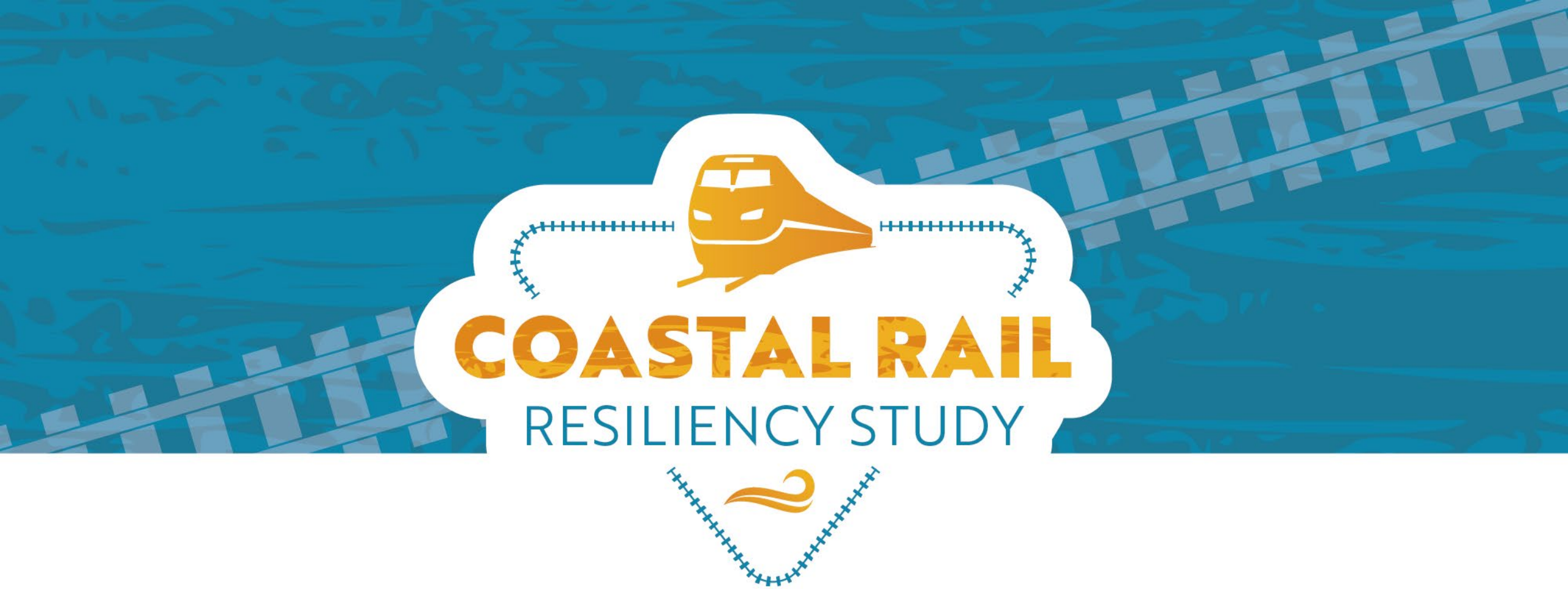


OCTA Citizens Advisory Committee

July 16, 2024

OCTA's Role in the LOSSAN Corridor

- Owns 40+ miles of the corridor, including seven miles of critical coastal track in south Orange County
- Responsibility to minimize disruptions to rail service
- Serves as the managing agency for the LOSSAN Rail Corridor Agency
- Member of the Southern California Regional Rail Authority (Metrolink) joint powers authority that uses the LOSSAN corridor

