COASTAL RAIL RESILIENCY STUDY

Public Meeting

Tuesday July 29, 2025

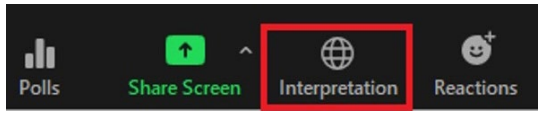
OCTA

Interpretation Available

- Via Zoom
  - Click on the “Interpretation” icon
  - Select your language of choice “English” or “Spanish”
  - To hear the Spanish interpretation only, click Mute Original Audio

Interpretación Disponible

- Vía Zoom
  - Haga clic en el icono de “Interpretación“
  - Seleccione “Spanish” (español)
  - Para escuchar solo el idioma interpretado, haga clic en “Mute Original Audio” para “Silenciar el audio original”

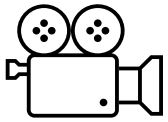


We Want to Hear from You

OCTA is committed to ensuring that all participants can fairly and clearly share ideas, comments and concerns about this project. To provide a safe and equitable process, we ask that during this meeting all participants:

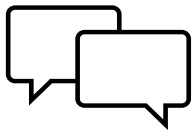
- Respect the format of the meeting
- Treat others with respect
- Address all comments to the panel
- Maintain a conversational tone

Meeting Format



- This meeting is being recorded to accurately capture your input.

- Comments will be addressed after the presentation during the Q&A session.



- Written comments and questions can be submitted through the '*Q&A*' function. Participants will be able to view them in real time.
- Both written and verbal comments are equally considered by the team.

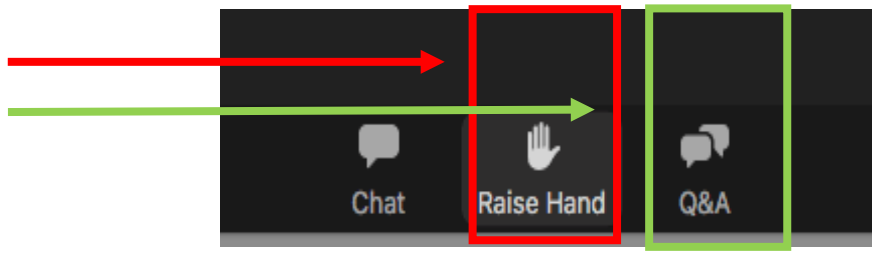
CC

- To use closed captioning, select "cc" at the bottom of the Zoom screen.

- If you would like to speak, please use the '*Raise Hand*' button at the bottom of the Zoom screen. State your name prior to providing your comment.

How to Participate

Via web



- Verbal comments: Click Participants > “raise hand”
- Type comments: Click the “Q&A” function
- Include contact information: Name and organization (if any)
- When announced, unmute your audio, you can then ask your question (s)
- You will be re-muted once you complete your comment (s)

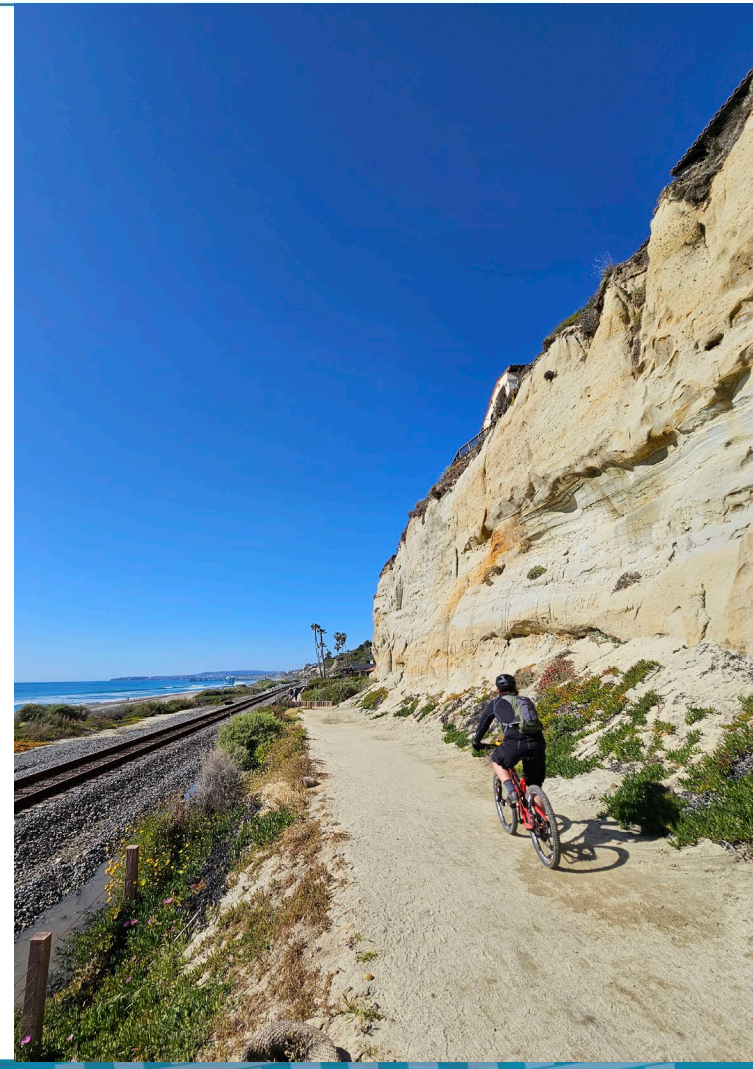
Via phone (calling in)

- Press “*9” on your keypad to “raise hand”
- You will be announced by the last four digits of your phone number
- Press “*6” to unmute your audio
- You will be re-muted once you complete your comment (s)

As a reminder, the chat will be used by the team exclusively to share information and links to resources.

Agenda

- Meeting Purpose/Focus
- History
- Draft Alternative Concepts
- Q&A Session
- Next Steps



Meeting Purpose/Focus

Emergency Rail Projects
past projects

- **Cyprus shore** *(9/22 – 4/23)* slope secured with ground anchors
- **Casa Romantica** *(4/23 – 7/23)* temporary catchment wall built
- **Mariposa Point** (1/24 – 3/24) temporary catchment wall built
- Remove temporary catchment walls at Casa Romantica and Mariposa Point when appropriate
- Mitigation discussion are ongoing for the Cyprus Shore

Coastal Rail Stabilization Priority Project
immediate needs

- Address imminent threats to maintain rail operations
- Four reinforcement areas identified as top priority
- Projects include armoring, catchment wall, trail restoration and sand replenishment
- $305M in state and federal funds secured
- Recent emergency riprap repair was completed on June 7th
- Project website

Coastal Rail Resiliency Study
short- to mid-term solutions

- Develop solutions to protect the seven mile of coastal rail infrastructure
- Support the implementation of solutions that positively impact the surrounding community

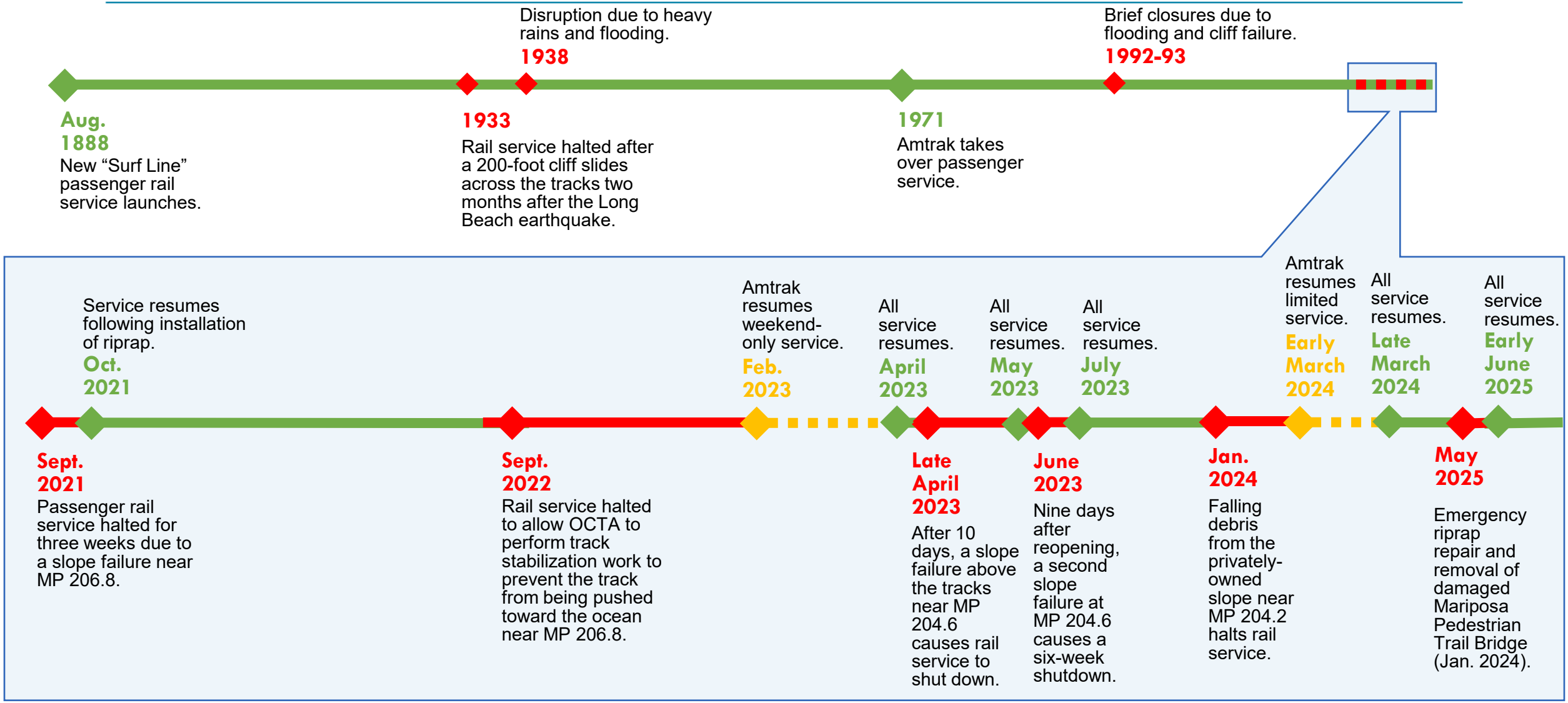
Solicit public input on:

- **Draft alternative concepts focused on the short- to mid-term (10-30 years) timeframes**

Coastal Rail Long-Term Solutions Study
long-term solutions

- State-led study
- Develop options for long-term solutions including potential rail line relocation
- Create an action plan for key elements
- Partner with LA-San Diego-San Luis Obispo Rail Corridor Agency (LOSSAN), state, and federal agencies
- Engage key stakeholders

History of Service Impacts



Study History

- Coastal Rail Resiliency Study (CRRS) kicked off in late 2023 to assess existing and future risks, challenges, and potential solutions to protect the rail line.
- Study area includes all seven miles of the coastal rail line in Orange County.
- OCTA held listening sessions in January through May 2024 to gain community, community-based organization, and stakeholder feedback.
- OCTA conducted an Expert Panel in December 2024
- Study has been split into three timeframe concentrations:
  - Immediate (<10 years)
  - **Short- to mid-term (10-30 years) ← today's update**
  - Long-term solutions (30+ years – led by State, timing TBD)

Draft Alternative Concepts (Purpose and Need)

