

# **ARRA: Stimulating the Economy**

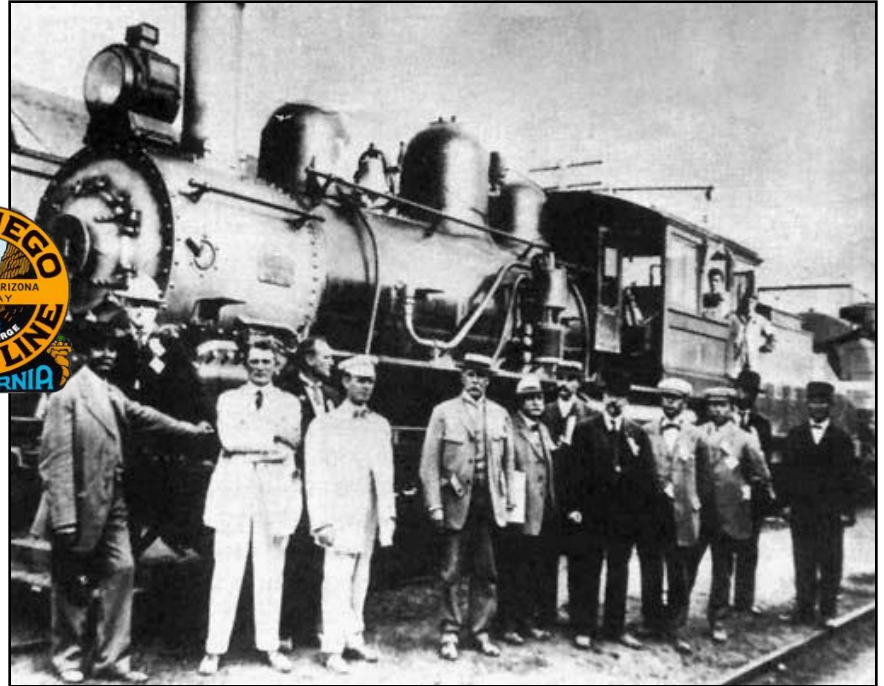
## **San Diego Trolley's Blue Line Rehabilitation Project**

Implementation of Public-Private  
Partnerships  
July 8, 2009



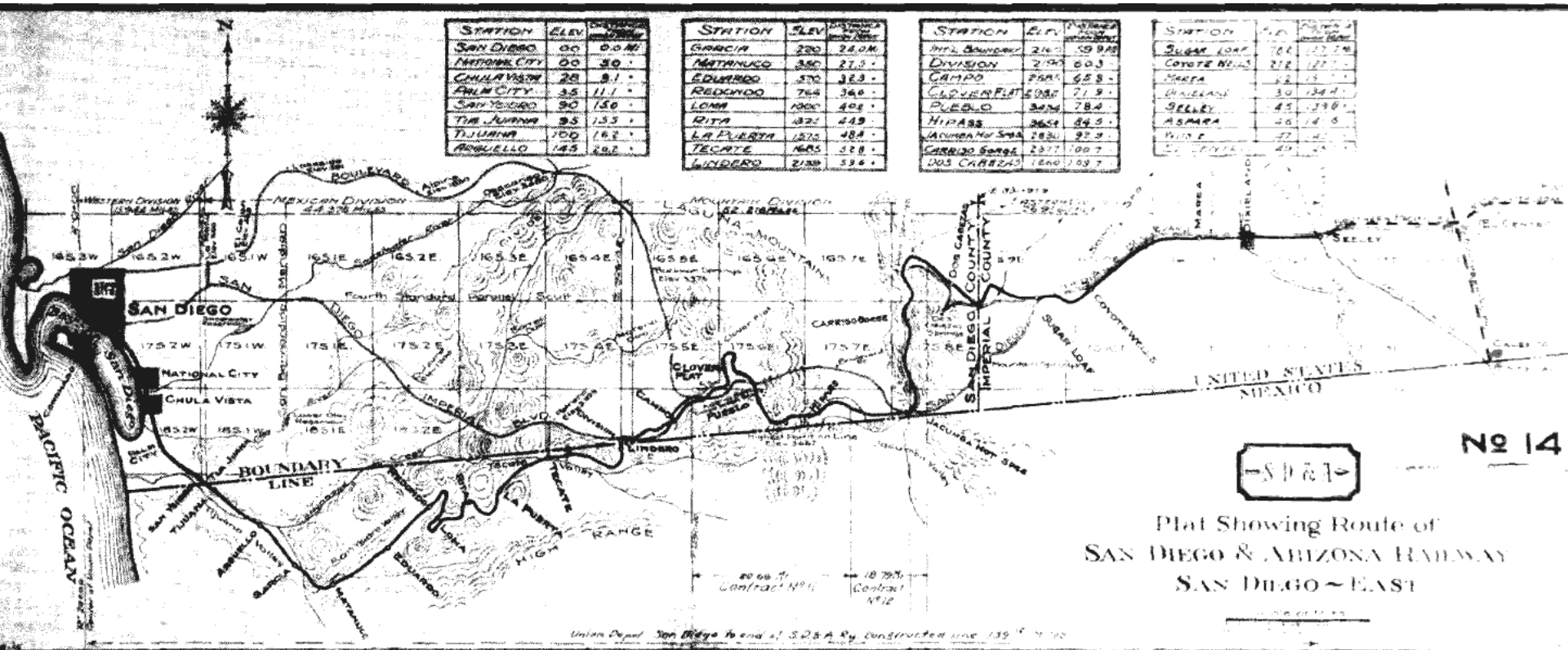
# 1919

San Diego & Arizona Eastern Railroad is finally completed. John D. Spreckels drives the final golden spike. A thousand spectators observe. After thirteen years of labor (and \$17,000,000) San Diego achieves a direct link with the East.



# 1919

The railway never achieves commercial success, automobiles and trucks providing competition; it is eventually washed out by a flash flood and abandoned in 1976.