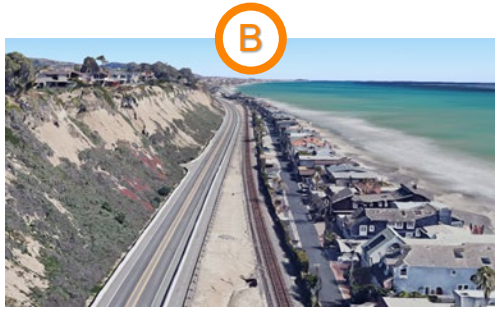
COASTAL RAIL RESILIENCY STUDY

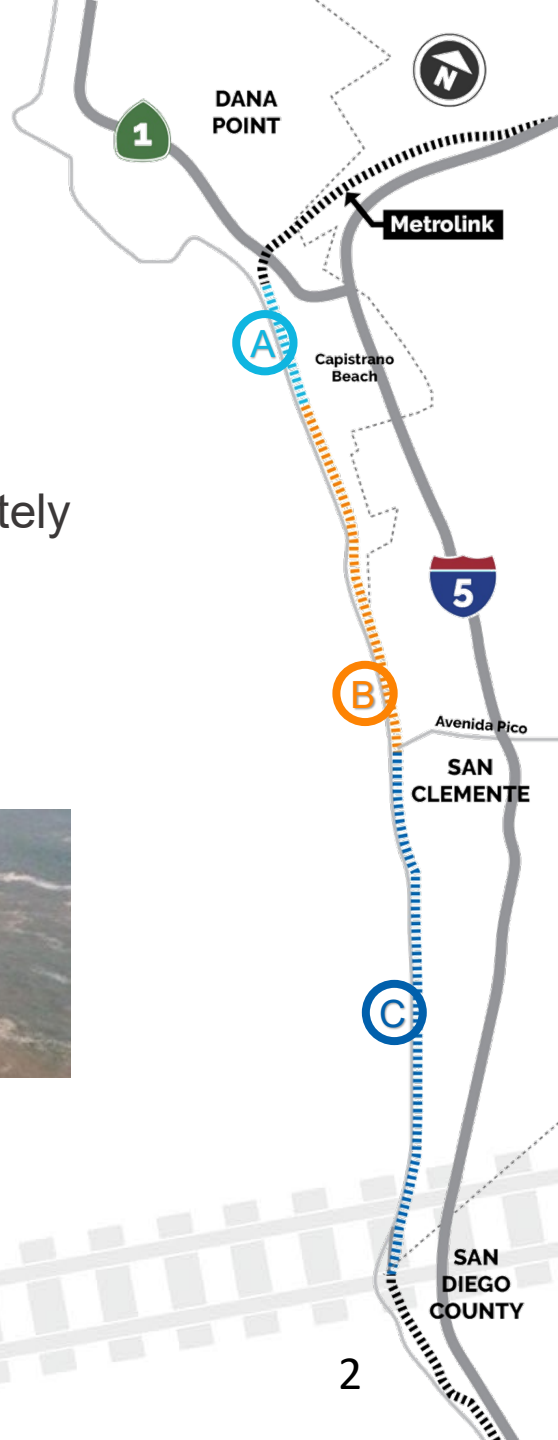
LOSSAN – Los Angeles – San Diego – San Luis Obispo
OCTA – Orange County Transportation Authority