Purpose

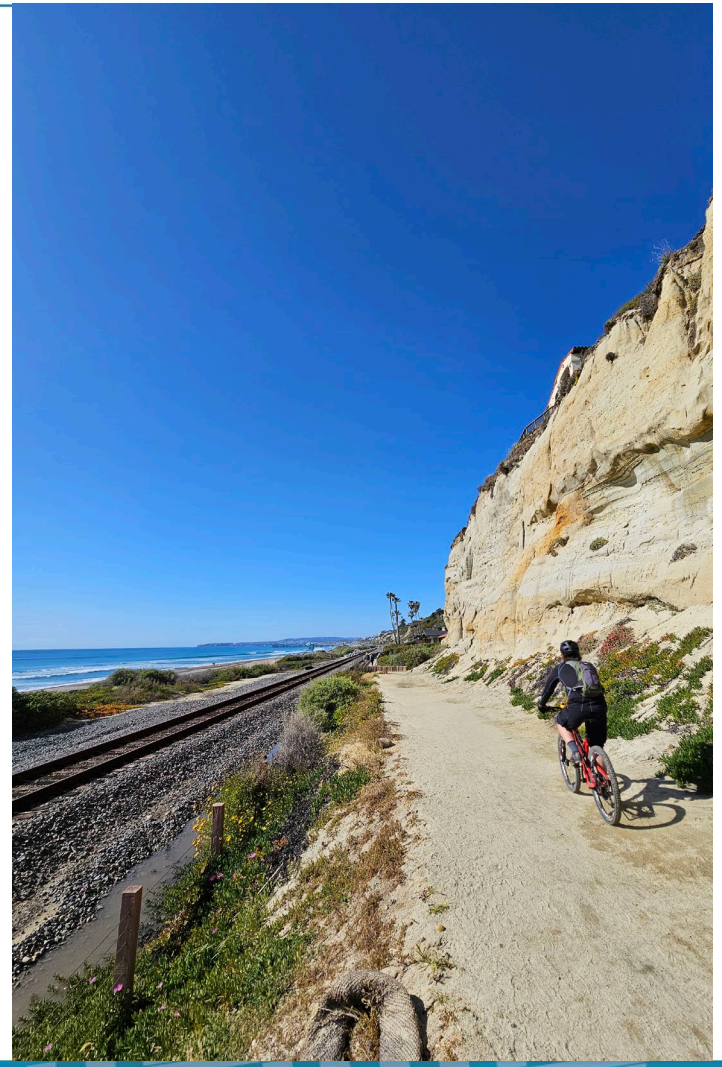
- Evaluate and prioritize adaptation strategies and engineering solutions that would maintain railroad operations generally within the existing right-of-way for up to the next 30 years.
- Identify and assess vulnerable locations that are at risk of railroad damage or operational disruptions.
- Minimize future disruptions and closures to improve service reliability.
- Support stewardship of the railroad corridor to implement multi-beneficial solutions that would positively impact the surrounding community.
- Build on the work of others in the region that would help to further protect the rail line.

Need

- A safe and reliable railroad corridor that can support the movement of people, freight, and national military readiness.
- A stable and dependable railroad corridor that is resilient against natural coastal erosion, increasing storm frequency and intensity, and accelerated sea level rise.
- Improved regional and freight operations by mediating continuous bluff failure and landslides that are impacting the railroad tracks.

Draft Alternative Concepts (Goals and Objectives)

- Continual stakeholder engagement
- Minimize passenger and freight service disruptions
- Protect the railroad in place (up to 30 years)
- Assess, identify, and develop a program of capital projects within the OCTA ROW
- Develop short-term (ten years) and mid-term (30 years) conceptual alternatives
- Work with adjacent stakeholders to develop a comprehensive coastal capital program with roles and responsibilities beyond the OCTA ROW



OCTA – Orange County Transportation Authority
ROW – Right-of-Way

Next Steps

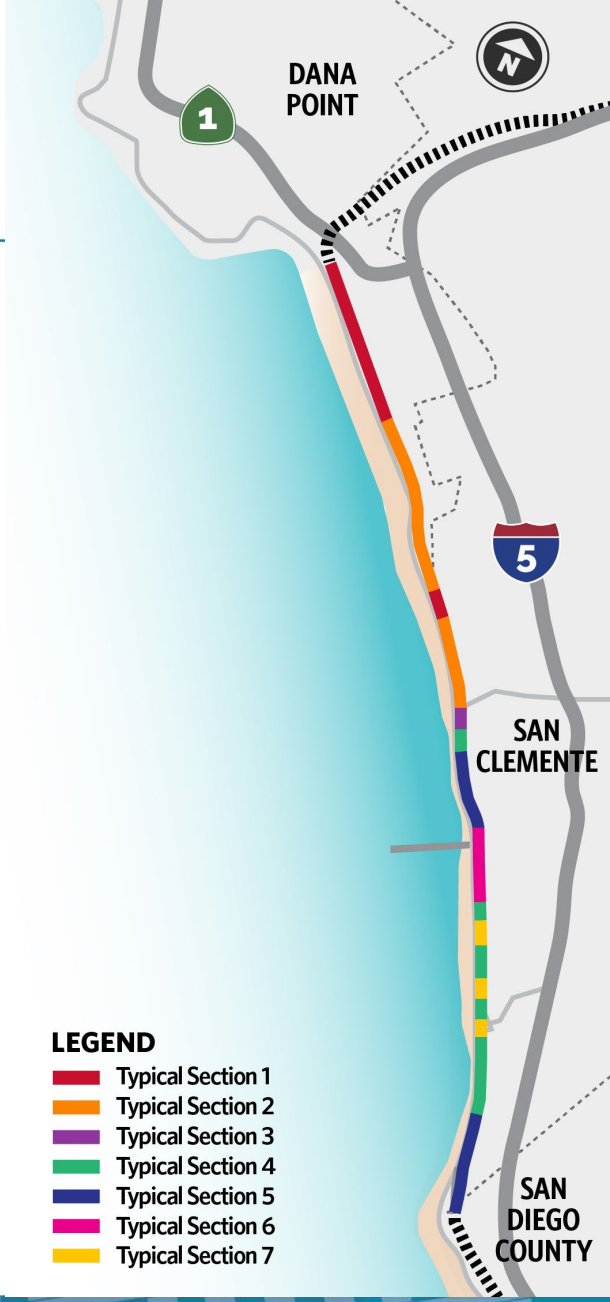
PURPOSE & NEED/ EVALUATION CRITERIA	DRAFT CONCEPT DEVELOPMENT	REFINEMENT OF CONCEPTS	DRAFT FEASIBILITY STUDY REPORT	FINAL FEASIBILITY STUDY REPORT
• Draft: summer ’24 • Informed by listening session feedback	• Draft alternative concepts: summer to fall ’24 • Obtain feedback from public, stakeholders and interest groups: fall ’24 to summer ‘25	• Refined alterative concepts: summer to fall ‘25 • Obtain feedback from public, stakeholders and interest groups: winter ’25 to spring ‘26	• Draft report: fall ’25 to spring ’26 • Obtain feedback from public, stakeholders and interest groups: summer ‘26	• Final report: summer ’26 • Present to Board / publish final report: fall ‘26

We are here

*Schedule is subject to change.
Board: OCTA Board of Directors

Draft Alternative Concepts

- Bluffside Concepts
- Beachside Concepts
- Rail Concepts



Draft Alternative Concepts*

Bluffside

1. Catchment walls (block slide debris)
2. Stabilization grading (buttress slide toe)
3. Tieback / soil nail / pin-pile walls (mitigate larger slides)
4. Ground improvement (bluff stabilization)
5. Surface matting & deep-rooted vegetation planting (reduce sediment erosion)
6. Drainage improvement via grading / detention basins / undertrack outlets
7. Deflection walls in tributaries (reduce flood and sedimentation flow rates)
8. Up-gradient cut-off drains (reduce source of water)
9. Hydraugers (lower hydraulic pressure and slide potential)

Beachside

1. Riprap placement
2. Engineered rock revetment
3. Vertical seawall
4. Hybrid structural solution
5. Beach nourishment with shoreline protection structure (1-4 above)
6. Beach nourishment with sand retention measures & shoreline protection structure (1-4 above)
7. Watershed modifications to increase beach sand supply (implemented by others)
8. No railroad action - monitor regional beach nourishment activities and participate as appropriate

