



SMART RAIL & PATHWAY PROJECT

Caltrans Transportation Planning Field Academy

May 21, 2015

SMART PRESENTATIONS

- SMART History: Matt Stevens – Community Relations Manager
- Funding History: Erin McGrath – Chief Financial Officer
- Project Overview: Bill Gamlen – Chief Engineer

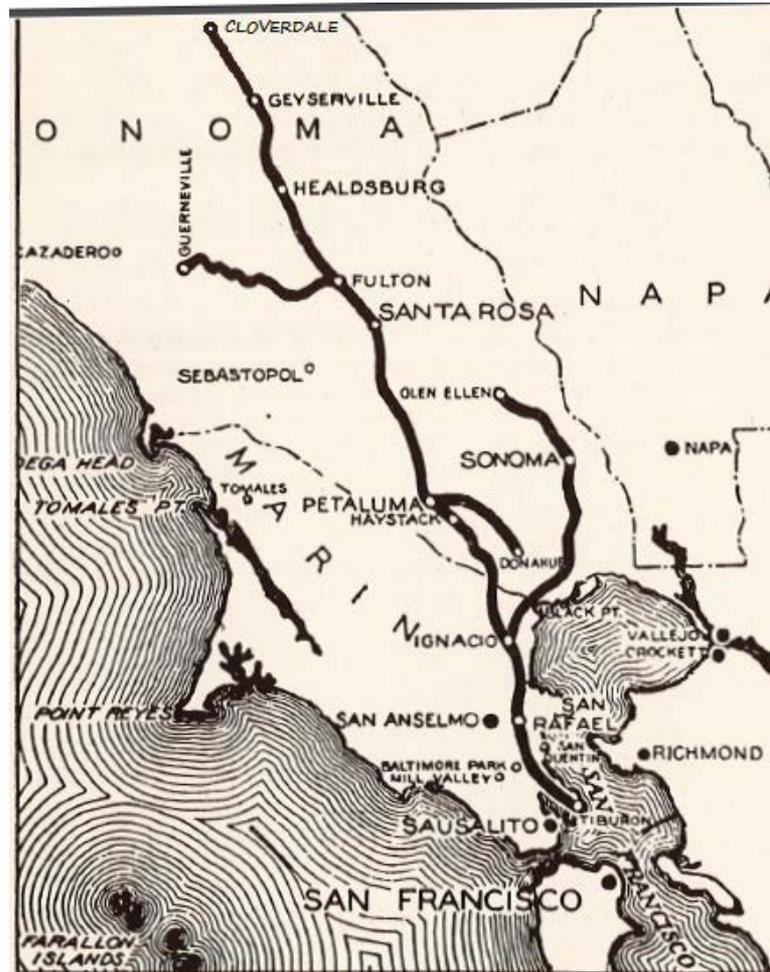


SMART HISTORY

THREE PERIODS IN RAILROAD HISTORY

- Early Railroad Development – 19th Century
- The “Golden Era” and Decline – 20th Century
- Public Ownership and Rebirth – 21st Century

