City of Encinitas

Rail Corridor Vision Study Appendix

Part of the *Coastal Mobility & Livability Study*

COASTAL MOBILITY & LIVABILITY STUDY

Approved by Resolution 2018-18

February 14, 2018

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Contents

Resolution Approving the Rail Corridor Vision Study

The Encinitas City Council approved the *Rail Corridor Vision Study (RCVS)* report on February 14, 2018, via Resolution 2018-18, pictured below.

RESOLUTION 2018-18

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ENCINITAS APPROVING AND ADOPTING THE RAIL CORRIDOR VISION STUDY (RCVS) A COMPONENT OF THE COASTAL MOBILITY AND LIVABILITY STUDY (CMLS)

WHEREAS, the Coastal Mobility and Livability Study (CMLS) was initiated by the City of Encinitas to examine mobility issues and opportunities in the Encinitas coastal rail corridor, linking together three mobility studies: the Rail Corridor Vision Study (RCVS), the Active Transportation Plan (ATP) and the Coastal Business Districts Parking Study;

WHEREAS, the RCVS is intended to identify a comprehensive vision for the rail corridor to address connectivity and quality of life needs;

WHEREAS, on December 8, 2015, as part of their Work Program, the Encinitas City Council gave direction to staff to work with NCTD on a corridor-wide rail vision plan;

WHEREAS, on May 20, 2015 the City Council accepted and authorized the appropriation of the Caltrans Sustainable Transportation Planning Grant funding and agreed to a local match of General Fund monies, in order to develop the Encinitas Rail Corridor Vision Plan;

WHEREAS, a stakeholder working group, the Coastal Mobility and Livability Working Group (CMLWG) was established to guide public engagement on matters related to the rail corridor and was utilized to have meaningful dialog, gather feedback, build consensus among local stakeholders, develop community-supported solutions and recommendations for the rail corridor;

WHEREAS, the CMLWG met approximately twelve times, which included opportunity for general public comments, and the recommendations and prioritizations of the CMLWG were included in the RCVS;

WHEREAS, public outreach to the communities was integral to the work effort including a variety of public workshop venues and formats, outreach to City Commissions, an online comment platform and a project web page to garner public input during the RCVS work effort;

WHEREAS, the RCVS sets forth several solutions to improve near-term mobility and quality of life in the coastal rail corridor including rail corridor crossings policy and prioritization, City wide Quiet Zone, traffic calming and multi-use paths;

WHEREAS, the City of Encinitas is committed to the implementation of the RCVS as is evident in the fact that many recommendations of the Rail Corridor Vision Study are currently under analysis, design and/or study by the City of Encinitas, including a Quiet Zone Feasibility Analysis, and the El Portal and Verdi undercrossing projects;

WHEREAS, the City Council, in its independent judgment, finds that pursuant to Section 15060 (c) (2) of the California Environmental Quality Act (CEQA) Guidelines, the proposed activity is not subject to CEQA because approval of the Rail Corridor Vision Study, in and of itself, will not result in a direct or reasonably foreseeable indirect physical change in the environment.

NOW, THEREFORE, BE IT RESOLVED, DETERMINED AND ORDERED by City Council of the City of Encinitas that:

The Rail Corridor Vision Study is hereby approved and the next phase of project development and implementation shall be initiated.

PASSED AND ADOPTED this 14th day of February, 2018, by the following vote, to wit:

AYES: Kranz, Mosca, Muir

NAYS: Blakespear, Boerner Horvath

ABSENT: None

ABSTAIN: None

Catherine S. Blakespear, Mayor
City of Encinitas

ATTEST:

Kathy Hollywood, City Clerk

Public Engagement Events

The *RCVS* technical process was anchored by a robust campaign to engage community stakeholders and the broader public. This appendix contains details on all engagement activities.

Coastal Mobility & Livability Working Group Meetings

The Coastal Mobility and Livability Working Group (CMLWG) was the study's core advisory body and stakeholder team, presiding over the *RCVS* as well as the Active Transportation Plan (ATP) and Coastal Business Districts Parking Study. The CMLWG met at key study milestones, participating in extensive briefings and interactive working sessions as detailed in the table below. Each meeting also included time for public comment.

Meeting	Date	Location	Discussion Topics
1	**July 28, 2016**	City Hall	Study kickoff and input on public participation strategy
2	**September 7, 2016**	Encinitas Library	Review of Wayside horn warning system at potential Montgomery Avenue rail crossing
	September 22, 2016	Rail Corridor	Wayside horn demonstration and bus tour
	September 25, 2016	Rail Corridor	Walking tour option 1
	September 28, 2016	Rail Corridor	Walking tour option 2
3	**September 29, 2016**	City Hall	Mapping of corridor issues and opportunities prior to the public visioning workshop
4	**January 10, 2017**	City Hall	Consideration of early action recommendations for quiet zone implementation and rail crossings at El Portal Street and Montgomery Avenue
5	**April 25, 2017**	City Hall	Review of quiet zone examples from San Clemente, preliminary design concepts for Verdi Avenue rail crossing, and guiding themes from visioning workshops
6	**September 13, 2017**	City Hall	Review of *RCVS* and *ATP* draft improvements
	September 18, 2017	City Hall	
	October 2, 2017	City Hall	
	October 10, 2017	City Hall	
7	**November 14, 2017**	City Hall	Refinement of *RCVS* and *ATP* draft improvements, project list, and project phasing
8	**January 9, 2018**	City Hall	Continued review of second draft improvements, project list, and phasing, plus draft design guidelines
9	**January 30, 2018**	City Hall	Refinement of *RCVS* design guidelines and *ATP* and *Coastal Business Districts Parking Study* draft improvements

Public Workshops & Open Houses

The *RCVS* relied heavily on community stakeholders and the public for feedback and guidance.