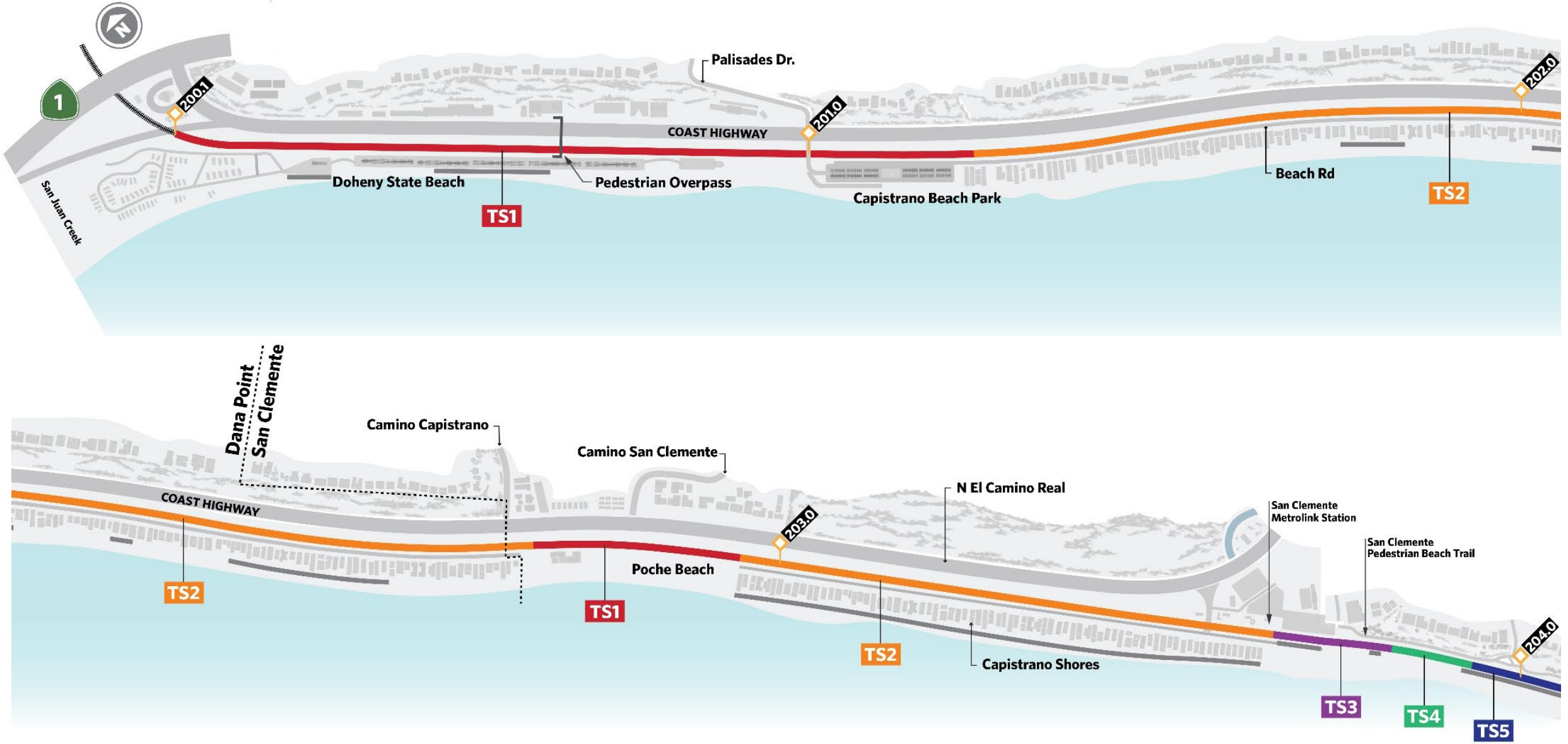
Rail

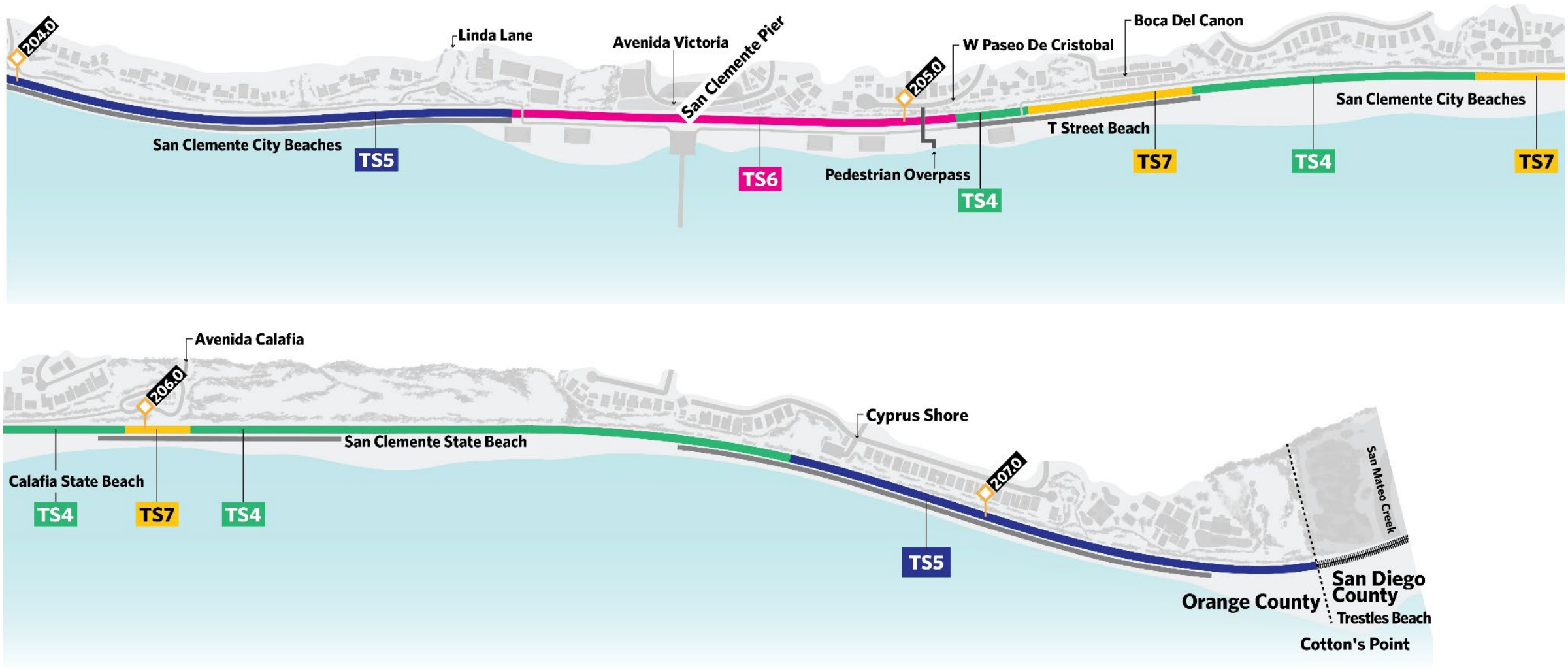
1. Elevate tracks
2. Alternative materials for critical railroad infrastructure to reduce lifecycle costs
3. Ground improvement (track-bed stabilization)

*No order of preference

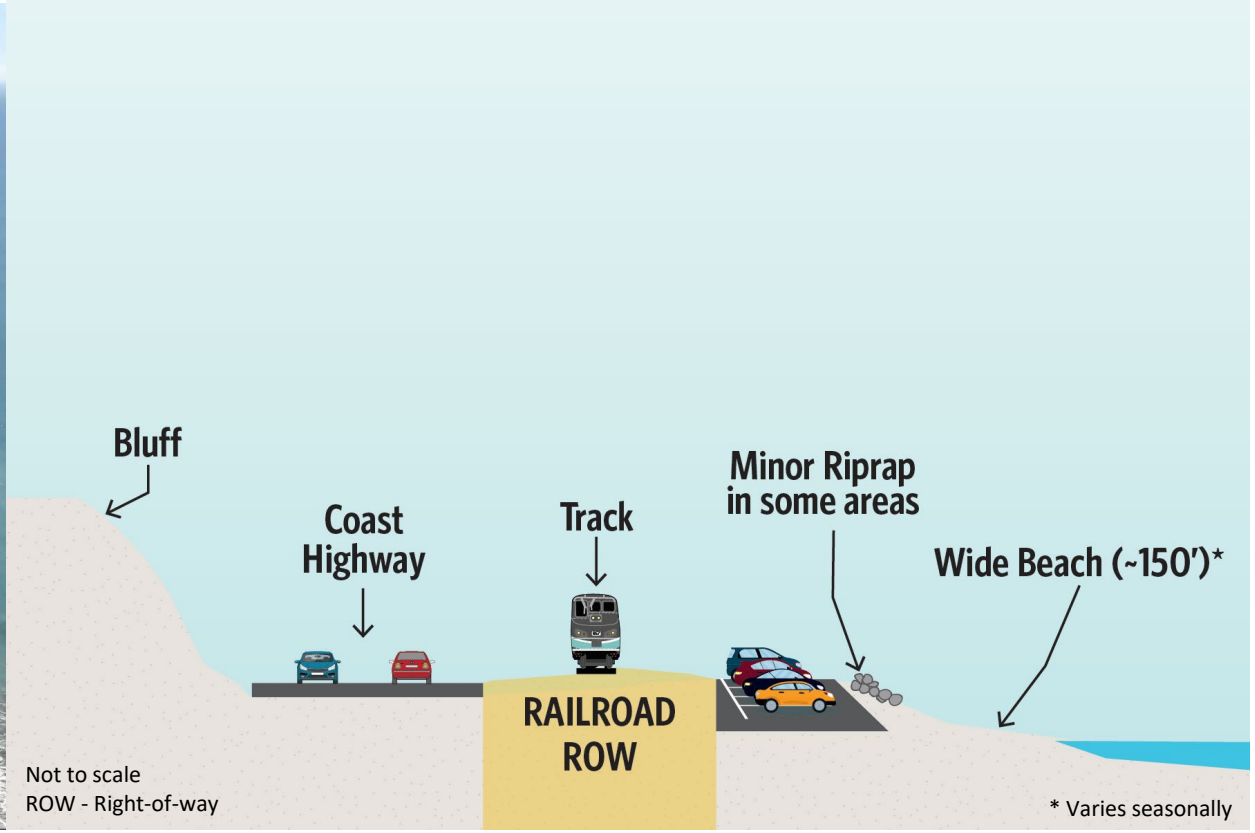
*See handout for glossary of terms

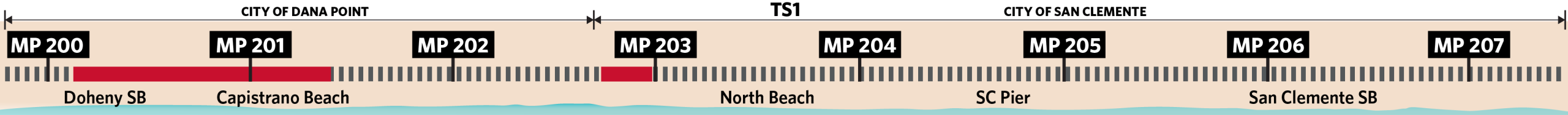
Typical Sections Review


1
200.1
Palisades Dr.
COAST HIGHWAY
201.0
202.0
Doheny State Beach
Pedestrian Overpass
TS1
Capistrano Beach Park
Beach Rd
TS2
San Juan Creek
Dana Point
San Clemente
Camino Capistrano
Camino San Clemente
N El Camino Real
203.0
San Clemente
Metrolink Station
San Clemente
Pedestrian Beach Trail
COAST HIGHWAY
TS2
Poche Beach
TS1
TS2
Capistrano Shores
204.0
TS3
TS4
TS5
Mile Post
Existing rip-rap
Typical Section 1
Typical Section 2
Typical Section 3
Typical Section 4
Typical Section 5
Typical Section 6
Typical Section 7


204.0
Linda Lane
Avenida Victoria
San Clemente Pier
205.0
W Paseo De Cristobal
Boca Del Canon
San Clemente City Beaches
TS5
TS6
Pedestrian Overpass
TS4
T Street Beach
TS7
TS4
San Clemente City Beaches
TS7
Avenida Calafia
206.0
Cyprus Shore
San Clemente State Beach
Calafia State Beach
TS4
TS7
TS4
207.0
TS5
San Mateo Creek
San Diego County
Orange County
Trestles Beach
Cotton's Point
Mile Post
Existing rip-rap
Typical Section 1
Typical Section 2
Typical Section 3
Typical Section 4
Typical Section 5
Typical Section 6
Typical Section 7

Typical Section 1: Railroad between Roadway and Beach





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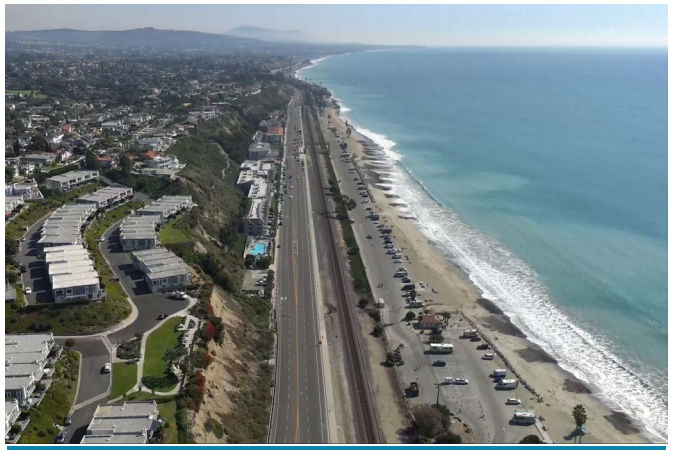
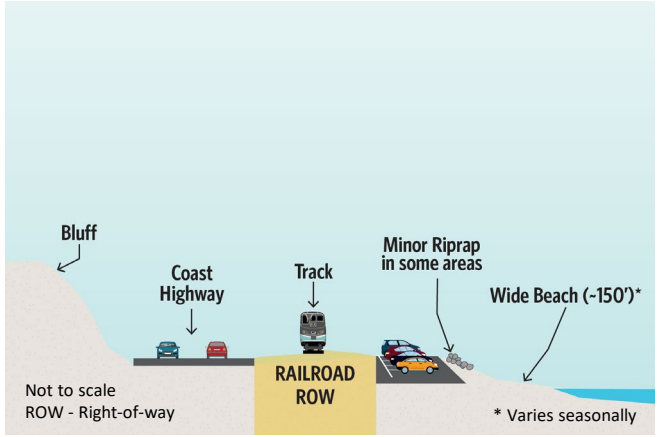


Typical Section (Existing Condition):