OCTA's Beachside Rail Line

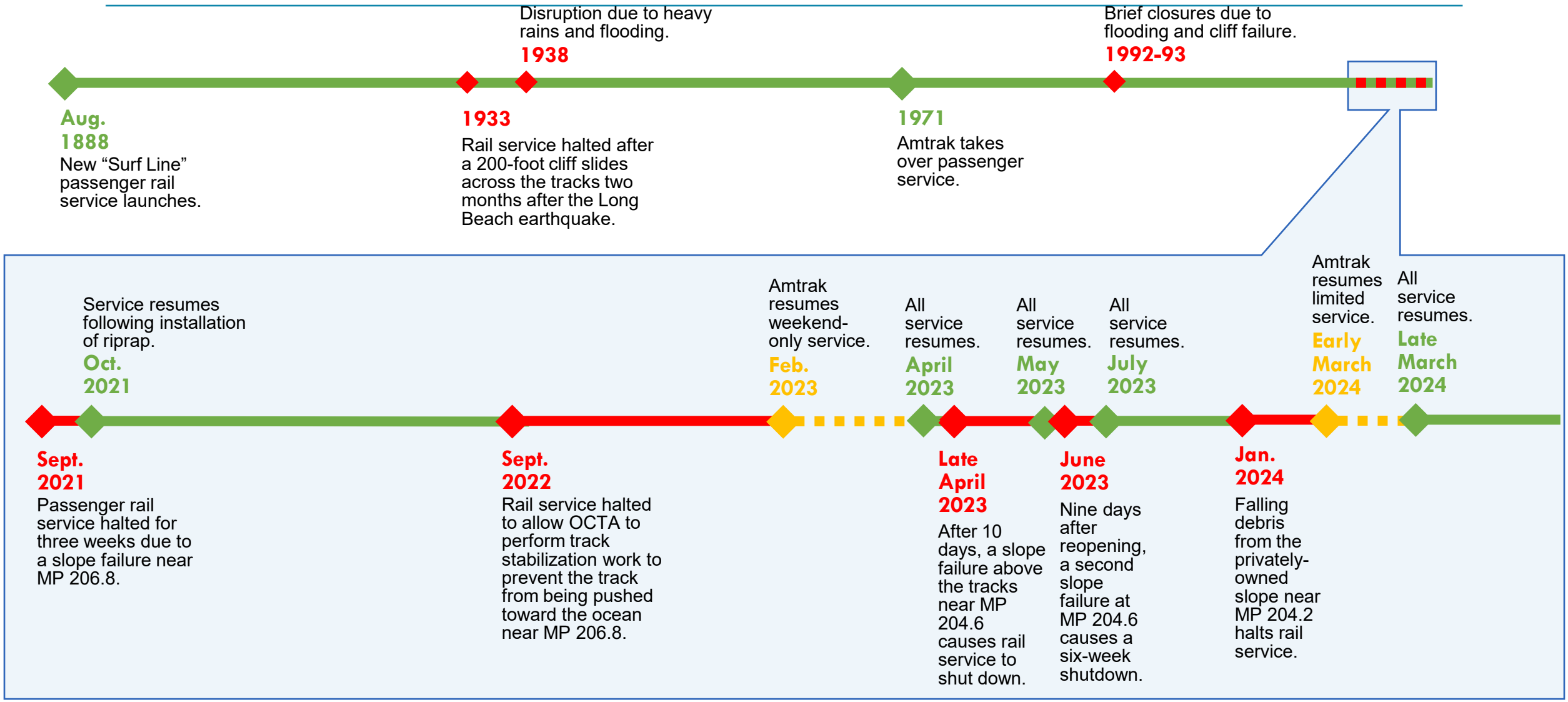
In south Orange County, tracks run along the beach, sandwiched between bluffs and the ocean.

Most of this beachside rail line is approximately 200 feet or less from the coastline.





Passenger Rail Closures



Changing Conditions

Milepost 206.8

- Beach erosion
- Recent coastal studies
- Prior studies by state/federal agencies
- Milepost 206.8 incident
- Need to develop phased solutions to address infrastructure impacts

Local Resiliency Activities

PROJECT	ACTIVITY	COST	TIMEFRAME
Cyprus Shore Initial Track Stabilization Project (MP 206.8)	Emergency placement of riprap	$8 million	September 2021
Cyprus Shore Track Stabilization Project (MP 206.8)	Installation of ground anchors in response to adjacent landslide	$13.7 million+	October 2022 – August 2023
San Clemente Track Protection Project (MP 204.6)	Installation of temporary barrier wall in response to adjacent landslide	$6 million	May – July 2023
San Clemente Track Protection Project (MP 204.2)	Removal of debris and other remedial action in response to adjacent landslide	$TBD	Jan – TBD
San Clemente Shoreline Project (Sand Replenishment) (MP ~204.5 – 205.2)	Project would add 251,000 cubic yards of sand to the beach. Repeated at every 5-6 years interval up to 2 million cubic yards.	$14.3 million (65% federal / 35% city cost sharing)	Fall 2023/ Winter 2024
San Clemente Nature-Based Coastal Resiliency Project Feasibility Study (community meeting)	This Study builds on the Shoreline Monitoring Program to promote long-term coastal resiliency in San Clemente.	$570,000 (CCC LCP Grant Round 7)	Ongoing – Summer 2025