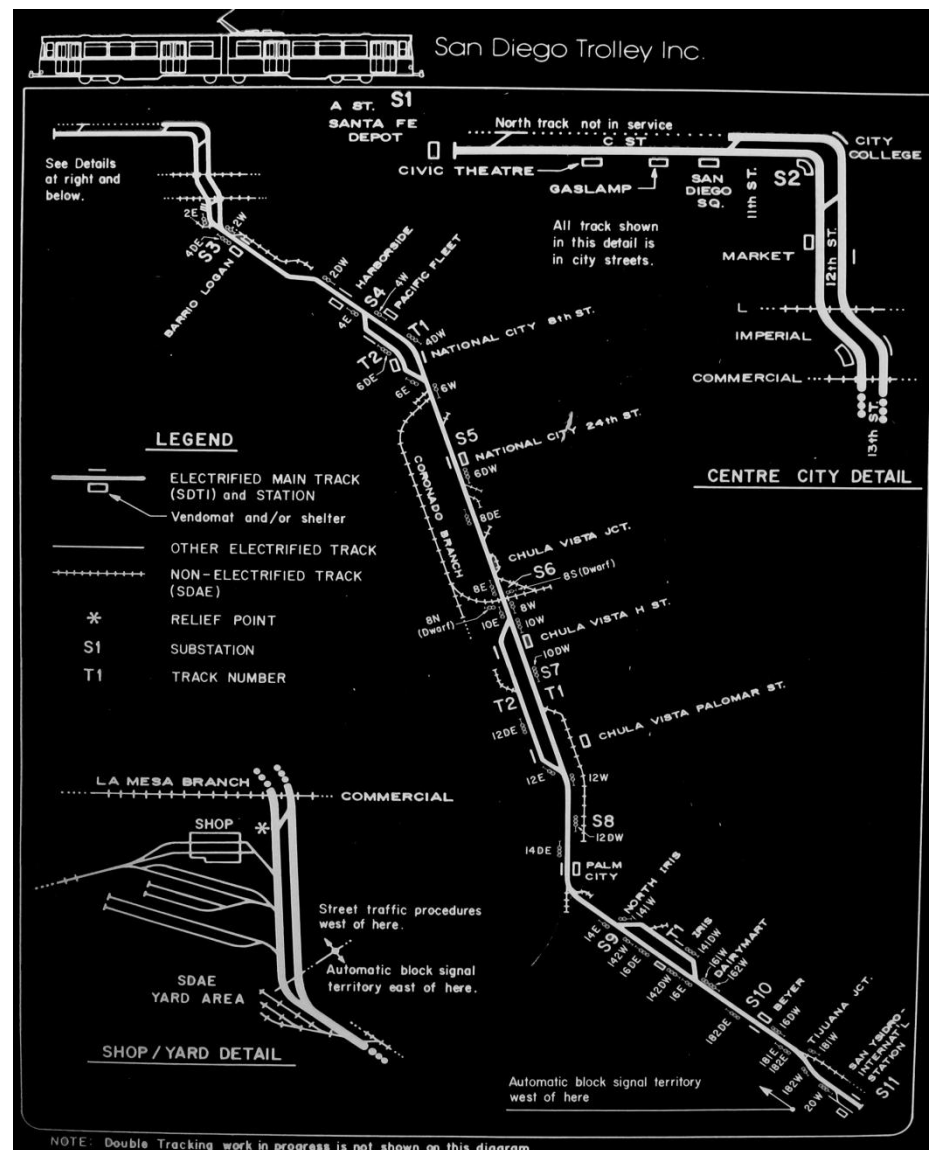
# The Light Rail Renaissance Begins

- August 1975 - SB-101 created the Metropolitan Transit Development Board
- Design and build a light Rail transit system serving the greater San Diego area
- 108-mile right-of-way purchased in 1978
- Construction of the initial 15.9-mile South Line begins in 1979, for a July 26, 1981, start up

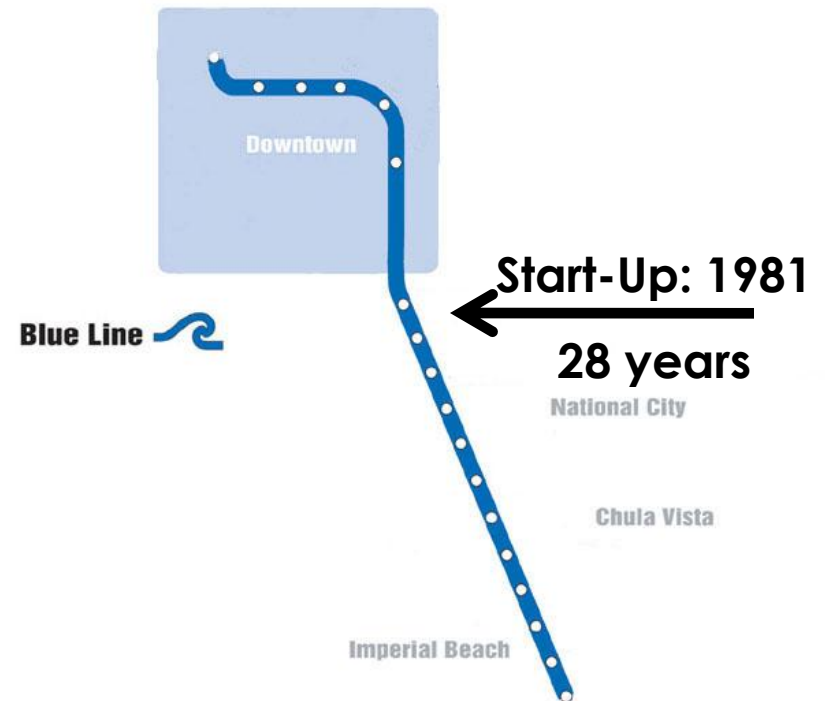




# Single Track



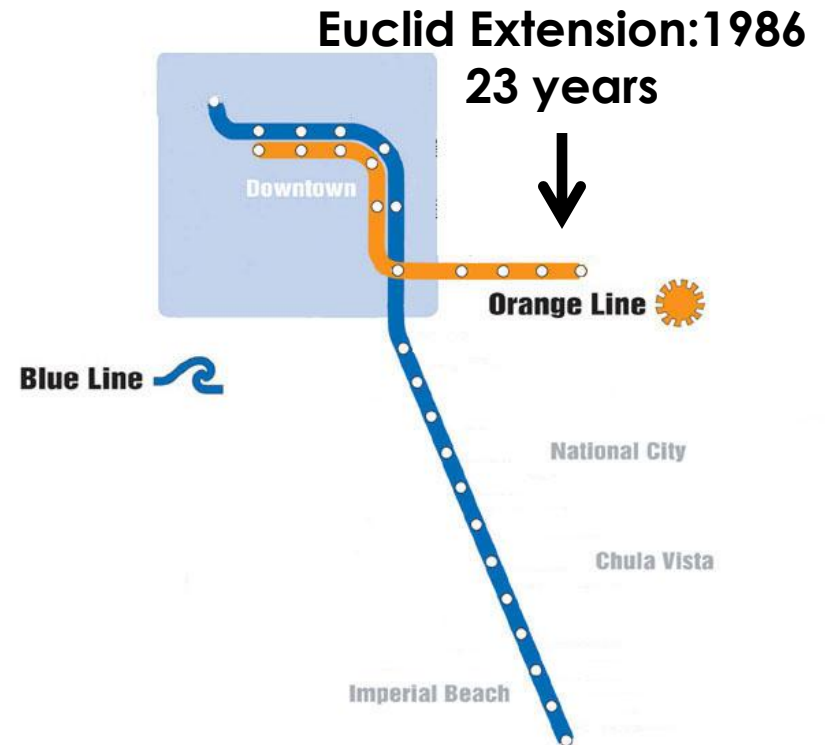
# Growth of the Trolley System



# Growth of the Trolley System

Start-Up: 1981

28 years



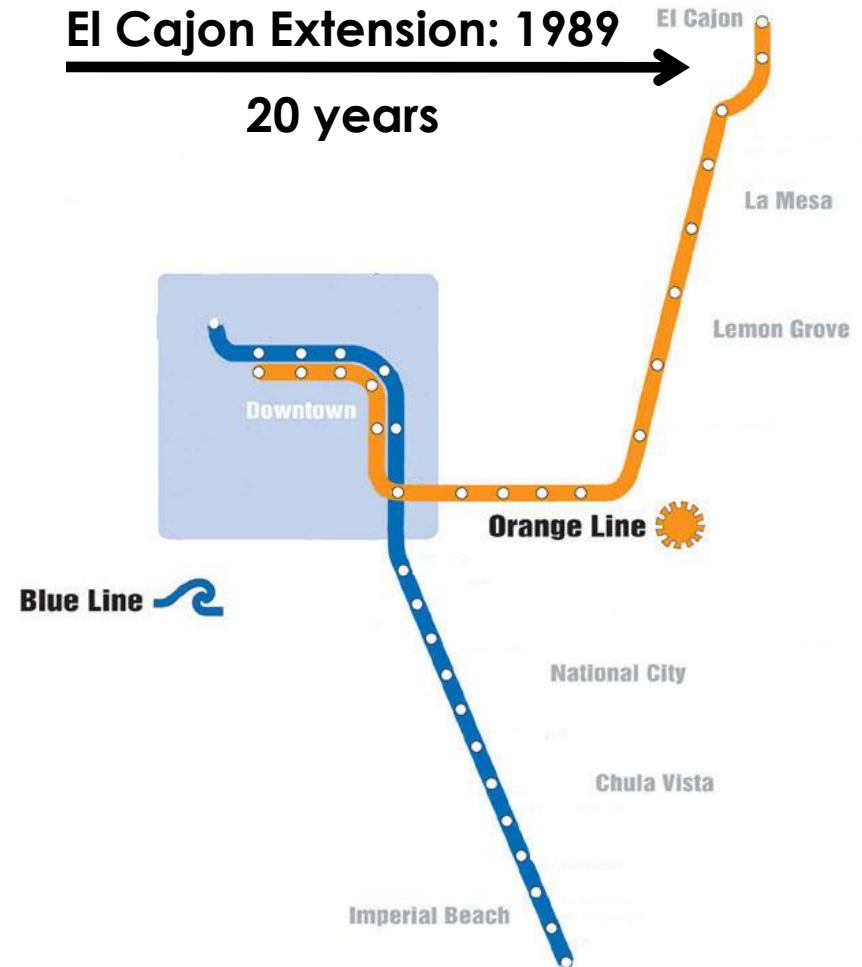
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Euclid Extension: 1986