Bluffside

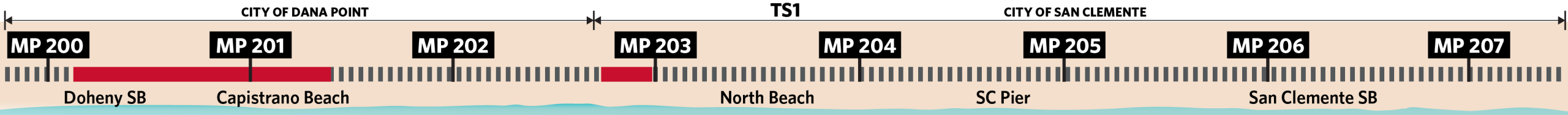
- ✓ No action

Beachside

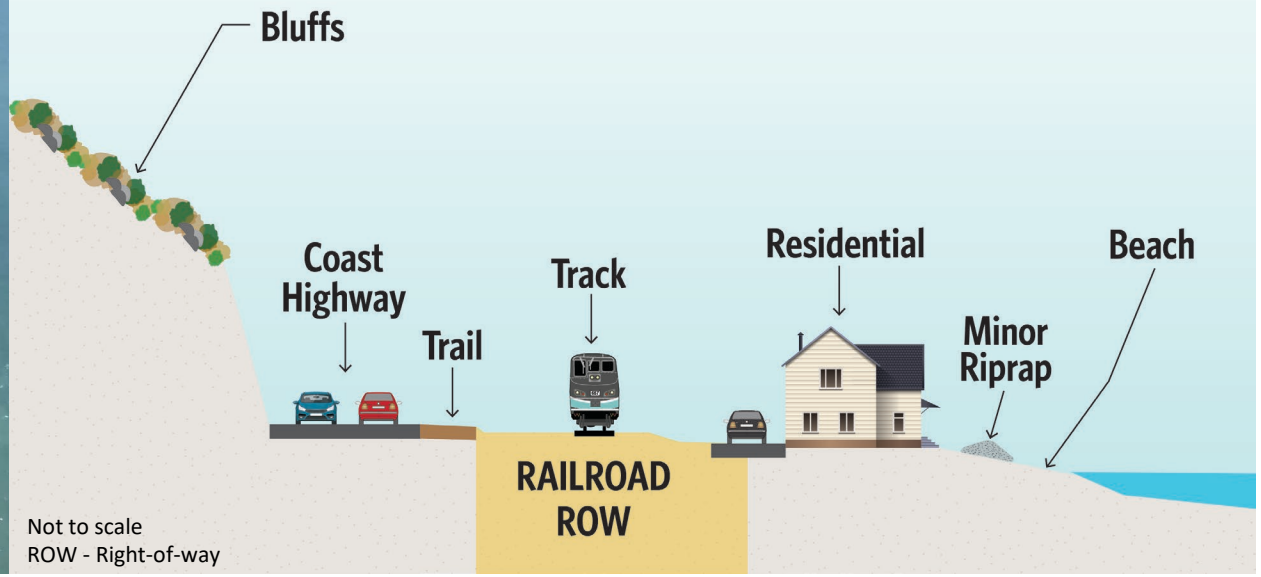
- ✓ Watershed modifications to increase beach sand supply (implemented by others)
- ✓ No direct railroad action – collaborate with regional beach sand project

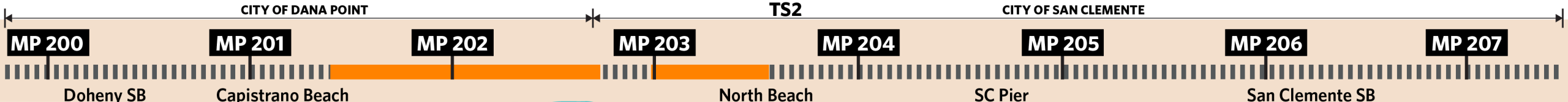
Rail

- ✓ Alternative materials for critical railroad infrastructure to reduce lifecycle costs



Typical Section 2: Railroad between Roadway and Homes





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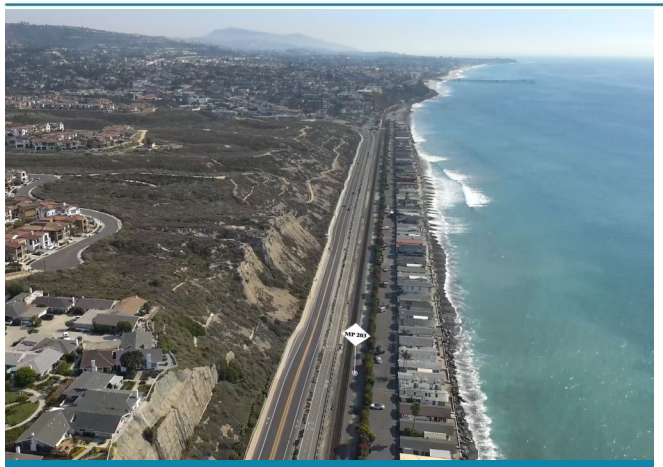

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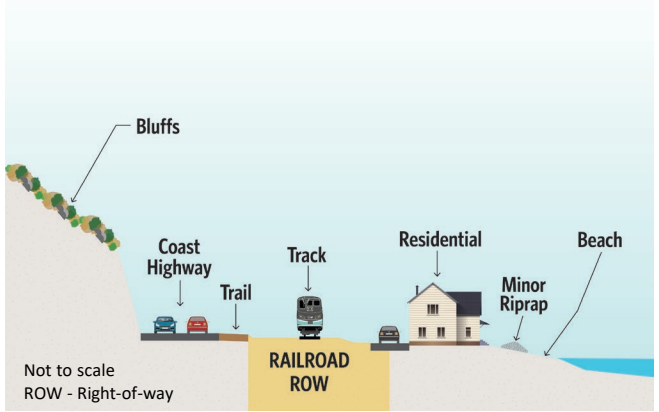
(Existing Condition):



Bluffside

- ✓ No action

Beachside

- ✓ Watershed modifications to increase beach sand supply (implemented by others)
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Rail

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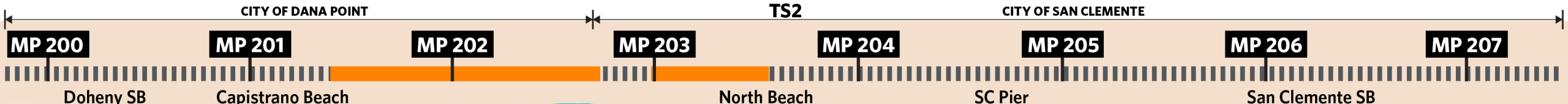
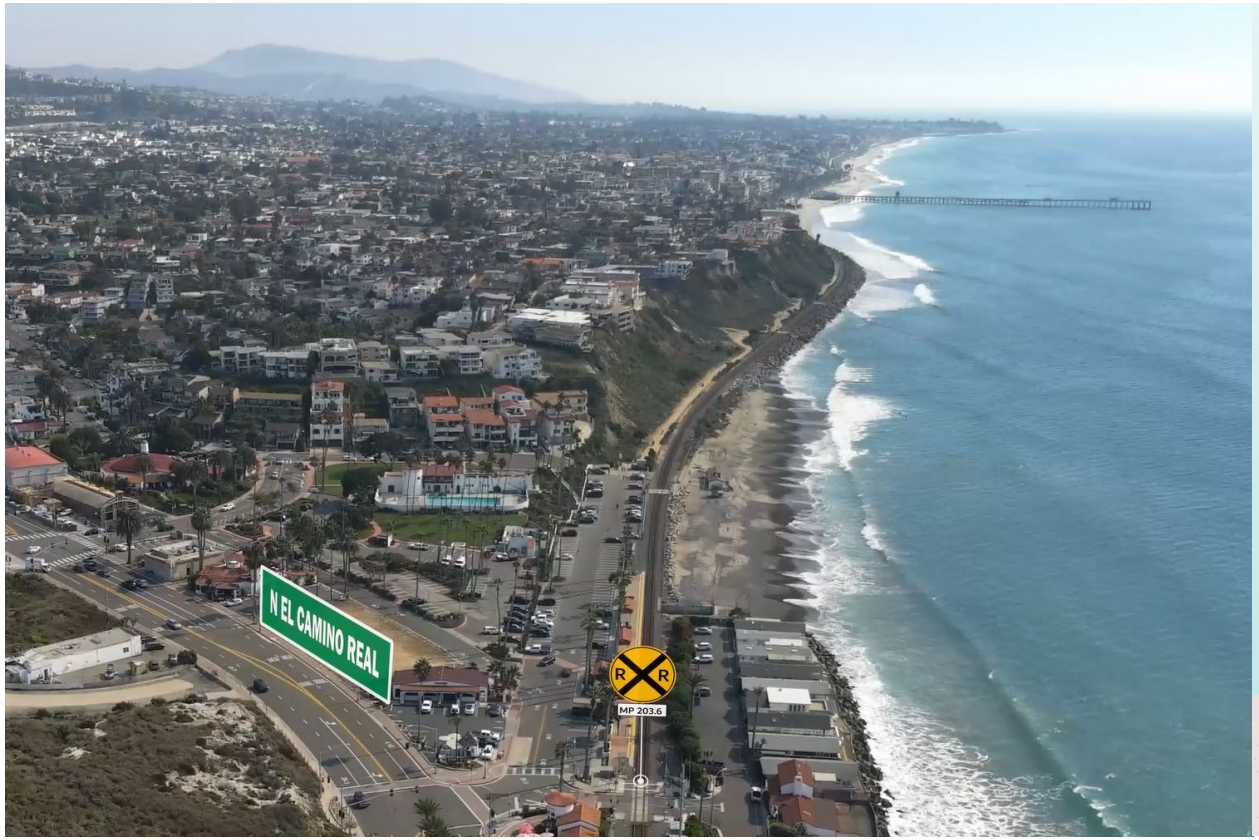
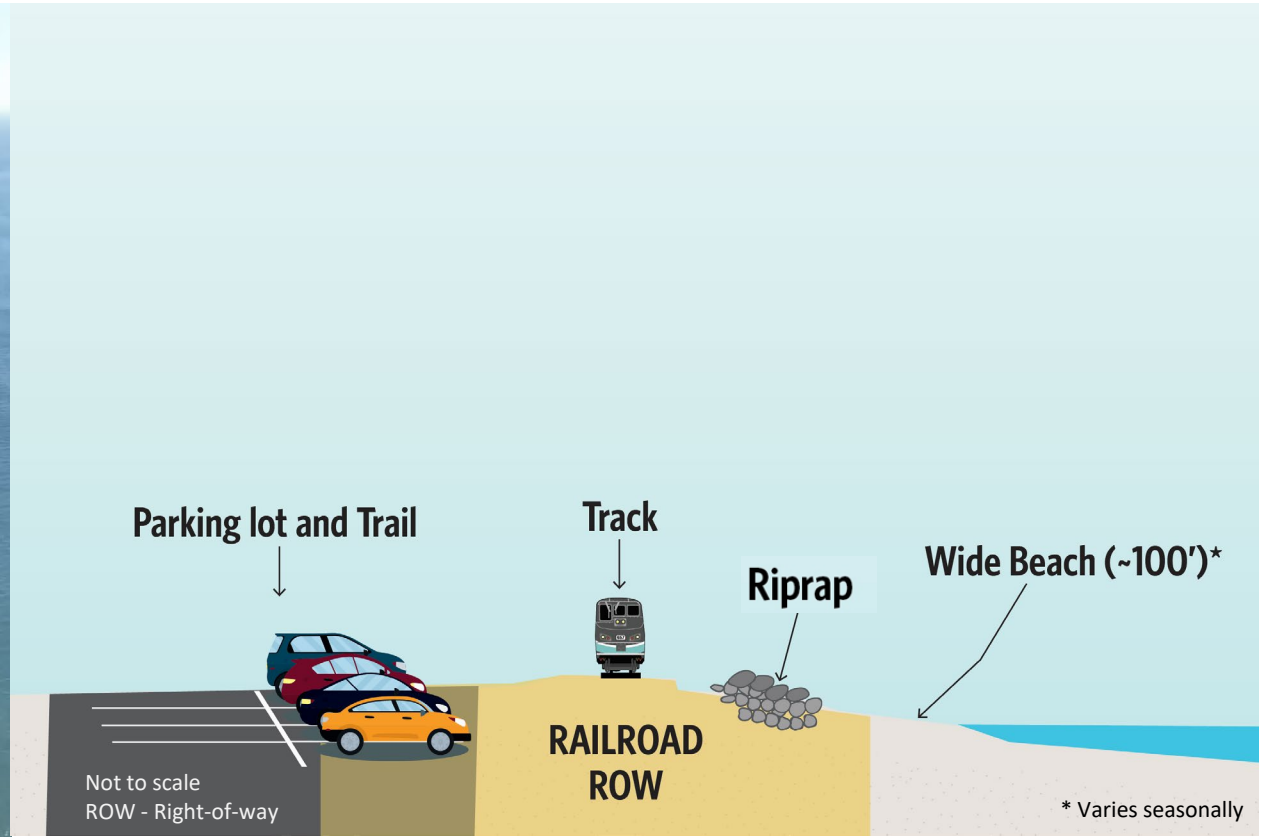
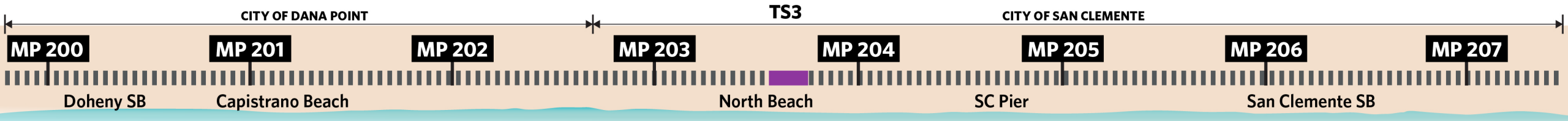