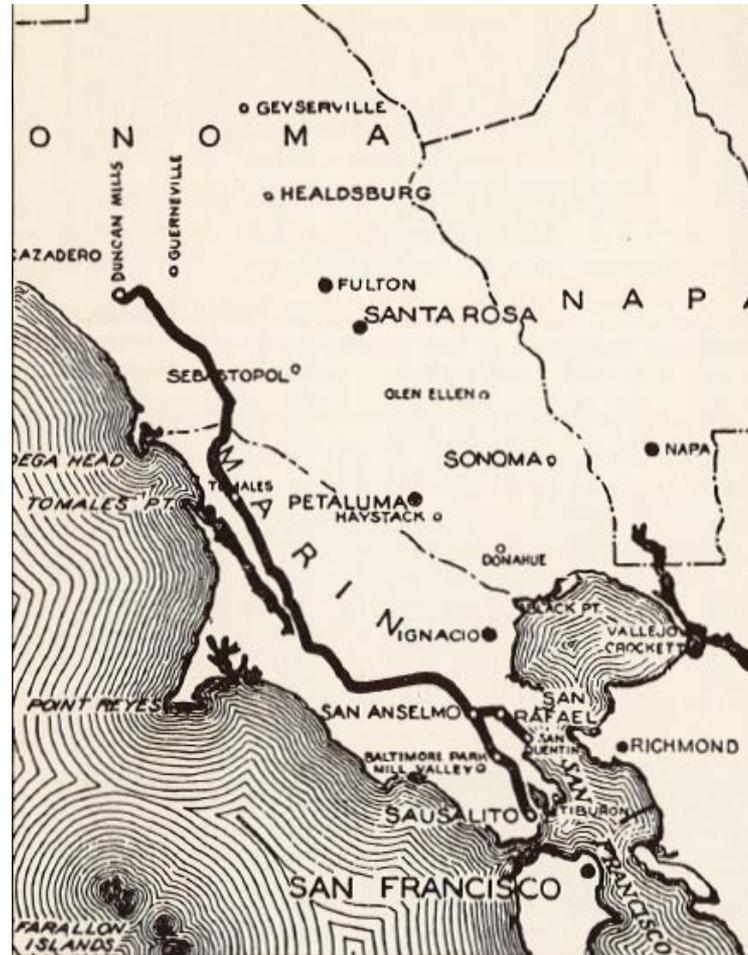
SAN FRANCISCO AND NORTH PACIFIC RAILROAD – 1870-1896



BEGINNINGS OF NORTH COAST TOURISM



NORTH PACIFIC COAST – NARROW GAUGE - 1872



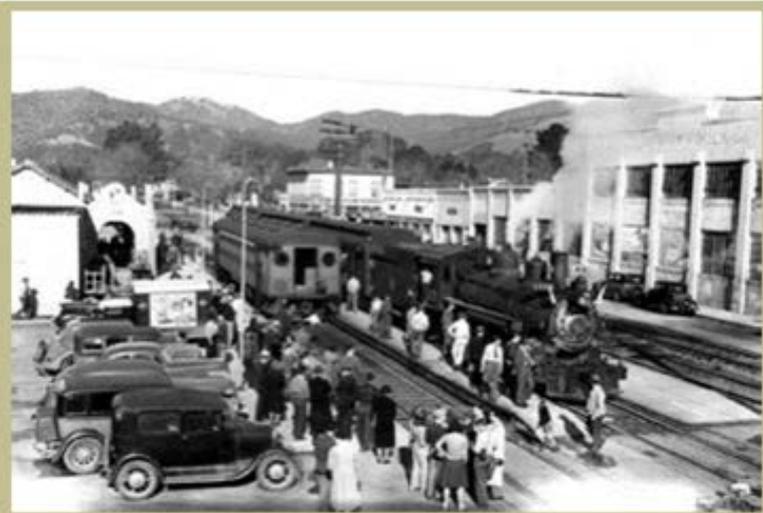
NARROW GAUGE IN SOUTHERN AND WESTERN MARIN