MP – Mile Post

Coastal Rail Resiliency: A Two-Phase Approach

Coastal Rail Resiliency Study

Short- to medium-term solutions

- Study underway
- Initial Assessment to address the most vulnerable areas
- Develop options to protect 7 miles of coastal rail infrastructure at various sea levels
- Gain an understanding of climate effects on coastal rail infrastructure
- Identify potential solutions, including sand replenishment and retention
- Engage key stakeholders and agencies

Coastal Rail Long-Term Solutions Study

Long-term solutions

- Develop options for potential long-term solutions for the coastal section of rail line
- Create an action plan for key elements
- Partner with LOSSAN, state and federal agencies
- Engage key stakeholders and agencies

Short- and Mid-Term Study Milestones

1 Initial Assessment

IMMEDIATE NEEDS

- Initiated: Nov ’23
- **Address immediate needs**
- Potential reinforcement areas identified: Dec ’23
- Release Report: Feb ’24

LISTENING SESSIONS ★

- Engage with a wide range of stakeholders with unique and diverse backgrounds and needs
- Obtain feedback from stakeholders and interest groups: winter ’24

1. **Coastal Rail Resiliency Study is to address the most vulnerable areas through the initial assessment.**
2. **The study then looks at protecting the rail line in place for up to 30 years.**

These activities are occurring simultaneously.

1 - Step 1 2 - Step 2 ★ – Current Phase Board – Board of Directors

2 Short- and Mid-Term Solutions Up to 30 Years

PURPOSE & NEED/ EVALUATION CRITERIA

- Draft: spring ’24
- Informed by listening session feedback

DRAFT CONCEPT DEVELOPMENT

- Draft concepts: spring to fall ’24
- Obtain feedback from public, stakeholders and interest groups: fall ’24

REFINEMENT OF CONCEPTS

- Refined concepts: spring ’25
- Obtain feedback from public, stakeholders and interest groups: spring ’25

DRAFT FEASIBILITY STUDY REPORT

- Draft report: spring to summer ’25
- Obtain feedback from public, stakeholders and interest groups

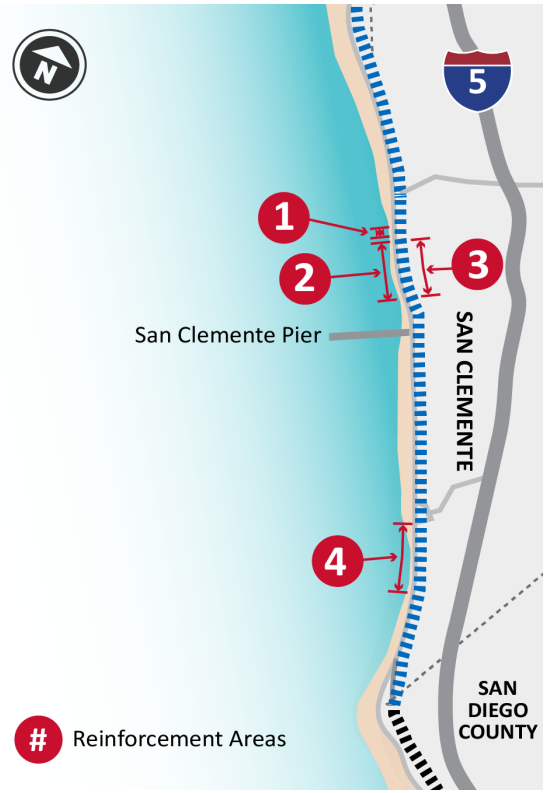
FINAL FEASIBILITY STUDY REPORT

- Final report: fall ’25
- Present to Board / publish final report: fall ’25

Initial Assessment Purpose and Need

- Four reinforcement areas were identified in December 2023
- Potential solutions need to be in place or substantially underway by fall 2024 ahead of next storm season
- Potential solutions evaluated at a conceptual level considering different materials, performance, costs, methods, and schedule