Typical Section 3: Railroad between Development/Trail and Beach







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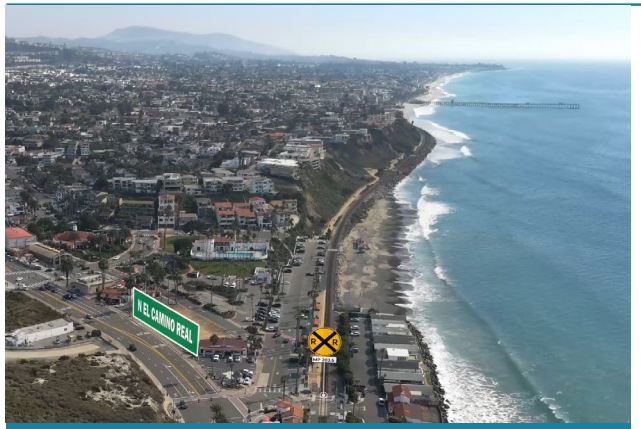

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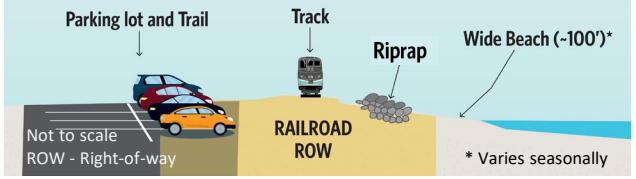


Bluffside

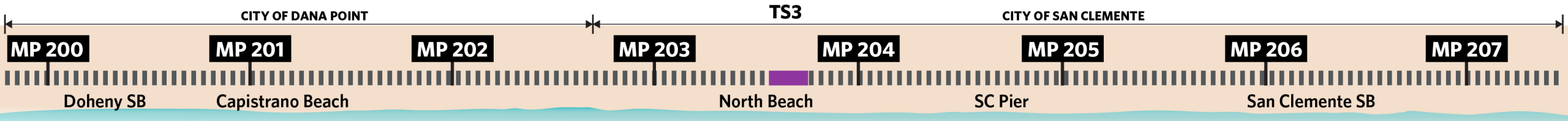
- ✓ No action

Beachside

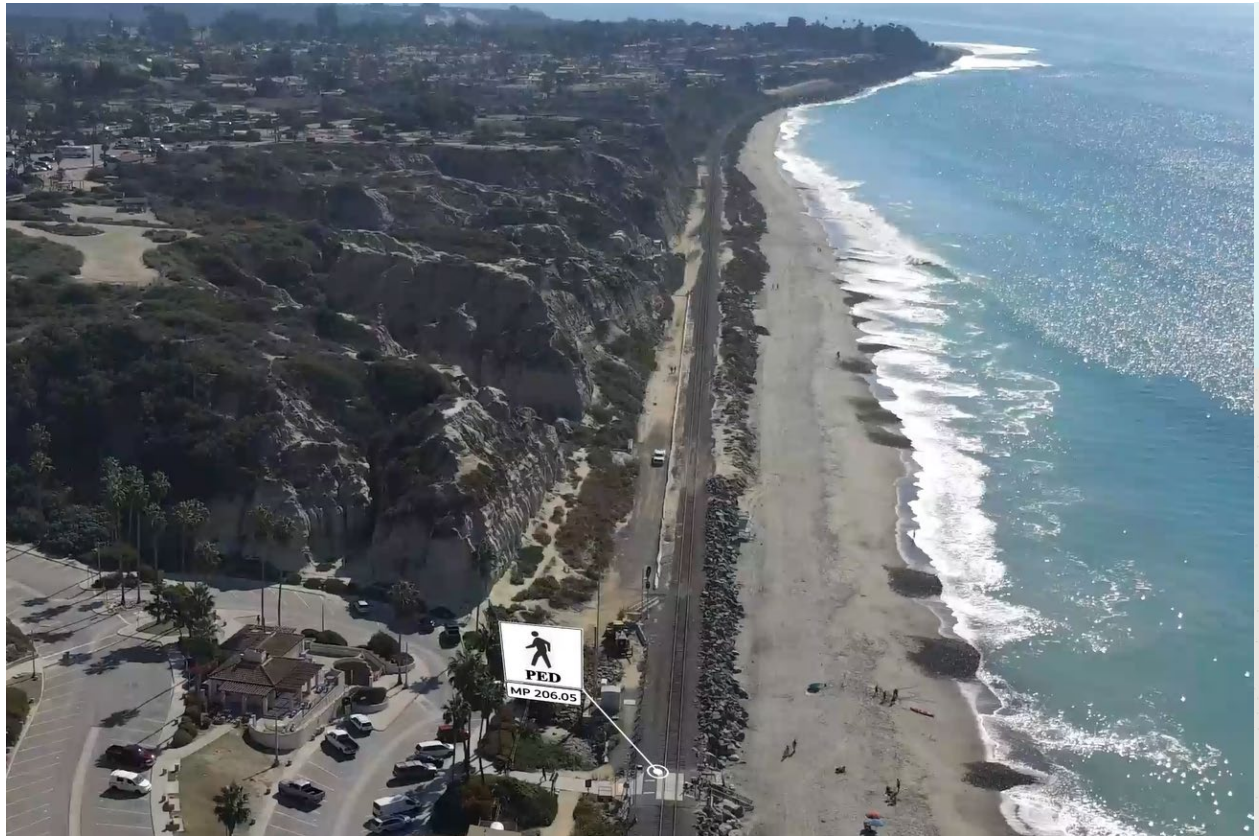
- ✓ Riprap placement
- ✓ Engineered rock revetment
- ✓ Vertical seawall
- ✓ Hybrid structural solution
- ✓ Beach nourishment with shoreline protection structure
- ✓ Beach nourishment with sand retention measures & shoreline protection structure
- ✓ No direct railroad action – collaborate with regional beach sand project

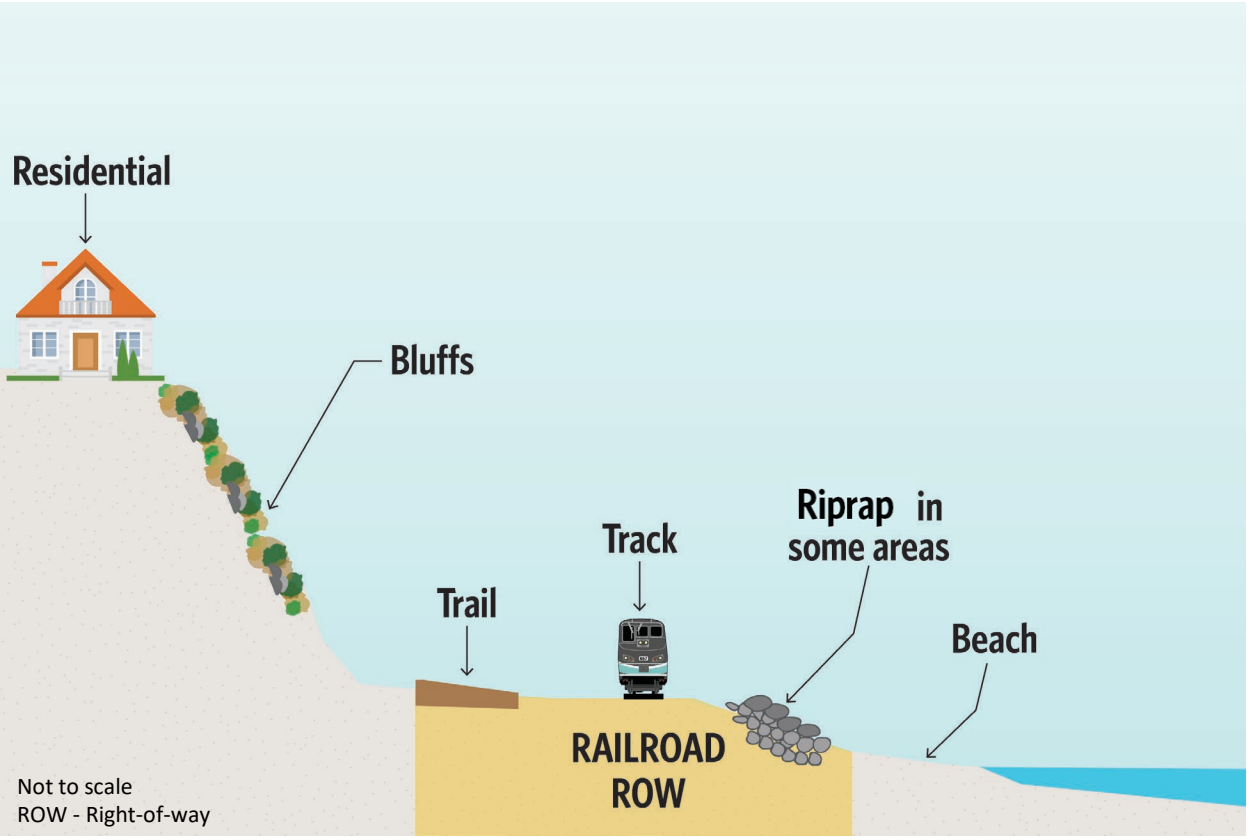
Rail

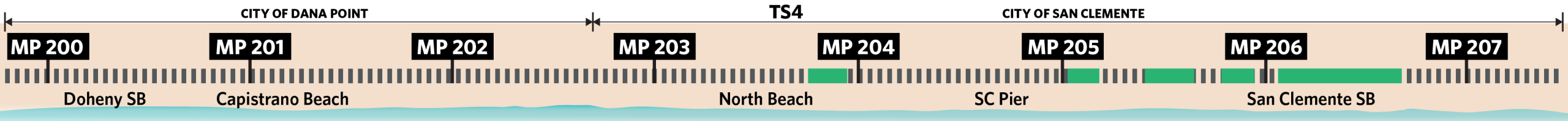
- ✓ Alternative materials for critical railroad infrastructure to reduce lifecycle costs



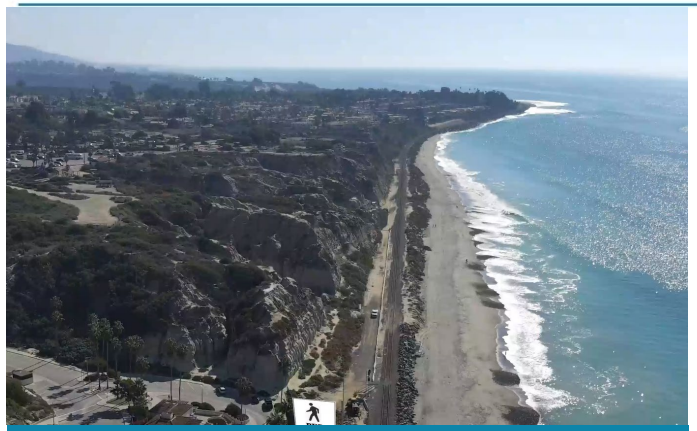
Typical Section 4: Railroad between Beach and Bluff/Trail