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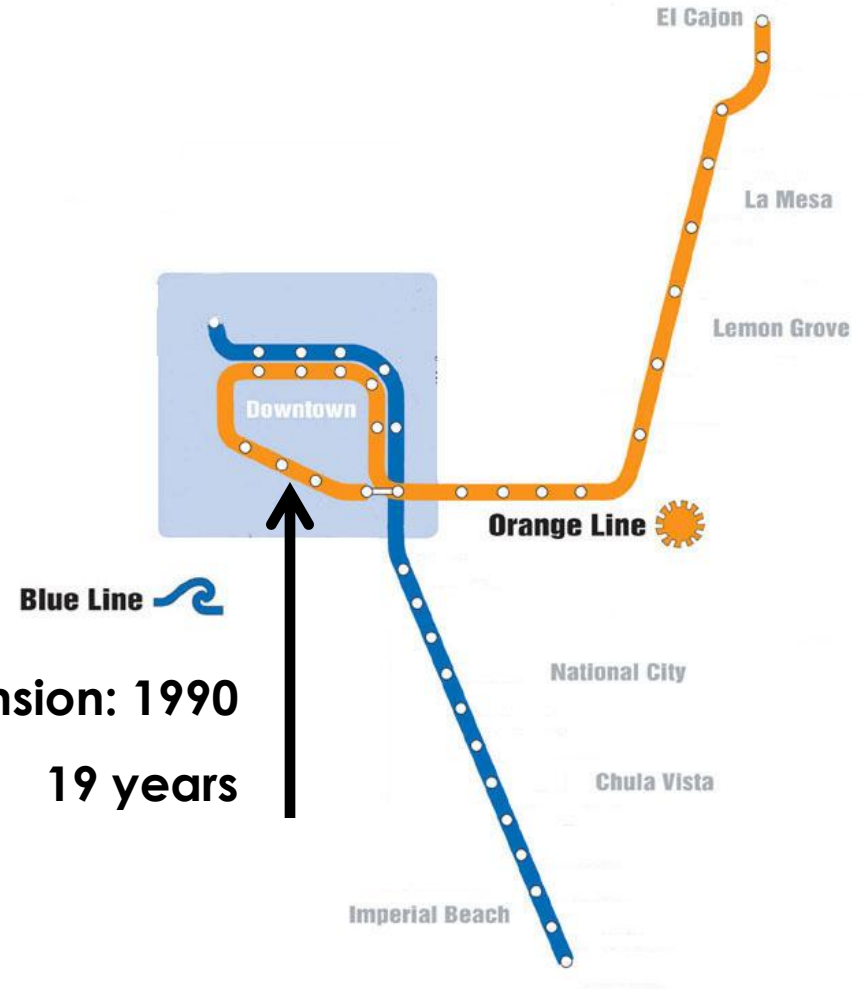




# Growth of the Trolley System

Start-Up: 1981	28 years
Euclid Extension: 1986	23 years
El Cajon Extension: 1989	20 years