Area	Location (MP)	Challenge	Updated Potential Solutions
1	203.80 – 203.90	Ongoing deterioration of existing riprap protection	Rock (repair existing riprap) and sand nourishment
2	204.00 – 204.40	Erosion - no beach at high tide and direct wave attack damaging existing riprap protection	Rock (repair existing riprap) and sand nourishment
3*	204.00 – 204.50	Steep bluffs with high potential for failure that could impact the rail infrastructure	Catchment wall
4	206.00 - 206.67	Near San Clemente State Beach - erosion exposing areas of limited to no riprap protection	Engineered rock revetment and sand nourishment



*The inland slope experienced a failure in late January 2024 within a portion of Area 3, resulting in a passenger rail shutdown for approximately two months

MP – Mile Post

Preliminary concepts; assumptions are subject to change as more information becomes available.

Reinforcement Areas 1 & 2: Potential Solution

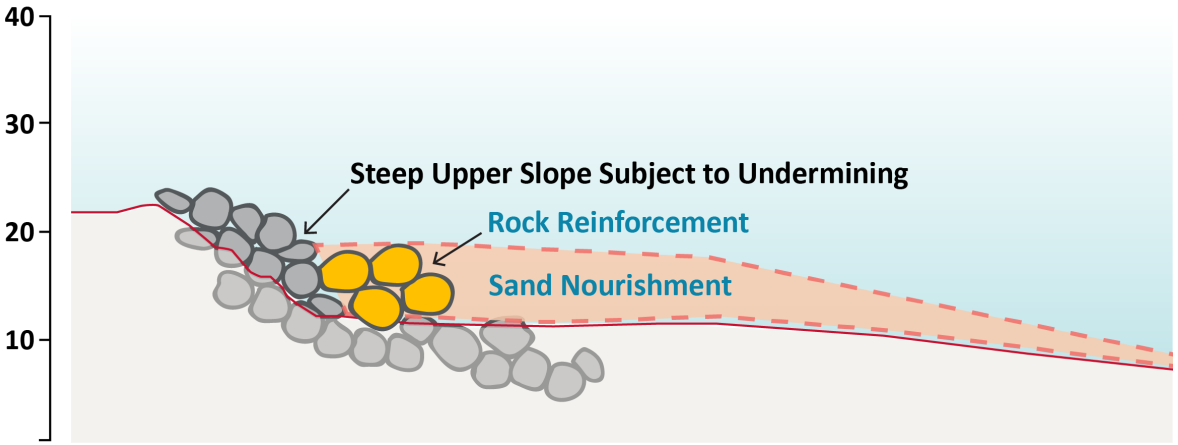
Existing Condition:

MP 203.80 – 203.90 and 204.00 – 204.40

Potential Solution UPDATED:

Rock (repair existing riprap) and sand nourishment

- Place 2-ton to 6-ton rock gradation
- Minimize rock encroachment on the beach
- Sand nourishment to add approximately 50-ft-wide beach fronting rock
- Prioritize eroded and over-steepened areas
- Locations based on LiDAR survey and on-the-ground evaluation



Preliminary concepts; assumptions are subject to change as more information becomes available.

Reinforcement Areas 1 & 2: Location UPDATED

MP 203.80

MP 204.40

Area 1

Area 2

ROCK REINFORCEMENT

- Approximately 7,000 tons of 2-ton to 6-ton rocks

SAND NOURISHMENT

- Sand nourishment to create approximately 50-foot-wide beach between MP 203.80 and 204.40
- Approximately 240,000 cubic yards of sand needed

Preliminary concepts; assumptions are subject to change as more information becomes available.