Typical Section 4: Railroad between Beach and Bluff/Trail



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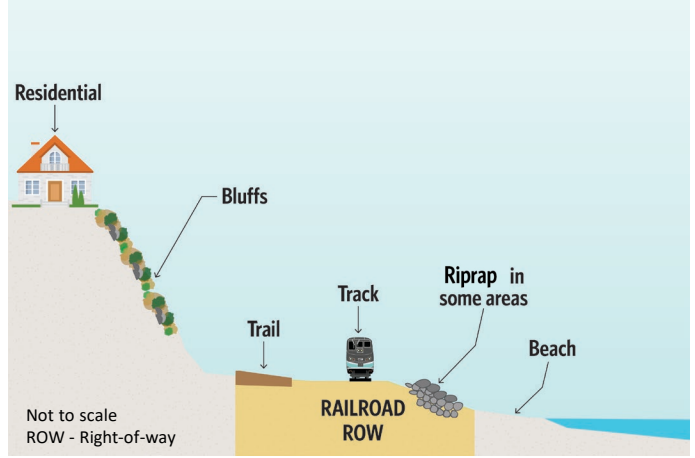

Bluffside

- ✓ Catchment walls (block slide debris)
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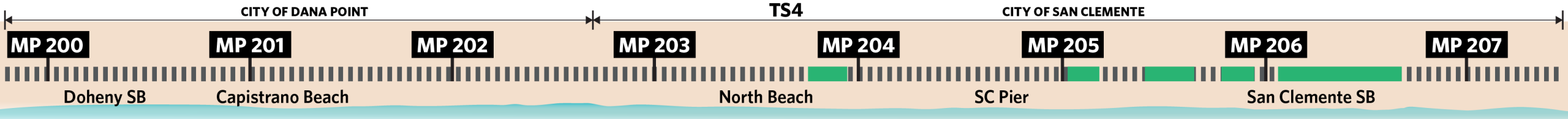
- ✓ Ground improvement (bluff stabilization)
- ✓ Hydraugers (lower hydraulic pressure and slide potential)

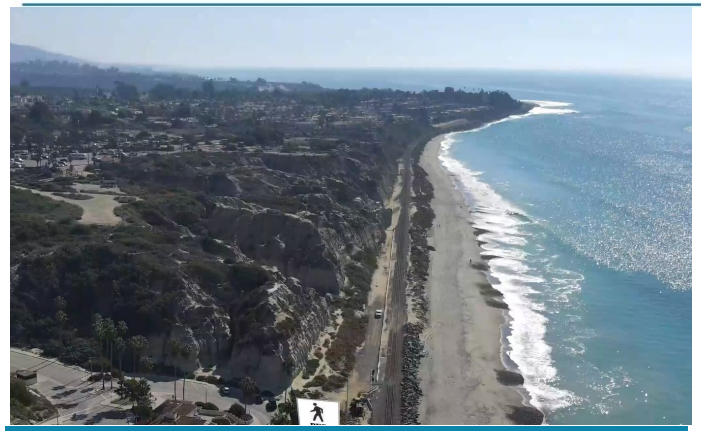
Rail

- ✓ Elevate tracks*
- ✓ Alternative materials for critical railroad infrastructure to reduce lifecycle costs
- ✓ Ground improvement (track-bed stabilization)

*South of Avenida Calafia



Typical Section 4: Railroad between Beach and Bluff/Trail (cont'd)



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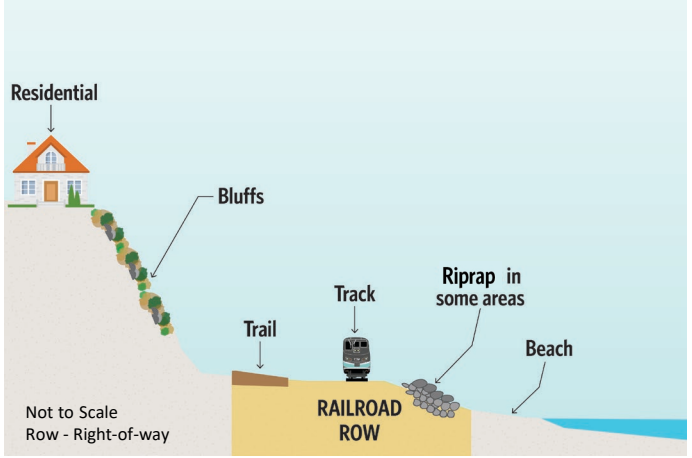
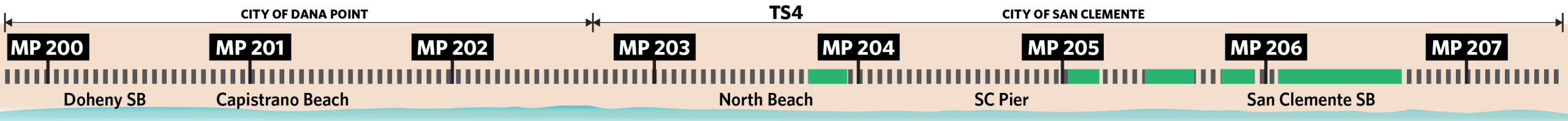
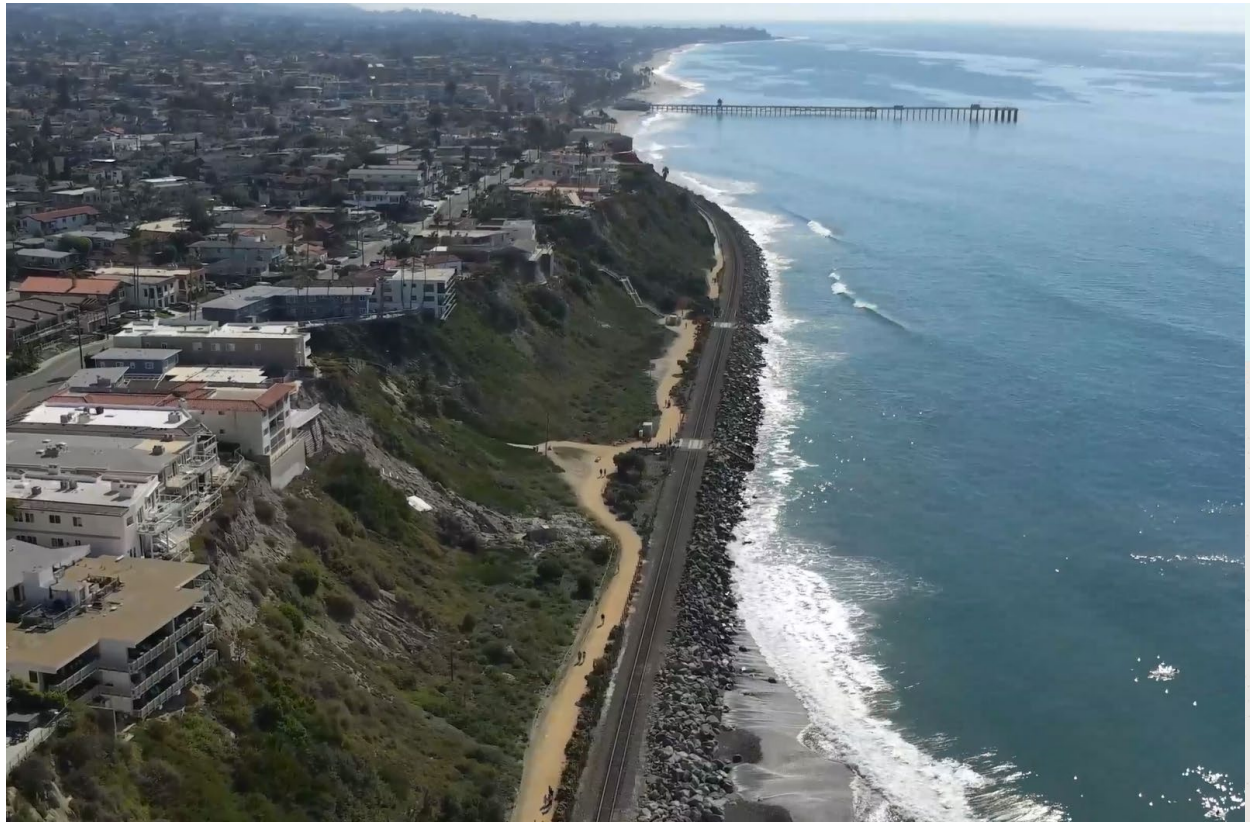


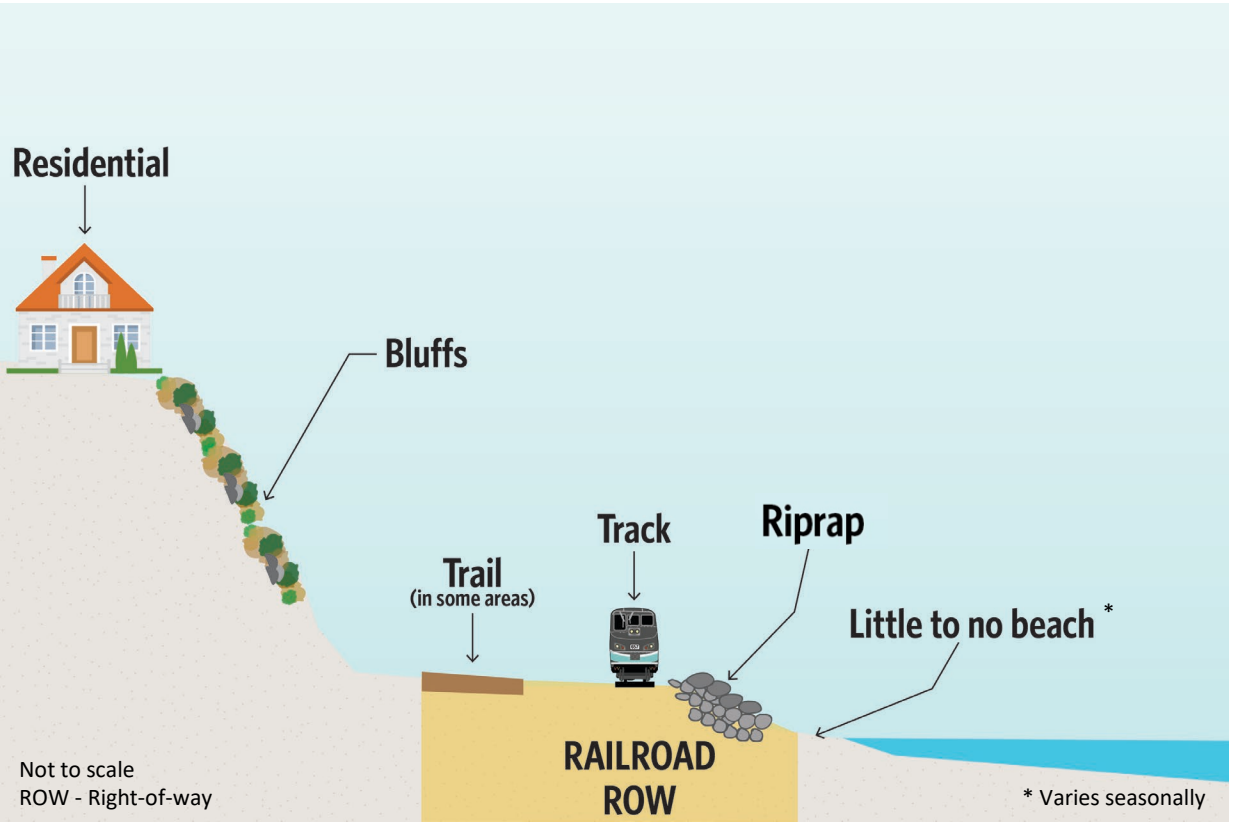
Beachside

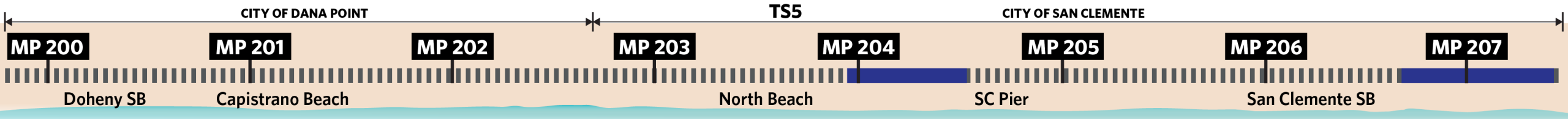
- ✓ Riprap placement
- ✓ Engineered rock revetment
- ✓ Vertical seawall
- ✓ Hybrid structural solution
- ✓ Beach nourishment with shoreline protection structure
- ✓ Beach nourishment with sand retention measures & shoreline protection structure
- ✓ No direct railroad action – collaborate with regional beach sand project