BEGINNINGS OF COMMUTER TRAFFIC



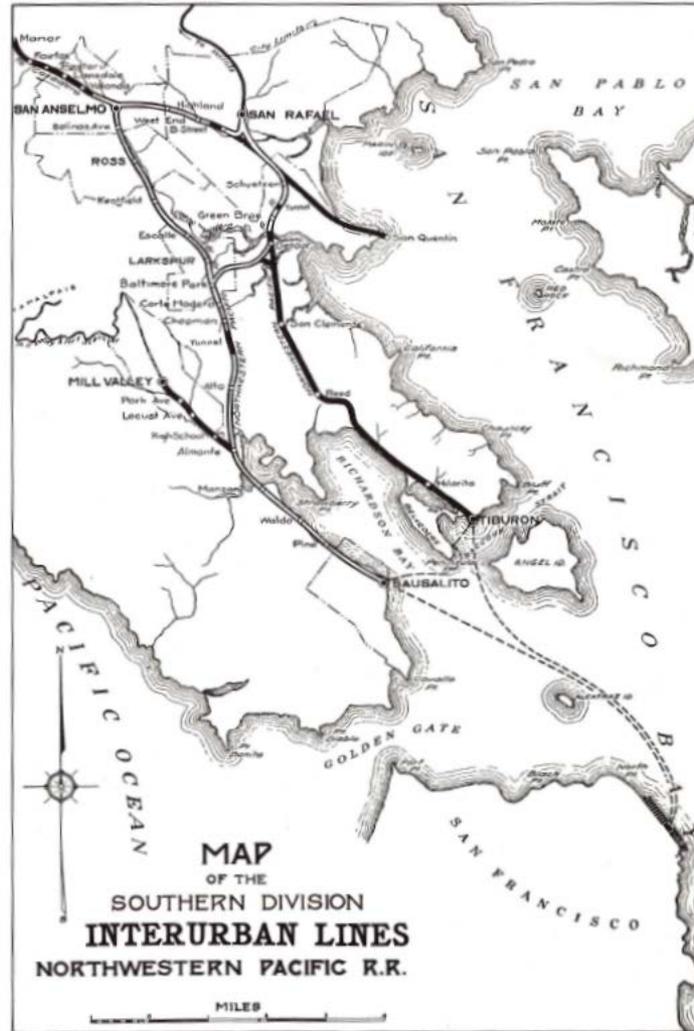
DEPOTS BECAME TRANSPORTATION HUBS



20TH CENTURY DEVELOPMENT

- Southern Pacific and Santa Fe Rivalry
- 1906 Consolidation into Northwestern Pacific
- Marin County Commuter System Electrification
- Main Line to Eureka Completed 1914
- 1920s - More commuter system investment (cars, infrastructure)

MARIN COUNTY ELECTRIFICATION – 4 ROUTES



MAXIMUM RIDERSHIP – 1920S



- A very busy railroad
- Second highest total of passenger miles in California
- Mainline, branches, commuter traffic, numerous feeder and connecting lines