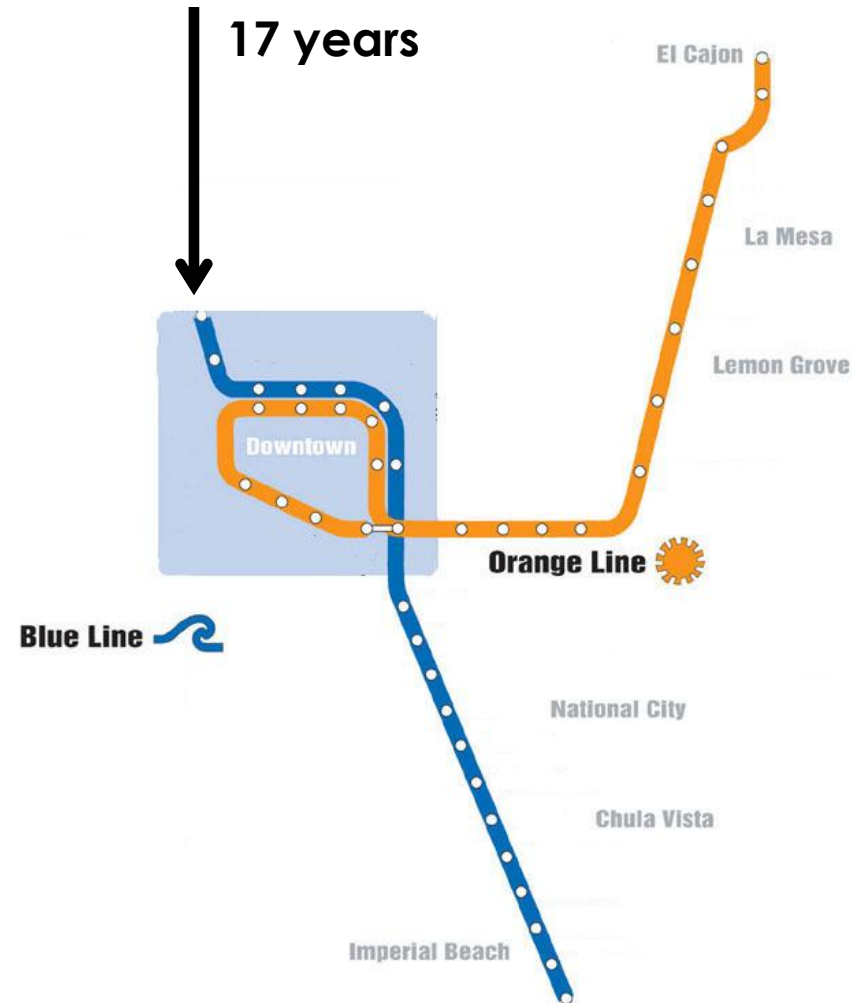
Bayside Extension: 1990  
19 years



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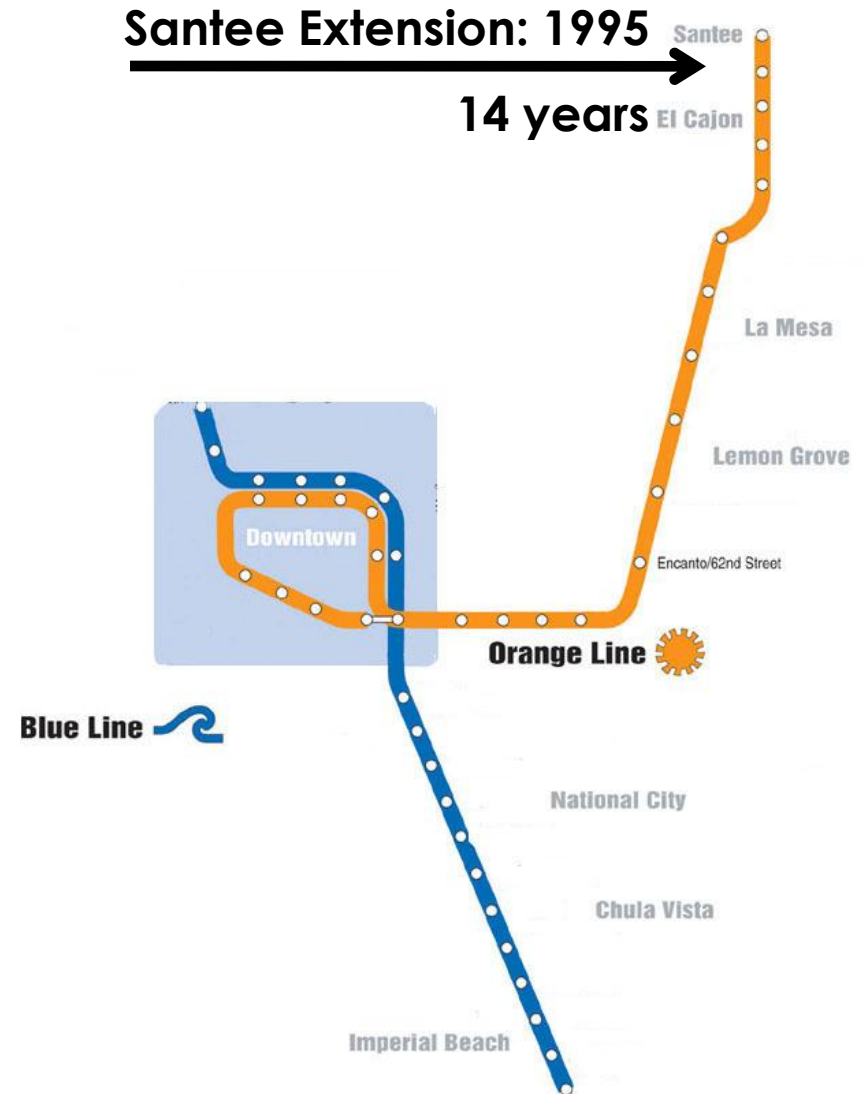
Cnty Ctr/Little Italy: 1992

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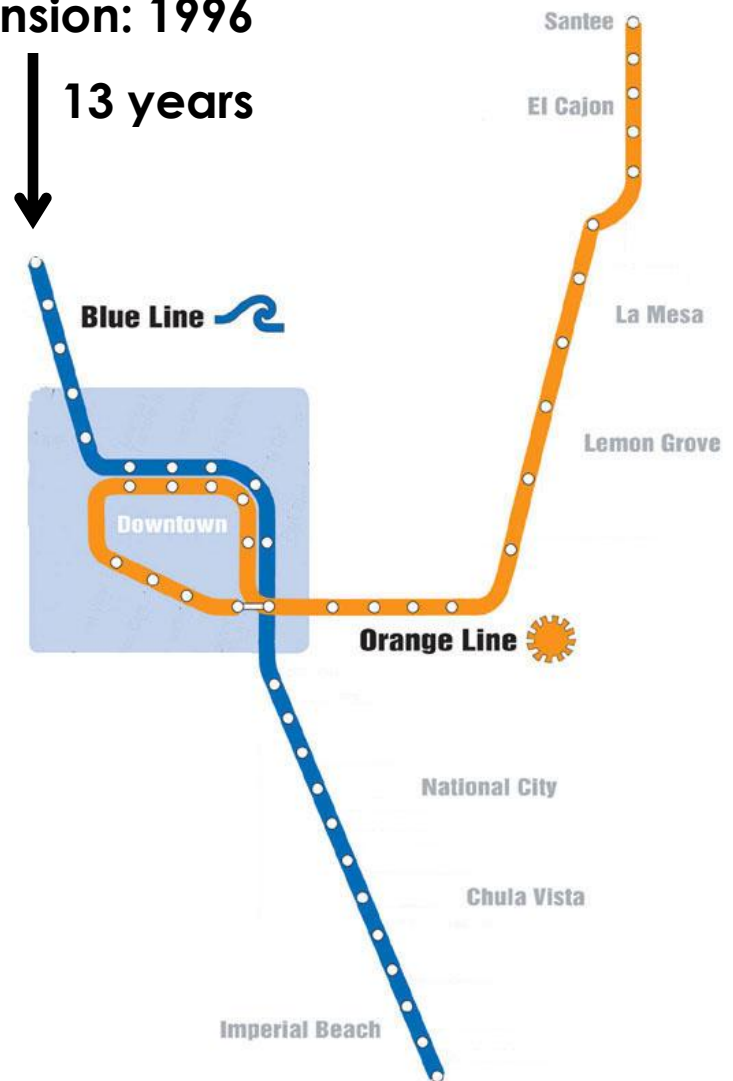


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Santee Extension: 1995	14 years

Old Town Extension: 1996

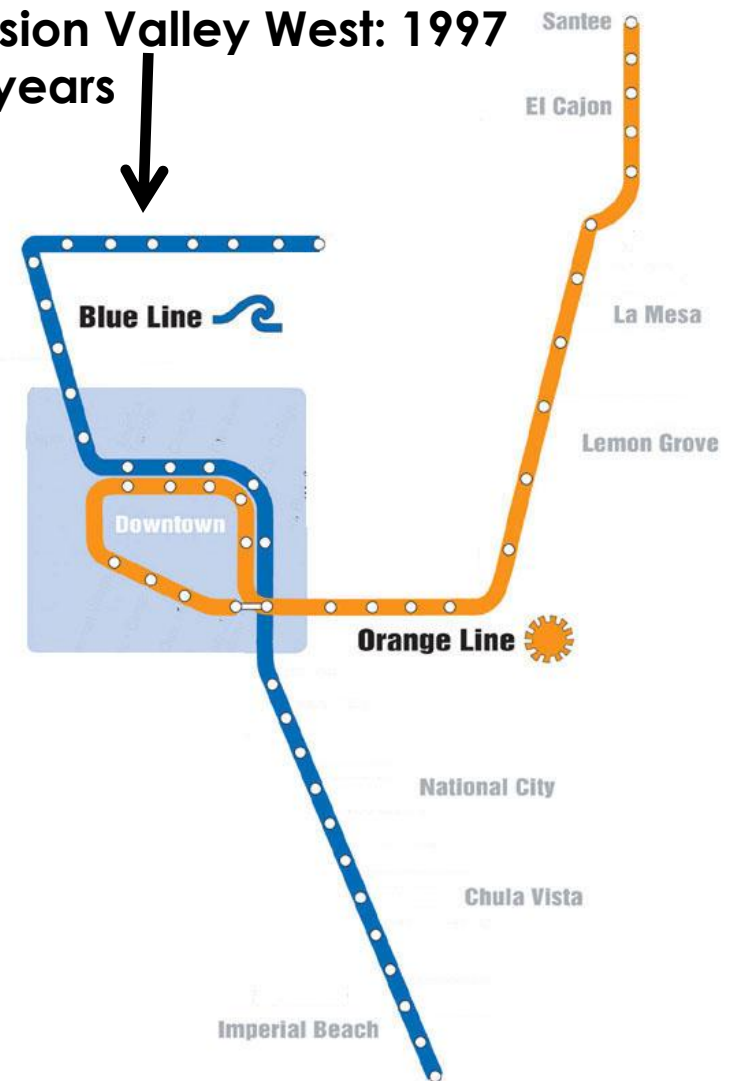
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# Growth of the Trolley System