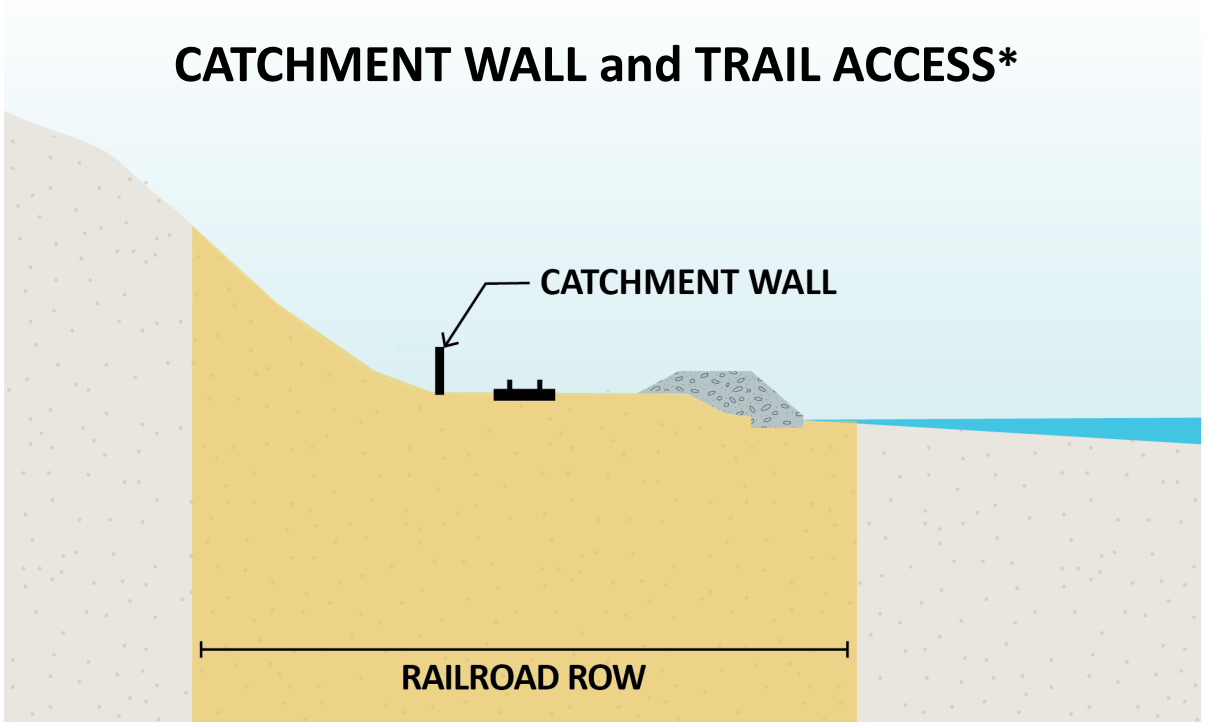
Reinforcement Area 3: Potential Solution

Existing Condition:

MP 204.00 – 204.50

Steep bluffs with a history of failure and high potential for additional movement that could impact the railroad infrastructure.

Potential Solution - UPDATED:



*Extend existing catchment wall. OCTA will work with the City of San Clemente to maintain and restore trail access.

ROW - Right-of-Way

Reinforcement Area 4: Potential Solution

Existing Condition:

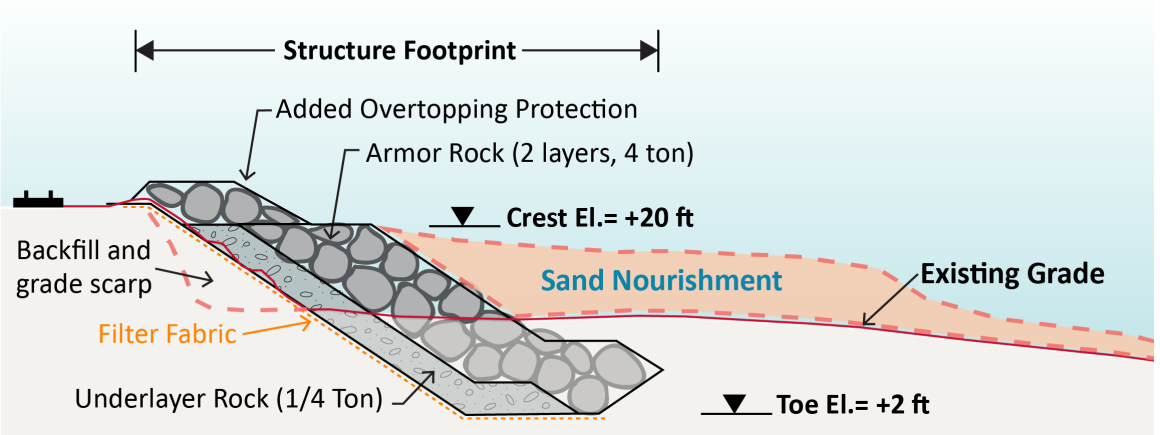
MP 206.00 - 206.67

Near San Clemente State Beach - erosion exposing areas of limited to no riprap protection.

Potential Solution UPDATED:

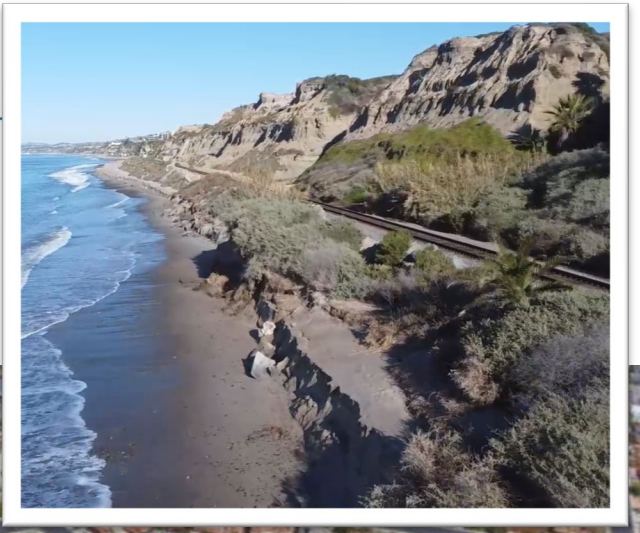
Engineered rock revetment and sand nourishment

- Place geotextile filter fabric
- Place approximately 1/4-ton rock gradation for underlayer
- Place approximately 4-ton rock gradation
- Create approximately 80 to 100-foot-wide beach through sand nourishment fronting engineered rock revetment
- Locations based on LiDAR survey and on-the-ground evaluation



Preliminary concepts; assumptions are subject to change as more information becomes available.

Reinforcement Area 4: Location UPDATED



MP 206.00

MP 206.67

Area 4: MP 206.00 - 206.67

ROCK REINFORCEMENT

- Approximately 60,000 to 77,000 tons of rock

SAND NOURISHMENT

- Sand nourishment to create approximately 80 to 100-foot-wide beach between MP 206.00 and 206.67
- Approximately 240,000 to 300,000 cubic yards of sand