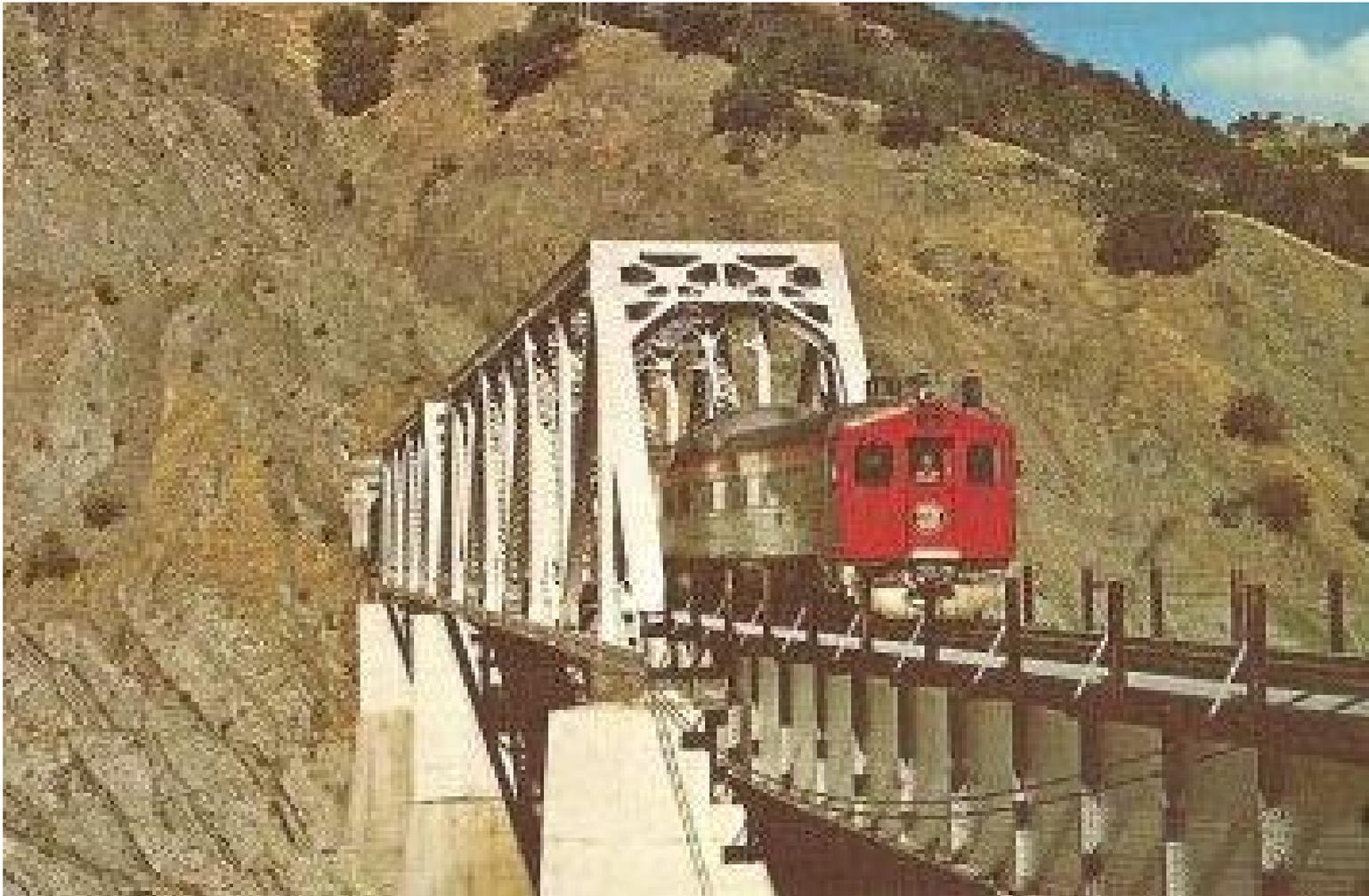
20TH CENTURY DECLINE

- 1929 – Southern Pacific Assumes Complete Control
- Passenger System Decline: Automobiles, Depression
Mainline and Branchline Service Cutbacks
- 1941 - Commuter Service Abandoned
- 1958 - Last passenger service south of Willits
- 1971 – Last Passenger Train to Eureka
- Postwar Freight Growth, then Decline
- Floods and Fires
- Sold off in segments
- Complete Closure 2001

COMMUTER RAIL+FERRY SERVICE ENDS IN 1941



WILLITS-EUREKA TRI-WEEKLY DMU 1958-1971





LAST PASSENGER RAIL SERVICE IN 1958

Downtown Petaluma

1960S-1970S DECLINE

- 1964 “Thousand Year” Flood – line closed 6 months
- 1978 -Island Mountain tunnel fire – line closed 15 months
- Reduced timber yields, Canadian lumber competition, highway trucking competition
- Freight traffic declines
- 1994 – NCRA purchases line Willits-Eureka
- 1995 – Eel River floods close line
- 1996 – Public acquisition of line south of Willits – operation contracted

21ST CENTURY-RENEWAL

- Early studies on rail transit feasibility
 - » Feasibility Study of Intercity Rail Passenger Service (Wilber Smith Report, 1992)
 - » Sonoma Marin Multimodal Transportation and Land Use Study (Calthorpe Report, 1995)
- 1998 SMART Commission formed
- 2002 - SMART District created by State legislation in 2002 (AB 2224)
- SMART undertakes commuter rail service planning, design, and environmental clearance achieved in 2006
- Measure Q passes in November 2008

21ST CENTURY RENEWAL

- 2010 - SMART DMU Purchase
- 2011 - SMART Civil and Systems Design/Build Contracts
- 2012- 2016 Construction
- 2015 – DMUs Arrive
- 2016 – PASSENGER SERVICE RETURNS!