Mission Valley West: 1997  
12 years

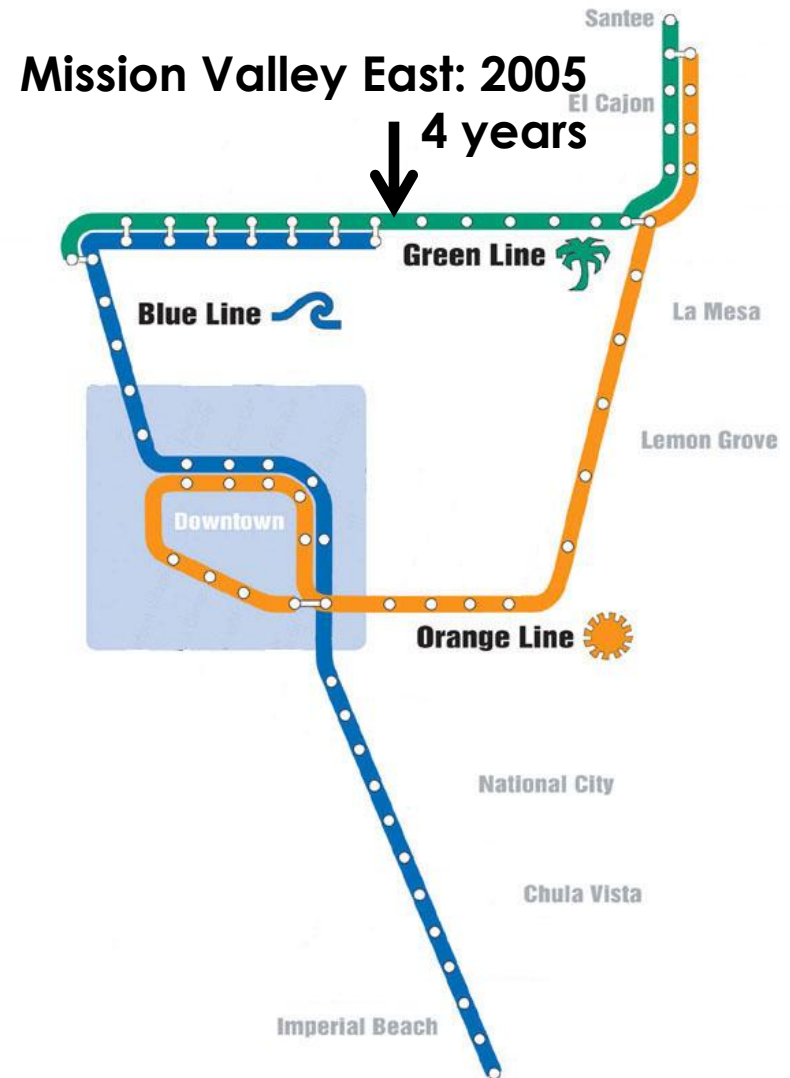
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Mission Valley West: 1997	12 years
Mission Valley East: 2005	4 years



# Vehicle Rehabilitation Program



- \$500K allocated annually for paint and body restoration
- Graffiti / Window Etching – Zero Tolerance
- U-2 Mileage – High 2M     SD100 Mileage – High 900K



# Blue Line Rehabilitation

- Minimal capital investment with a focus on the reuse of existing (1919) infrastructure
- Mix of 90# and 115# rail set primarily on wooden ties (some dating to the 1930s), with substandard ballast
- Stations at grade level with minimal passenger amenities
- Underlying track structure is deteriorated at all grade crossings and station platforms
- System components i.e. OCS, substation structures, signal and grade crossing cases and associated hardware





# System Improvement Plan

- Catenary Replacement
- Crossover Installation and Signaling
- Rail Replacement in Curves
- Grade Crossings: Mechanisms, Cases and Lights
- Station Improvements
- Substation Relay Upgrade
- Slope Repair
- Track Switch Replacement
- Signal Case Replacement
- Substation Structure Replacement
- Tie Replacement
- Station Asphalt Replacement
- 90# Rail Replacement

**\$ 214M**





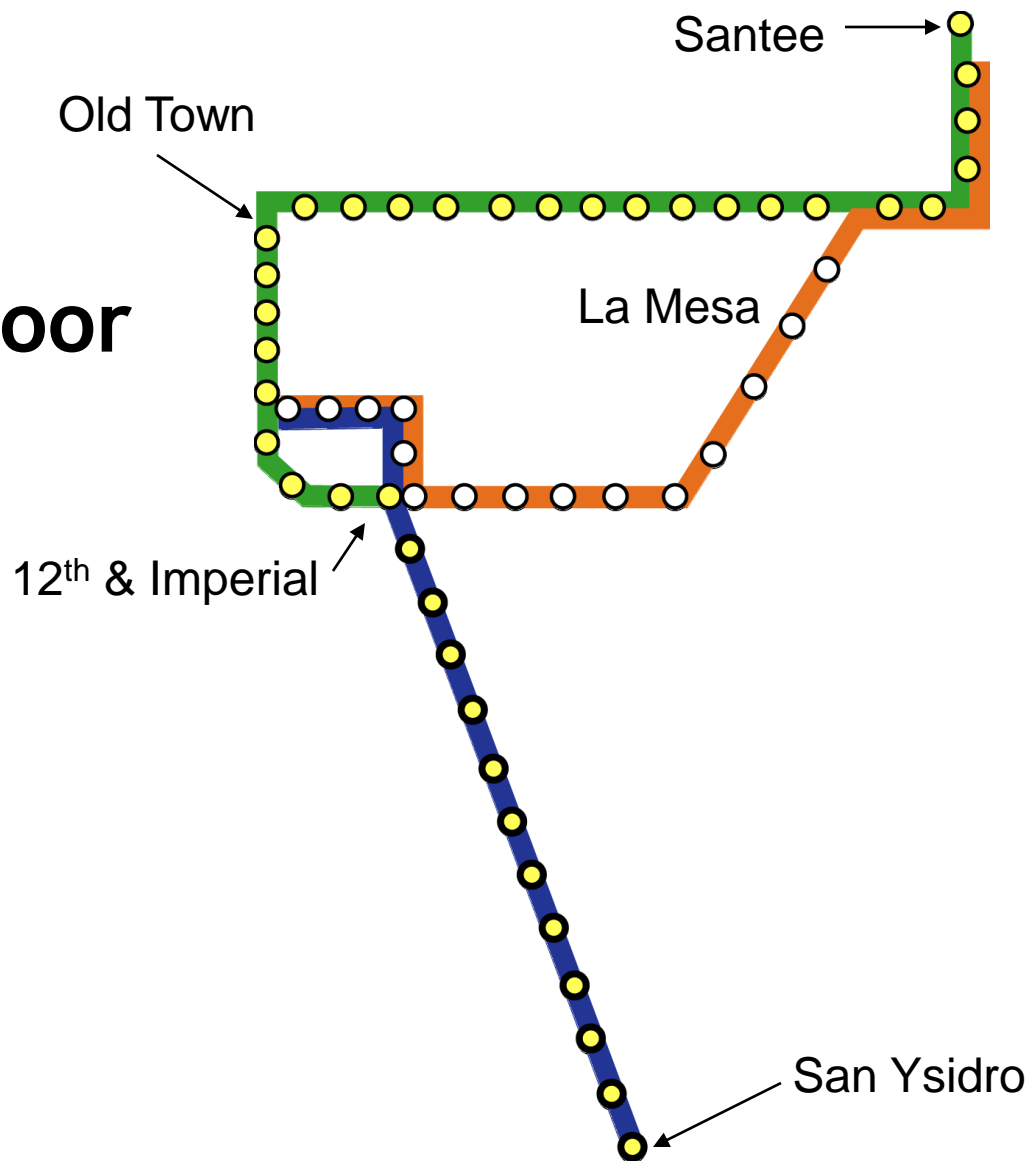
# System Improvement Plan

## Economic Recovery

- Prime Construction Contracts: 5-8
- Estimated Subcontractors: 15-24
- Jobs: 300 to 350 (90% in state)
- Project Commencement: April 2009 (first design task orders)
- Construction Begins: late 2009/early 2010
- Project Duration: April 2009 to December 2013