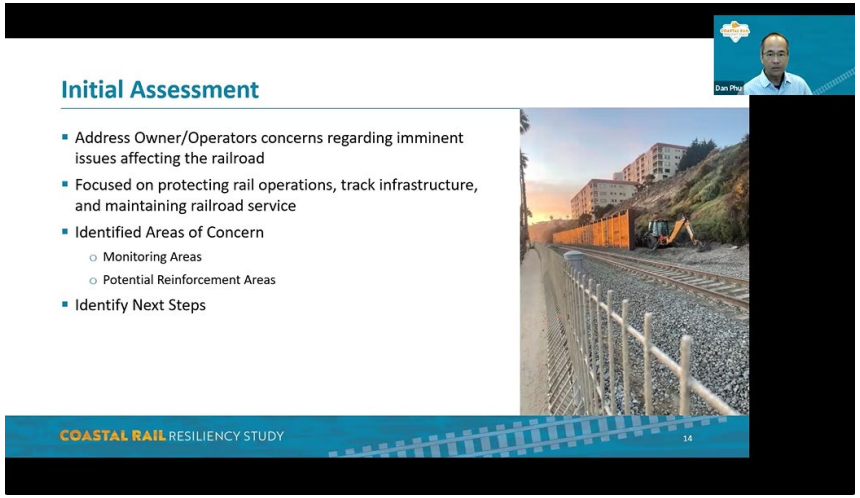
Preliminary concepts; assumptions are subject to change as more information becomes available.

Listening Sessions

Date	Listening Session	Description
01/18/24	Project Development Team (PDT)	
02/14/24	Stakeholder Working Group (SWG)	Federal, state, regional & local interest groups
02/15/24	Major Employers, Key Destinations & Other Business Interests	Business associations & entertainment
03/06/24	Freight & Goods Movement	Business & transportation interest groups
03/12/24	Emergency Responders	Police departments, fire departments, coast guards & harbor patrol
03/20/24	Coastal & Marine Habitat Community-Based Organizations	Environmental groups
04/03/24	Residential Groups	Homeowner associations (HOAs)
04/11/24	General Public	Virtual meeting
05/22/24	Bluff Residents	Virtual meeting
05/30/24	General Public	In-person meeting

Coastal Rail Resiliency Study / Initial Assessment Feedback To Date

- Consider other natural solutions (sand, living shoreline, etc.)
- Seek partnering opportunities (city, county, state, etc.)
- Integrate the previous work of others into the Study, as appropriate
- The need to follow the prescribed environmental processes
- Consider the impacts of armoring and its effects on coastal erosion
- Support for early, comprehensive, preventive action
- Obligation for OCTA to keep the railroad operational
- Continue coordinated streamlined communication of service disruption
- Concern regarding impacts to employee commute patterns and regional tourism
- Continue seeking expert input to address sand nourishment
- Ensure commitments from other agency owners to the sand solution



OCTA – Orange County Transportation Authority

Short- and Mid-Term Study Milestones

1 Initial Assessment

IMMEDIATE NEEDS

- Initiated: Nov ’23
- **Address immediate needs**
- Potential reinforcement areas identified: Dec ’23
- Release Report: Feb ’24

LISTENING SESSIONS ★

- Engage with a wide range of stakeholders with unique and diverse backgrounds and needs
- Obtain feedback from stakeholders and interest groups: winter ’24

1. **Coastal Rail Resiliency Study is to address the most vulnerable areas through the initial assessment.**
2. **The study then looks at protecting the rail line in place for up to 30 years.**

These activities are occurring simultaneously.

1 - Step 1 2 - Step 2 ★ – Current Phase Board – Board of Directors

2 Short- and Mid-Term Solutions Up to 30 Years

PURPOSE & NEED/ EVALUATION CRITERIA

- Draft: spring ’24
- Informed by listening session feedback

DRAFT CONCEPT DEVELOPMENT

- Draft concepts: spring to fall ’24
- Obtain feedback from public, stakeholders and interest groups: fall ’24

REFINEMENT OF CONCEPTS

- Refined concepts: spring ’25
- Obtain feedback from public, stakeholders and interest groups: spring ’25

DRAFT FEASIBILITY STUDY REPORT

- Draft report: spring to summer ’25
- Obtain feedback from public, stakeholders and interest groups

FINAL FEASIBILITY STUDY REPORT

- Final report: fall ’25
- Present to Board / publish final report: fall ’25

Stay Connected

Christina Byrne

Department Manager, Public Outreach

(714) 560-5717

cbyrne@octa.net

Dan Phu

Project Manager

(714) 560-5907

dphu@octa.net

Project website:

www.OCTA.net/CRRS