SMART FUNDING HISTORY

SMART FUNDING HISTORY

SMART creation in 2002 – inherited ROW but limited revenues

- Only \$450,000 in annual lease revenue

To begin project SMART required funding for:

- CEQA Process
- Conceptual Design
- Ballot Measure Planning
- Strategic Plan including Operating Cost models

SMART FUNDING HISTORY

EARLY FUNDING PARTNERS:

- State of California: \$37 million in Traffic Congestion Relief Program Funds
- Sonoma County Measure M Sales Tax Revenues: 2004 sales tax measure: Rail set-aside 5% = \$1.2 million annually

SMART FUNDING HISTORY

- Passage of Sales Tax 2008: Approved by voters 70%
- Project Cost estimate: \$541 million
- Expectation of sufficient funding for 70-mile project:
 - » \$890 million over 20 years to pay project/debt service
- “Great” recession – economic collapse 2009:
 - » Now \$664 million over 20 years
- Additional regulatory other costs: Positive Train Control

SMART FUNDING HISTORY

RESPONSE TO REALITIES:

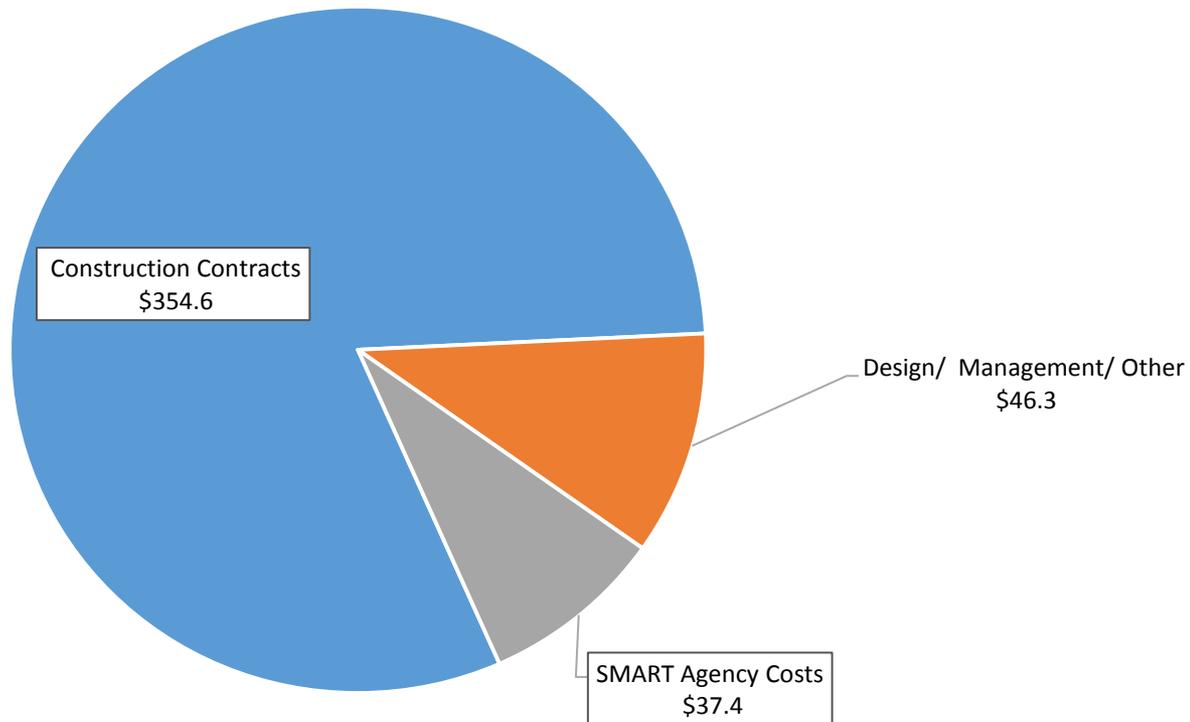
- Board phasing decision 2011-- project cost: \$360 Million
- Original Phase 1 project: 39 miles to be completed with available funds
- Phase 1 plan later updated as newer segments, elements added
- Current Plan: 44 Miles; project cost \$438 million

SMART FUNDING PRESENT

FUNDING FOR PHASE 1		
Local Funds	332.2	Sales Tax and Other
		Bond Sale
		Measure M
Regional Funds	48.4	Bridge Toll
State Funds	37.3	Proposition 116
		State and Local Partnership
		EEMP
Federal Funds	20.4	ISTEA
		TE
		OBAG
	\$438.3 Million	TOTAL FUNDING

PROJECT COST 2015

SMART PROJECT BUDGET \$438.3 million
Categories of Costs (millions)