# System-wide Low-Floor Access

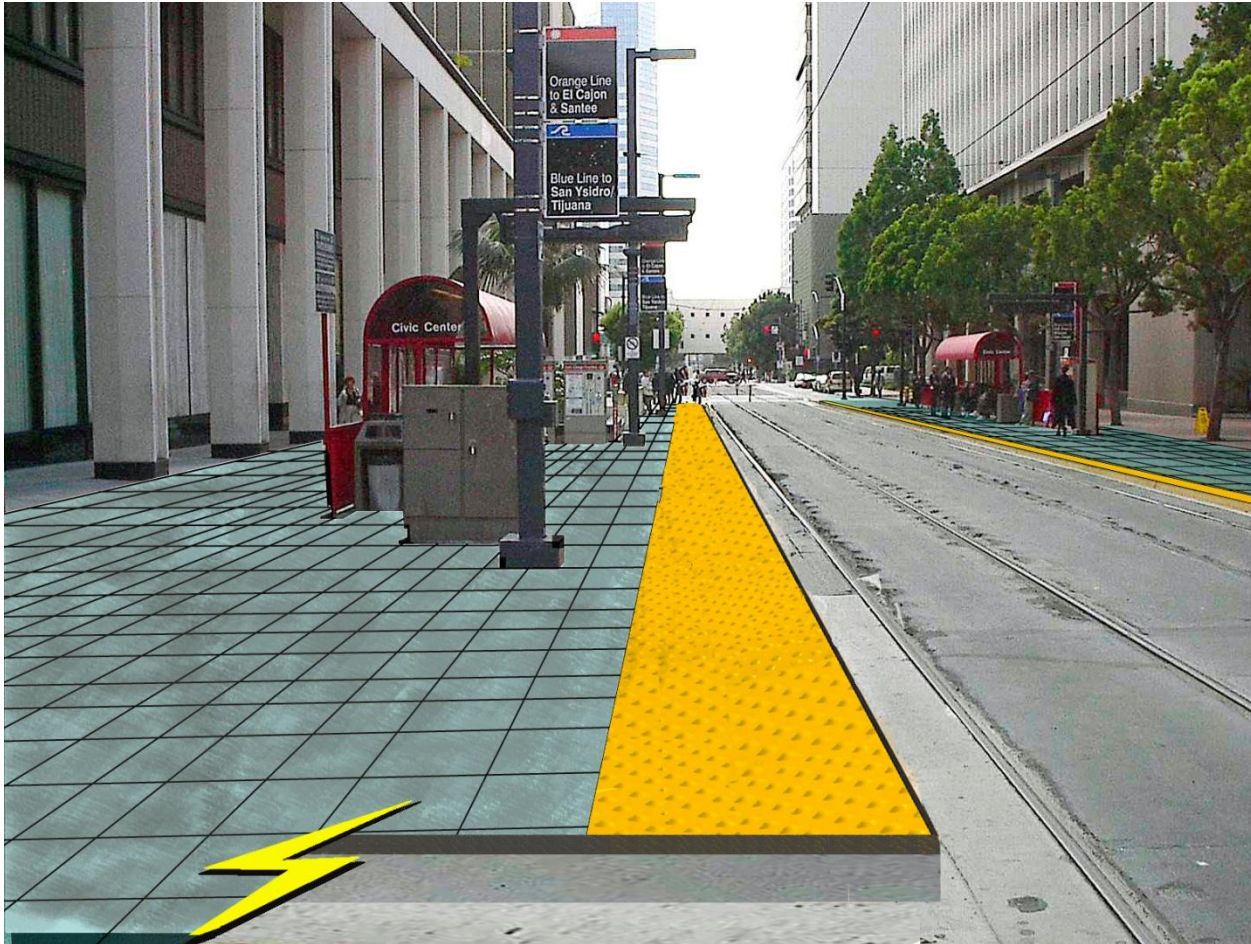


# Civic Center Station - Existing



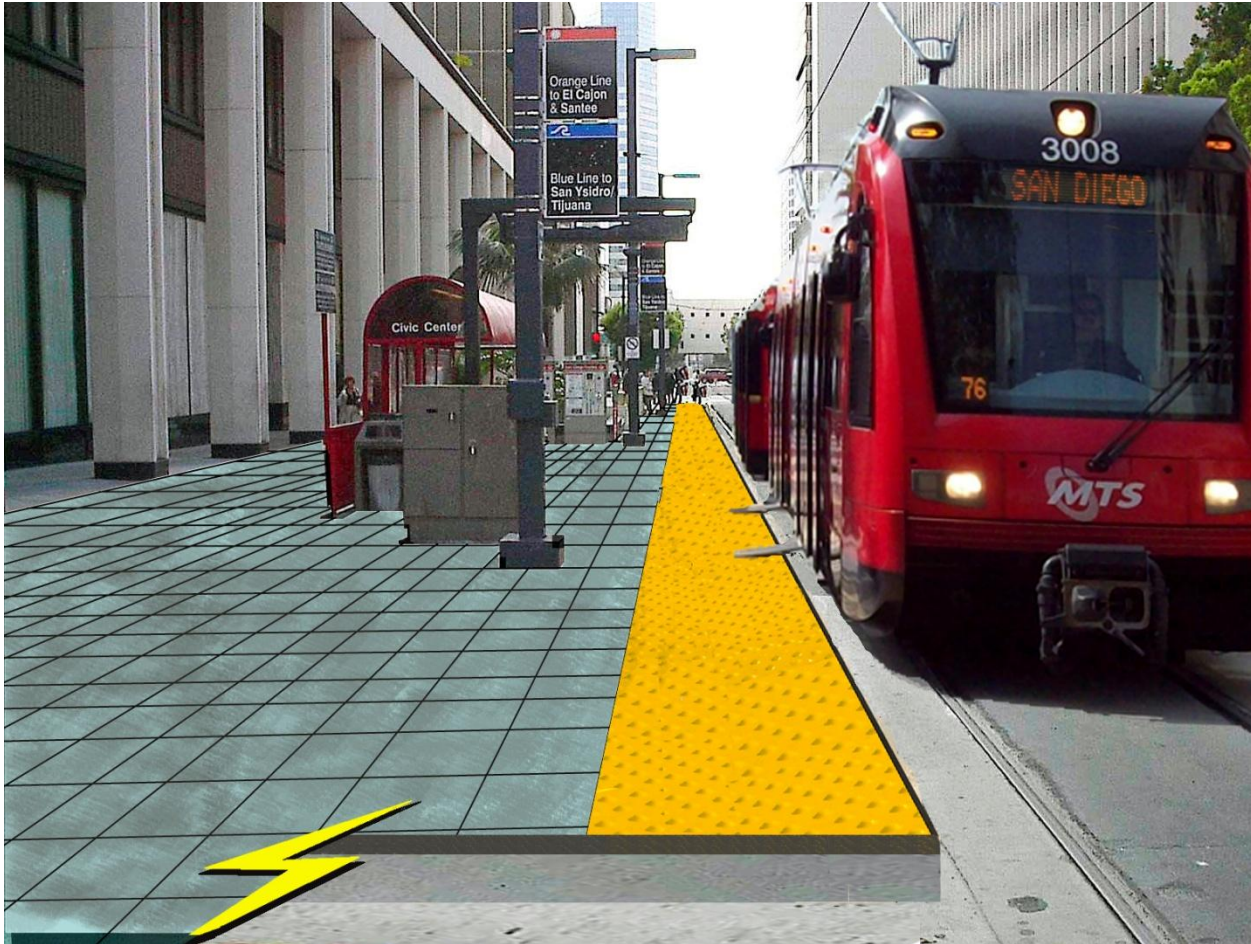


# Civic Center Station - 8" Platform





# Civic Center Station - S70 Ultra Short





# ARRA Stimulus-Ready Projects

- Catenary - Contact Wire Replacement
- Crossover Installation and Signaling
- Rail Replacement in Curves
- Track Switch Replacement
- Grade Crossings: Mechanisms, Cases and Lights
- Substation Relay Upgrade
- Slope Repair