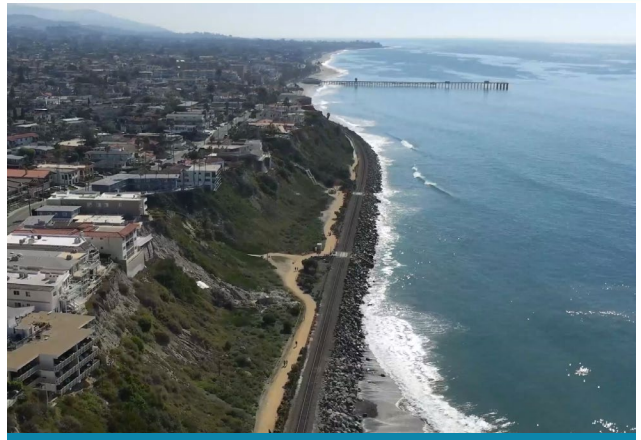
Typical Section 5: Railroad between Bluff/Trail and Ocean



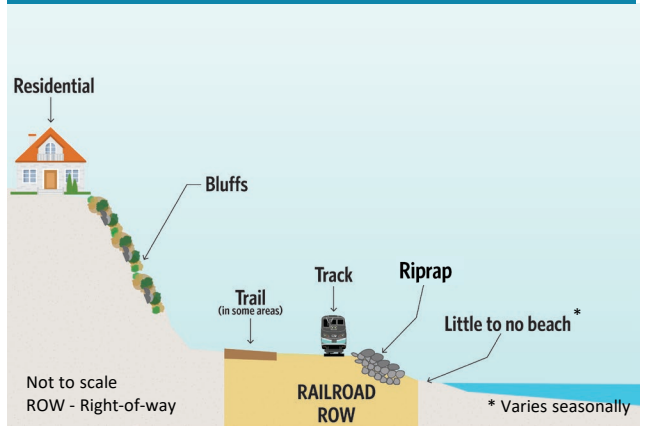




Typical Section 5: Railroad between Bluff/Trail and Ocean

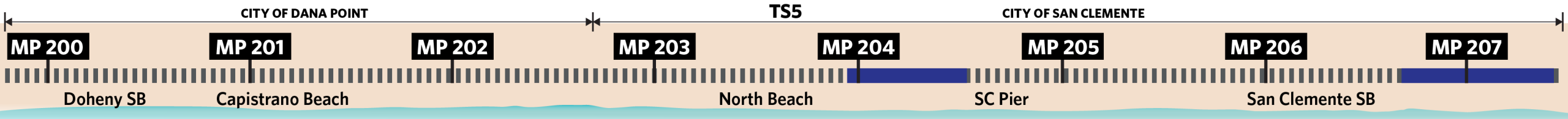


Typical Section (Existing Condition):

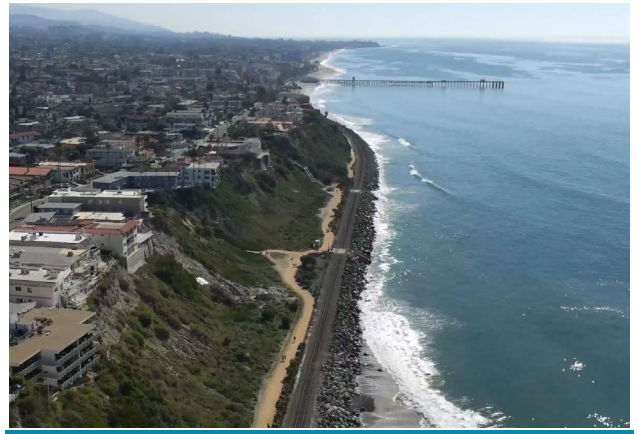


Bluffside

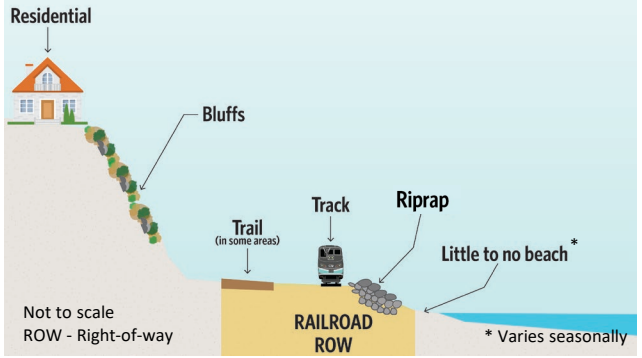
- ✓ Catchment walls (block slide debris)
- ✓ Stabilization grading (buttress slide toe)
- ✓ Tieback / soil nail / pin-pile walls (mitigate larger slides)
- ✓ Ground improvement (bluff stabilization)
- ✓ Up-gradient cut-off drains (reduce source of water)
- ✓ Hydraugers (lower hydraulic pressure and slide potential)



Typical Section 5: Railroad between Bluff/Trail and Ocean (cont'd)



Typical Section (Existing Condition):



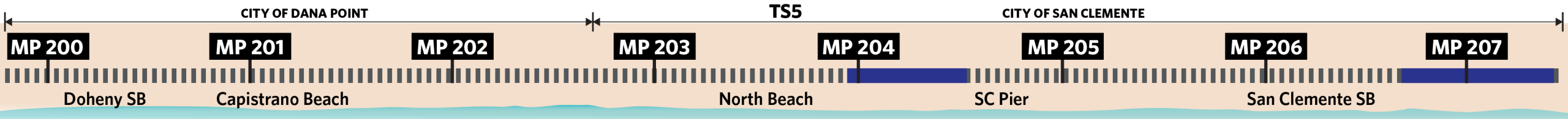
Beachside

- ✓ Riprap placement
- ✓ Engineered rock revetment
- ✓ Vertical seawall
- ✓ Hybrid structural solution
- ✓ Beach nourishment with shoreline protection structure
- ✓ Beach nourishment with sand retention measures & shoreline protection structure

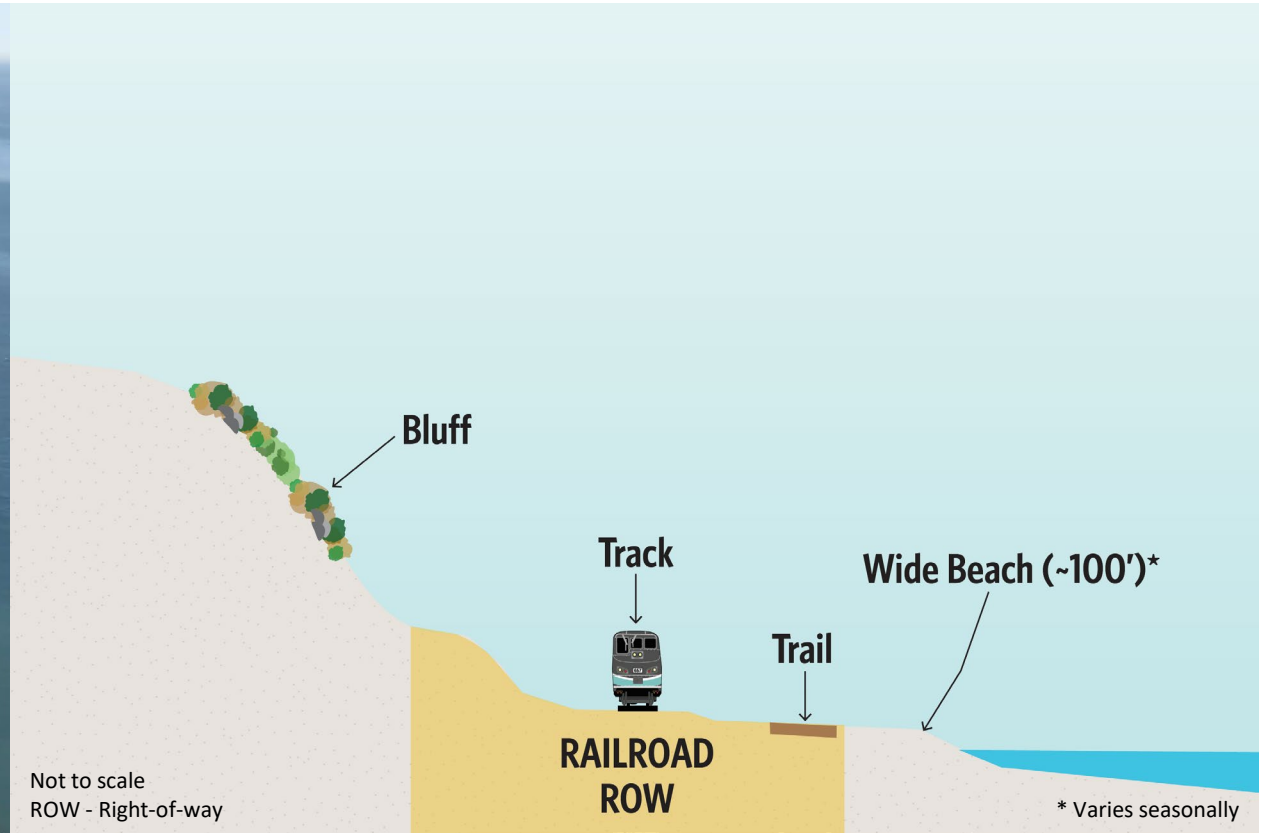
Rail

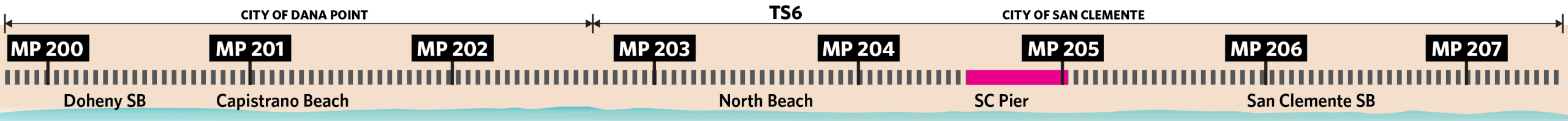
- ✓ Elevate tracks*
- ✓ Alternative materials for critical railroad infrastructure to reduce lifecycle costs