PROJECT OVERVIEW

PHASE 1 PASSENGER RAIL SERVICE



- 43 mile first phase: Downtown San Rafael to North Santa Rosa
- 10 stations
- 7 two-car train sets
- Operations & Maintenance Facility
- Serves 70-80% of estimated ridership for total system
- Service start-up: 2016

PHASE 1 STATIONS



- **Santa Rosa**
 - » Airport Boulevard
 - » Guerneville Road
 - » Railroad Square
- **Rohnert Park**
 - » Rohnert Park Expressway
- **Cotati**
 - » East Cotati Avenue
- **Petaluma**
 - » Downtown
- **Novato**
 - » Novato North (Atherton)
 - » Novato South (Hamilton)
- **San Rafael**
 - » Marin Civic Center
 - » Downtown

SMART PASSENGER CARS



- ✓ Self-propelled DMU
- ✓ Manufacturer: Sumitomo Corp. of America/Nippon Sharyo
- ✓ Top technical score, lowest price
- ✓ “Buy America” compliant
- ✓ Assembled in Rochelle, Illinois
- ✓ Environmentally-friendly Tier 4 engines
- ✓ Economical to operate
- ✓ Level boarding
- ✓ ADA-compliant
- ✓ Comfortable for longer trips
- ✓ Opportunity to expand fleet as ridership grows

SMART PASSENGER CARS



KEY OPERATING DETAILS



- **79mph Top Speed**
- **30 trains per day (15 in each direction)**
- **½ hr. headways during peak periods**
- **6 Trains in Service**
- **Two-way operation on a single track railroad**
- **Requires “passing sidings” (double track segments)**

CONSTRUCTION PROGRESS TO DATE

Construction Start Date	May 9, 2012
Started Track Rebuilding	July 7, 2012
Total Track Rebuilt	41 miles (out of 43 miles)
Passing Sidings Built	4 (out of 4)
Bridges/Trestles Rebuilt or Repaired	48 (out of 49)
Grade Crossings Rebuilt	56 (out of 56)
Platform Footings & Walls	10 (out of 12)
Systems Ductbank Installation	Nearly Complete (43 miles)
Local Subcontractors/Labor	Approx. 50% local subcontractors accounting for about ½ construction hours – more than 183,500 local labor hours to date
Local Business Utilization As of 1/26/15	\$24 million to date (services & materials)



TRACK WORK

Before & after track reconstruction



BRIDGES AND CULVERTS

Existing timber trestle, completed precast concrete trestle



CROSSING UPGRADES

Before & after reconstruction

SIGNAL IMPROVEMENTS

- Improved Grade Crossings
- Train Signaling System
- Communications System



OLD TRACK REMOVAL DOWNTOWN SAN RAFAEL



DOWNTOWN SAN RAFAEL



PORTO SUELLO TUNNEL



PORTO SUELLO TUNNEL



RETAINING WALL NEAR HANNAH RANCH



NOVATO CREEK BRIDGE REPLACEMENT



NOVATO CREEK BRIDGE REPLACEMENT PILE DRIVING



NOVATO CREEK BRIDGE (NEW) PLACING NEW STEEL GIRDERS



NOVATO CREEK BRIDGE: COMPLETED



SAN MARIN/ATHERTON PLATFORM: POURING CONCRETE



SAN ANTONIO CREEK BRIDGE



SAN ANTONIO CREEK BRIDGE



SAN ANTONIO CREEK BRIDGE



SAN ANTONIO CREEK BRIDGE



HAYSTACK BRIDGE – PETALUMA RIVER



HAYSTACK BRIDGE – PETALUMA RIVER



HAYSTACK BRIDGE



HAYSTACK BRIDGE



HAYSTACK BRIDGE



HAYSTACK BRIDGE: LIFTING 80' BY 6' DIAMETER REBAR CAGE FOR PLACEMENT IN THE DRILLED HOLE



HAYSTACK BRIDGE: DRILLING PILE HOLES



HAYSTACK BRIDGE: FOUNDATION



HAYSTACK BRIDGE



TRACK WORK NEAR IGNACIO WYE



TRACK CONSTRUCTION



SWITCH INSTALLATION



AIRPORT BLVD. PLATFORM



OPERATIONS & MAINTENANCE FACILITY



OPERATIONS & MAINTENANCE FACILITY



SIGNAL WORK: INSTALLING CABLE



THE UNEXPECTED



CHIMERA COAST REDWOOD TREE



MADE IN THE U.S.