**\$ 58.6M**



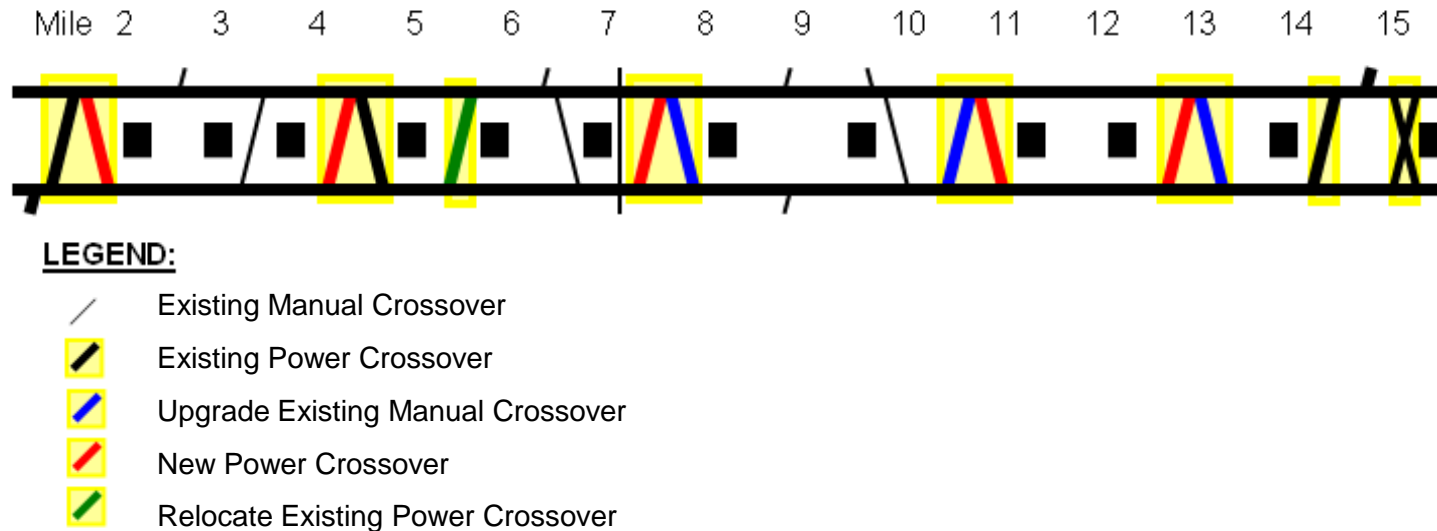
# Substation Relay and Switch Gear Replacement



# Rehabilitate/Replace Substation Structures



# Blue Line Crossover Enhancement



- Install 5 new power crossovers
- Upgrade three existing manual to power crossovers / relocate one
- New crossover configuration will provide long-term benefit



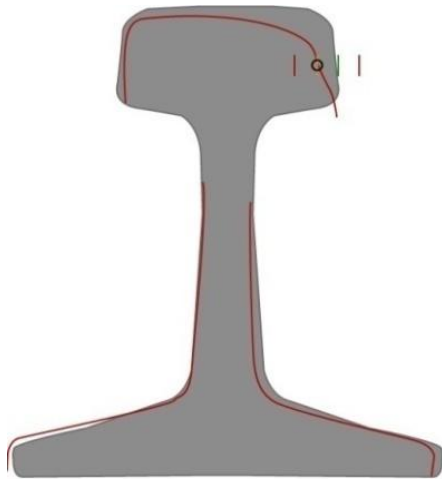
# Blue Line Contact Wire Replacement



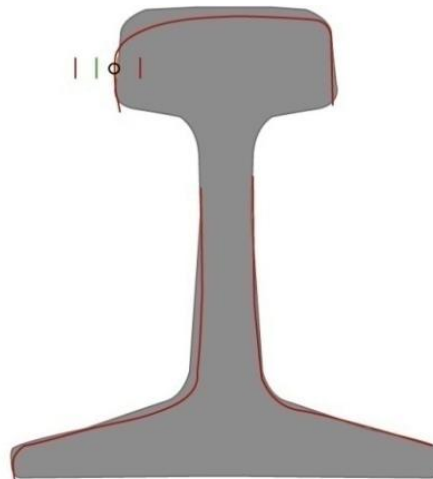


# Blue Line Rail Replacement

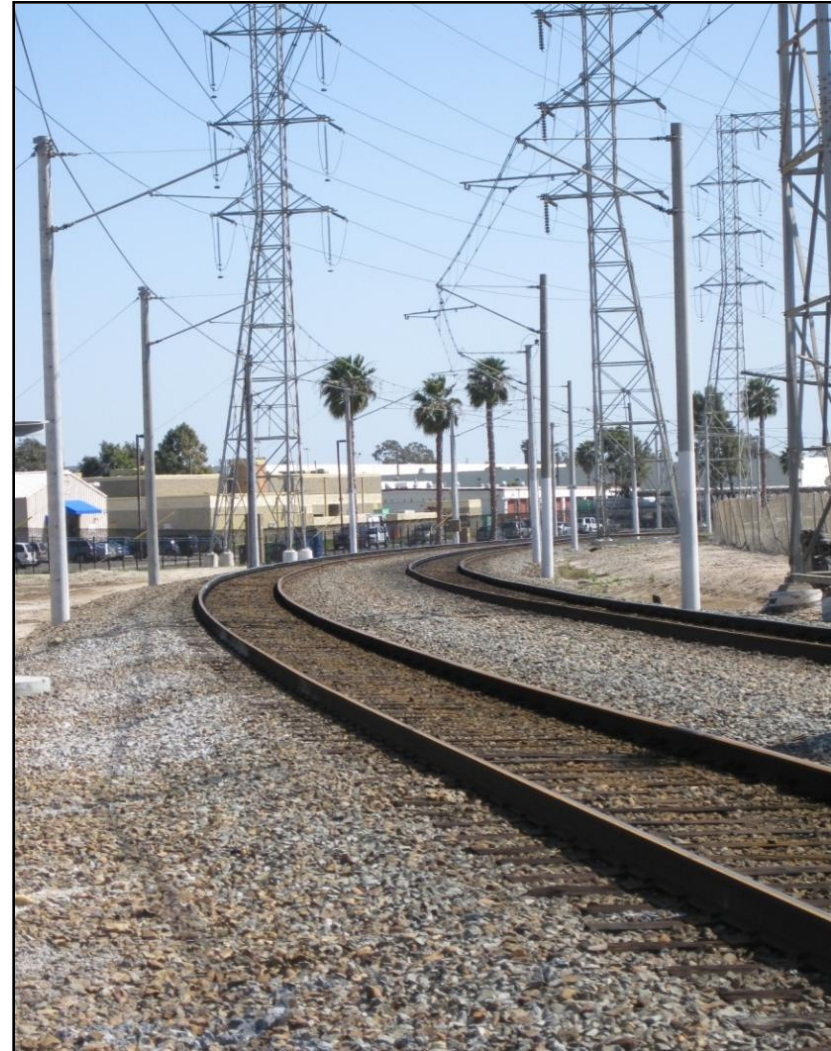
- Replace 90# rail with 115#
- Excessive rail head wear



