs will be compatible with high speed trains, which will operate on the Caltrain corridor in the future.



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## Be Part of the Future

This program will touch the lives of many people. Whether you are a present or future Caltrain passenger, a resident, a commuter, a business owner along the corridor or a funding partner, this is an opportunity to provide a local solution and advance the transportation industry. If you think this program will benefit our communities and the environment, help spread the word about the next reinvention of Caltrain. Regular updates on the Caltrain 2025 program will be posted at [www.caltrain.com](http://www.caltrain.com).

### *For Passengers, Present & Future:*

Caltrain will be able to offer more service, at a higher frequency to more stations.

### *For Businesses & Communities Along the Corridor:*

The proposed solution offers a safe and reliable transportation alternative to congested roads and highways.

### *For the Rail Industry:*

This is the first time that a U.S. commuter railroad will operate vehicles that deliver rapid transit performance.

### *For California High-Speed Rail:*

This program resolves technical issues related to mixing different types of rail vehicles within a rail corridor, enabling the delivery of high speed rail service in California and across the country.