*South of Avenida Calafia

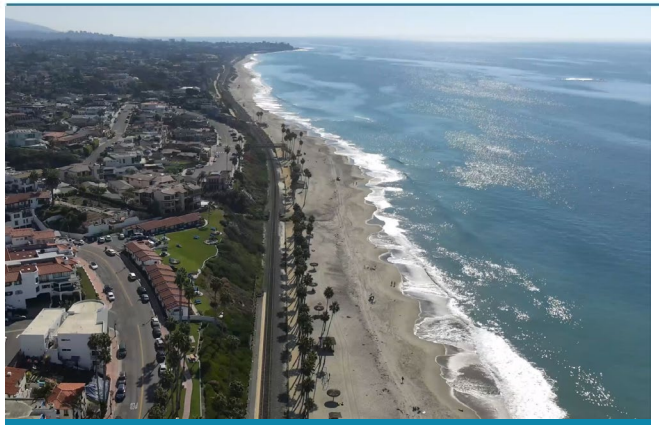


Typical Section 6: Railroad between Bluff and Beach/Trail

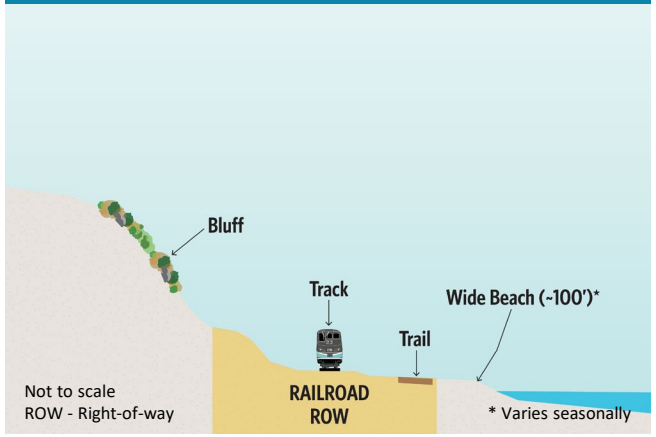




Typical Section 6: Railroad between Bluff and Beach/Trail



Typical Section (Existing Condition):



Bluffside

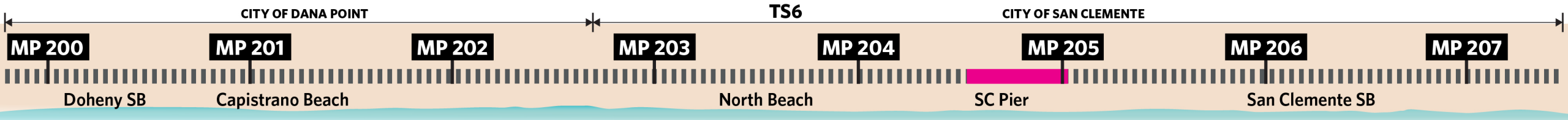
✓ Catchment walls (block slide debris)

Beachside

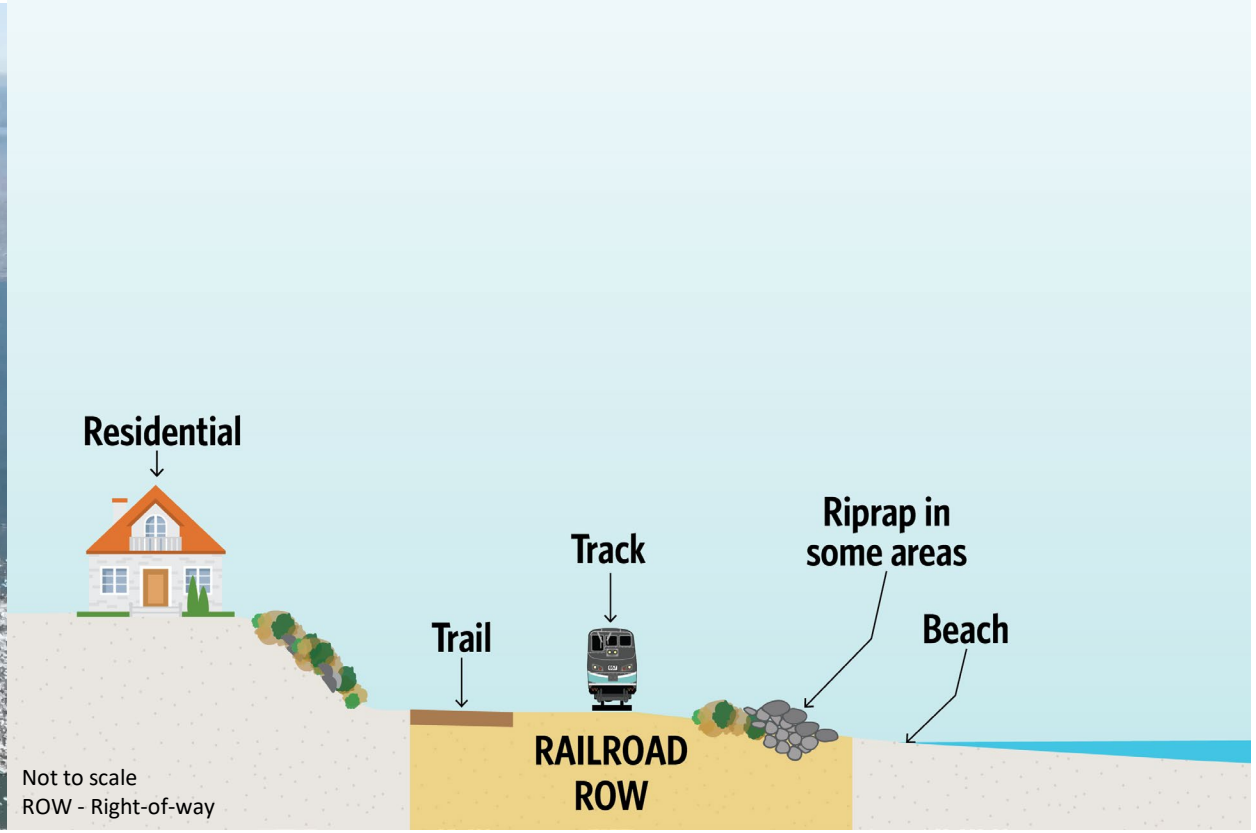
✓ No direct railroad action - collaborate with regional beach sand project

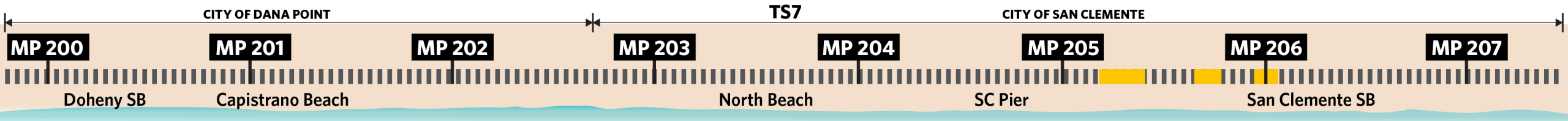
Rail

✓ Alternative materials for critical railroad infrastructure to reduce lifecycle costs

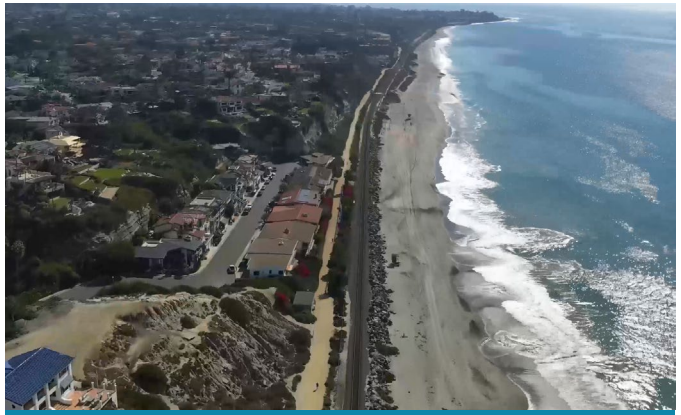


Typical Section 7: Railroad between Trail and Beach

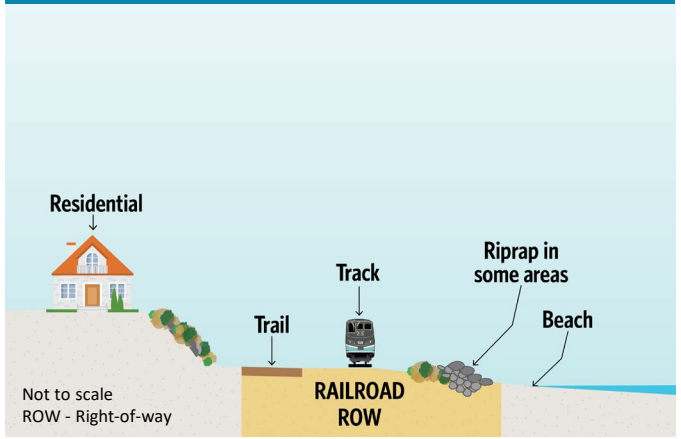




Typical Section 7: Railroad between Trail and Beach



Typical Section (Existing Condition):



Bluffside

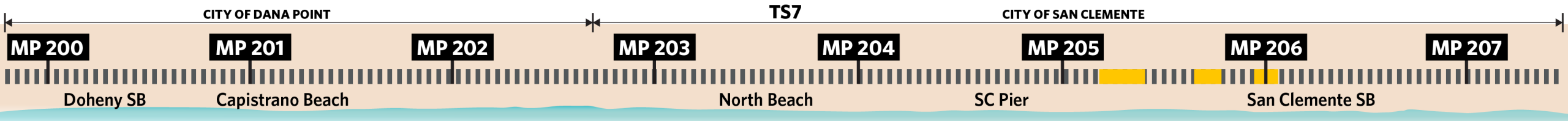
- ✓ No action

Beachside

- ✓ Engineered rock revetment
- ✓ Beach nourishment with shoreline protection structure
- ✓ Watershed modifications to increase beach sand supply (implemented by others)
- ✓ No direct railroad action – collaborate with regional beach sand project

Rail

- ✓ Alternative materials for critical railroad infrastructure to reduce lifecycle costs



COASTAL RAIL RESILIENCY STUDY

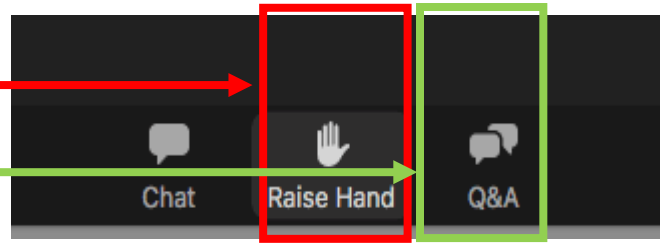
Q&A Session

Q&A Session

You may submit multiple comments/questions, as needed:

Via web

- Verbal comments: Click Participants > “raise hand”
- Type comments: Click the “Q&A” function



- Include contact information: Name and organization (if any)
- When announced, unmute your audio, you can then ask your question (s)
- You will be re-muted once you complete your comment (s)

Via phone (calling in)

- Press “*9” on your keypad to “raise hand”
- You will be announced by the last four digits of your phone number
- Press “*6” to unmute your audio
- You will be re-muted once you complete your comment (s)

As a reminder, the chat will be used by the team exclusively to share information and links to resources.

Next Steps

PURPOSE & NEED/ EVALUATION CRITERIA	DRAFT CONCEPT DEVELOPMENT	REFINEMENT OF CONCEPTS	DRAFT FEASIBILITY STUDY REPORT	FINAL FEASIBILITY STUDY REPORT
• Draft: summer ’24 • Informed by listening session feedback	• Draft alternative concepts: summer to fall ’24 • Obtain feedback from public, stakeholders and interest groups: fall ’24 to summer ‘25	• Refined alterative concepts: summer to fall ‘25 • Obtain feedback from public, stakeholders and interest groups: winter ’25 to spring ‘26	• Draft report: fall ’25 to spring ’26 • Obtain feedback from public, stakeholders and interest groups: summer ‘26	• Final report: summer ’26 • Present to Board / publish final report: fall ‘26

We are here

*Schedule is subject to change.
Board: OCTA Board of Directors

Stay Connected

Chris Boucly

Public Outreach

(714) 560-5326

cboucly@octa.net

Rebekah Soto

Project Manager

(714) 560-5501

rsoto@octa.net

Study website and email:

www.OCTA.net/CRRS

CRRS@octa.net

Thank you!

OCTA