North



South



# Track Switch Replacement

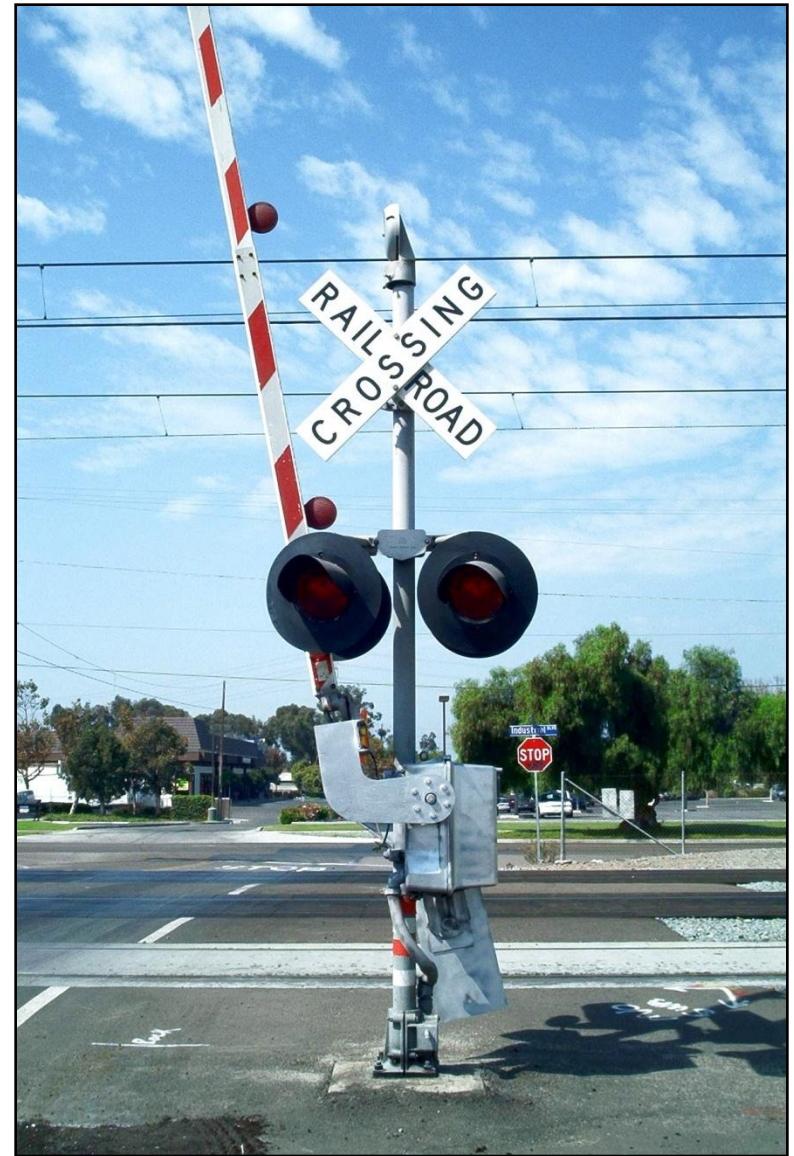




# Rehabilitate 22 Grade Crossings

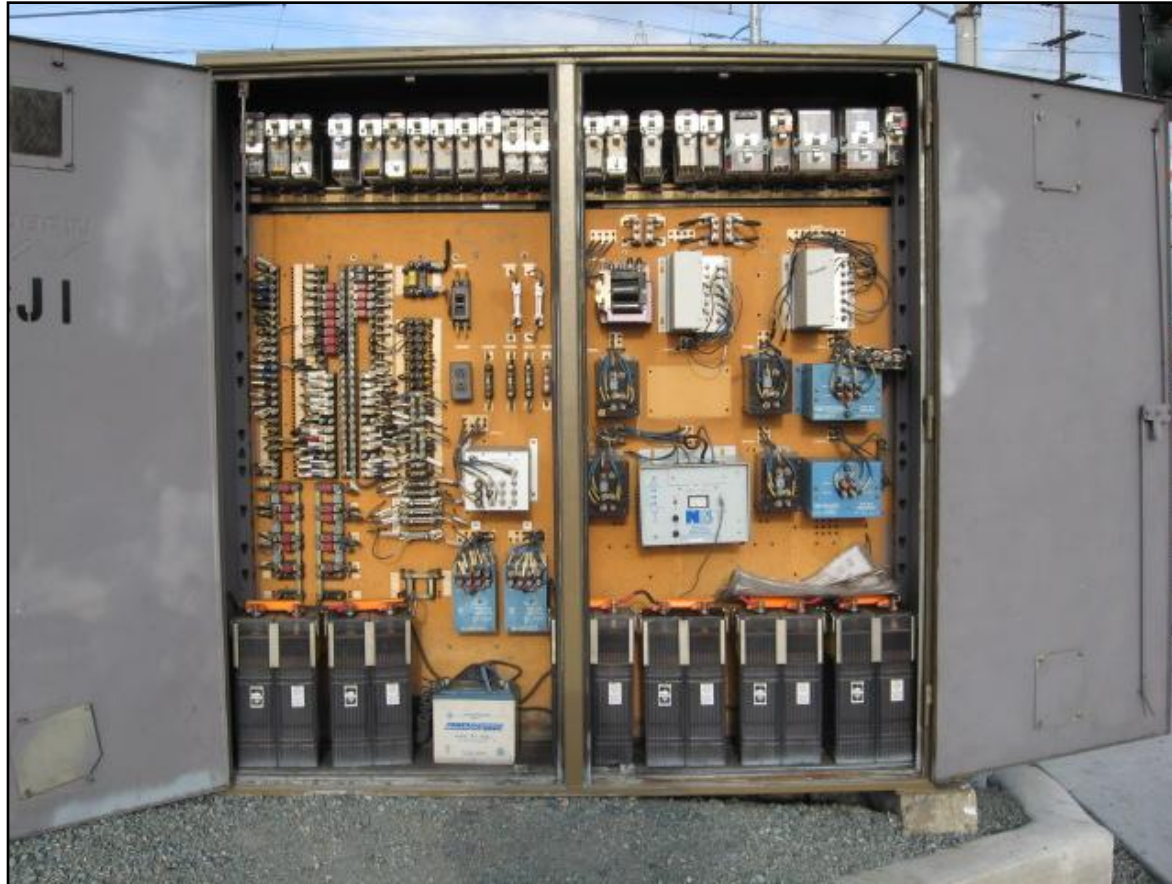


# Replace Highway Grade Crossing Mechanisms and Upgrade LED Lighting





# Replace Grade Crossing Equipment Cases





# Blue Line Slope Repair in San Ysidro

- Stabilize embankments
- Install retaining walls
- Mitigate drainage problems





# Replace Signal Cases and Upgrade Technology to Solid State



# Replace 28K Ties



# Project Funding Sources

Total Project Cost: \$ 214M

Transnet

Prop 1A

Prop 1B

Federal Formula

ARRA-Stimulus

(American Recovery and Reinvestment Act)





# ARRA Stimulus

## Economic Benefit

Funding: \$58.6M

- Prime Construction Contracts: 3 - 5
- Estimated Subcontractors: 6 - 12
- Jobs Created: 75 - 100 (most in state)
- Construction: Late 2009 - Late 2013



# ARRA: Specific Project Funding

	Project Cost	Stimulus Benefits
Blue Line Contact Wire Replacement:	\$ 20.0M	\$ 12.0M
Blue Line Crossover Enhancements	\$ 22.5M	\$ 10.0M
Blue Line Rail Replacement	\$ 10.5M	\$ 9.5M
Imperial Junction Track Switches	\$ 6.5M	\$ 5.5M
Grade Crossing Replacement	\$ 13.5M	\$ 10.5M
Grade Crossing Signal Cases & LEDs	\$ 4.5M	\$ 2.5M
Grade Crossing Mechanism Replacement	\$ -----	\$ 1.6M
Blue Line Slope Repair	\$ 2.7M	\$ 1.4M
Blue Line Signal Case Replacement	\$ 4.0M	\$ 3.0M
Security & Transit Enhancements	\$ -----	\$ 1.1M
Blue Line Substation Relay Replacement	\$ -----	\$ 1.5M
		\$ 58.6M