- Shorter shipping distances = reduced emissions
 - » Rails manufactured in Pueblo, CO
 - » Ties made in Spokane, WA
 - » Trains assembled in Rochelle, IL
 - » Ballast – Local suppliers
- New rail has majority recycled content

SMART SUSTAINABILITY SUMMARY



The new Haystack Bridge is a re-purposed span from Galveston, TX.

- 100% of old track materials are being salvaged for re-use or recycled
- New concrete ties and steel rail are inert materials
 - » Net environmental benefit from removing old materials
- Rails and ties being shipped by rail
 - » One ton of freight can be shipped nearly 500 miles on one gallon of fuel

ENVIRONMENTAL MITIGATION



- Project Mitigation Site
- 56-acre Mira Monte Marina property purchased October 2013 as part of environmental mitigation program
 - » Between Marin & Sonoma counties
 - » Provides wetland restoration & preservation and habitat restoration
 - » Significant taxpayer savings vs. mitigation bank purchases
 - » Fully within project area -- keeps environmental restoration benefits local



MIRA MONTE MARINA





MIRA MONTE MARINA



TICKET VENDING MACHINES



WHAT'S NEXT

■ 2015

- » Complete Track Construction
- » Haystack Moveable Bridge
- » Tunnel rehabilitation
- » Operations and Maintenance Facility
- » Vehicle testing
- » Signal installations
- » Station finishes

■ 2016

- » Integrated Testing
- » Simulated Revenue Service
- » Regulatory Approvals
- » Begin Revenue Service!



SAFETY AWARENESS



Parents: Help Your Students Play It SAFE!

Construction of new tracks and improved crossings on the SMART rail line started this summer, and will continue into 2014. Work trains and construction equipment are operating at all times of day. In addition, freight operations began on the shared rail line earlier this year after 10 years of non-operation. This is an **active** rail line—always expect a train!

The safety of our citizens and our workers is SMART's highest priority. For our youngest residents, rail activity on the tracks is a brand new experience. We want to help them — and help you — be prepared.

Please review these simple safety rules with your entire family:



1. The only safe place to cross railroad tracks is at a public crossing — designated by the crossbuck sign such as the one seen here.

Flashing red lights indicate a train is approaching. Never walk around or behind lowered gates at a crossing and do not cross the tracks until the gate is raised, the lights have stopped flashing and it's safe to proceed.



2. Tracks are for trains — not for games!

Tracks, trestles, rail yards and equipment are private property. It is illegal to walk, jog, bike or enter the track right of way anywhere other than a public crossing. Besides being subject to fines, trespassers endanger their lives, and the lives of others.

Pay Attention • Be Prepared • Stay Safe

The SMART train and pathway project will provide a new backbone for our regional transportation system with improved transit options for all North Bay residents. For more information, call our Construction Information Line (855) 312-7444. You can also get construction updates at www.sonomamaintrain.org, and follow our progress on Facebook ([facebook.com/sonomamaintrain](https://www.facebook.com/sonomamaintrain)) and Twitter (twitter.com/smartrain).

For documents in alternative formats, please call SMART at (707) 794-3330 or dial CRS 711



- Rail safety awareness is a key part of SMART's outreach program
- Working with national rail safety organization Operation Lifesaver
- Bi-lingual School Flyer program to build safety awareness starting with construction phase
- To date, 83,000 flyers distributed to 257 public and private schools
 - » Key safety tips have reached more than 90% of schools in areas where tracks are present
- Free safety presentations to schools, driver's education classes, community groups



Be Track SMART!



BUILDING RAIL-SAFE COMMUNITIES

REQUEST A FREE OPERATION LIFESAVER RAIL SAFETY PRESENTATION

www.caol.us



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