Visioning Activities

Early in the study, the public was invited to identify their most important goals for the coastal corridor and discuss issues and opportunities. This wide-reaching effort consisted of three components listed below.

Traditional Workshops

Five in-person visioning workshops—one in each community—asked the public to help identify issues and opportunities. To advertise the workshops, between September 30 and October 3, 2016, the project team distributed flyers throughout the community at cafes, recreational shops, mainstreet associations, and other activity centers. The City also emailed interested parties.

Date	Community	Location
October 5, 2016	Leucadia	Paul Ecke Elementary School
October 6, 2016	Cardiff	Cardiff Elementary School
October 8, 2016	Old Encinitas	Old Encinitas Library
October 15, 2016	Olivenhain	Olivenhain Town Hall
October 17, 2016	New Encinitas	Flora Vista Elementary School

"Pop-Up" Events

Nine miniature workshops held at other community gathering places—such as farmers markets, popular restaurants, and retail centers—sought to meet people where they already are. Like the traditional workshops, these "pop-up events" solicited feedback on issues and opportunities in the rail corridor.

Date	Community	Location
October 23, 2016	New Encinitas	Walmart
October 23, 2016	New Encinitas	Isabelle Briens French Pastry Cafe
October 26, 2016	Old Encinitas	Encinitas Senior Center
October 26, 2016	Old Encinitas/ Cardiff	El Nopalito Market
October 28, 2016	Leucadia	Just Peachy Market
October 29, 2016	Leucadia	Leucadia Farmers Market
November 2, 2016	Old Encinitas/ Cardiff	San Dieguito Academy
November 3, 2016	Cardiff	Seaside Market
November 3, 2016	Old Encinitas	Encinitas 101 Mainstreet Association

Online Engagement

The City hosted an eight-week online comment period through the PlaceSpeak website, coupled with additional outreach and promotion through its social media accounts.

Open House Project Reviews

Based on feedback from the visioning activities, the project team and CMLWG developed and refined a set of draft improvements. Three "open house" project review meetings presented and collected public feedback on the proposed improvements and priorities

Date	Location	Discussion Topics
September 27, 2017	City Hall	*RCVS* first draft improvements
November 8, 2017	City Hall	*ATP* first draft improvements
December 20, 2017	City Hall	*RCVS* and *ATP* second draft improvements, project list, and phasing

City & Agency Guidance

The *RCVS* project team received guidance and presented study highlights to the City Council, City commissions and committees, and agencies with interest in the corridor. These check-ins kept leadership engaged and resulted in a more informed study.

City Council

The City Council provided valuable coordination and guidance throughout the *RCVS.* The project team briefed the City Council on the study's progress at key milestones, including an interactive workshop to review the first draft of the improvements.

Date	Location	Discussion Topics
July 13, 2016	City Hall	Project kick off
January 25, 2017	City Hall	Informational update
September 27, 2017	City Hall	*RCVS* first draft improvements and interactive workshop
November 8, 2017	City Hall	*ATP* first draft improvements
December 20, 2017	City Hall	*RCVS* and *ATP* second draft improvements, project list, and phasing

City Commissions & Committees

The project team visited City commissions and committees at various milestones throughout the study to provide updates and receive input.

Date	Group	Discussion Topics
July 21, 2016	Planning Commission	CMLWG appointment
July 22, 2016	Parks and Recreation Commission	CMLWG appointment
August 8, 2016	Traffic and Safety Commission	CMLWG appointment
August 11, 2016	Environmental Commission	CMLWG appointment
August 16, 2016	Parks and Recreation Commission	CMLWG appointment
August 30, 2016	Encinitas Bike and Ped Committee	Informational update
September 1, 2016	Cultural Tourism Committee	Informational update

Date	Group	Discussion Topics
September 7, 2016	Youth Commission	Informational update and CMLWG appointment
September 8, 2016	Environmental Commission	Informational update
September 20, 2016	Senior Commission	Informational update and CMLWG appointment
September 26, 2016	School District Liaison Committee	Informational update
September 27, 2016	Parks and Recreation Commission	Informational update
October 5, 2016	Youth Commission	Issues and opportunities
October 6, 2016	Cultural Tourism Committee	Issues and opportunities
October 10, 2016	Arts Commission	Issues and opportunities
October 10, 2016	Traffic and Safety Commission	Issues and opportunities
October 13, 2016	Environmental Commission	Issues and opportunities
October 18, 2016	Senior Commission	Issues and opportunities
October 18, 2016	Parks and Recreation Commission	Issues and opportunities
October 20, 2016	Planning Commission	Issues and opportunities
November 3, 2016	Cultural Tourism Committee	Informational update
January 16, 2018	Senior Commission	Informational update
January 16, 2018	Parks and Recreation Commission	Informational update
February 1, 2018	Planning Commission	Informational update
February 5, 2018	Arts Commission	Informational update
February 7, 2018	Youth Commission	Informational update
February 8, 2018	Environmental Commission	Informational update
February 12, 2018	Traffic and Safety Commission	Informational update

Technical Support Group

The Technical Support Group was a committee of representatives from public agencies with interest or influence in the coastal corridor. They advised the project team on agency plans and helped define the corridor's parameters and constraints, both in general meetings as well as focused agency meetings on specific issues. Coordination will continue as projects move into implementation.

Date	Location	Discussion Topics
July 26, 2016	City Hall	Kick-off *RCVS*
August 23, 2016	City Hall	Kick-off *ATP* and *Parking Study*
September 27, 2016	City Hall	Finalize surveys and workshops

Literature Review Summary

A wide range of planning and policy documents guided the *RCVS* and its community-oriented planning process. The key documents are listed below, followed by a summary of previously studied rail crossing locations.

Planning & Policy Documents

The project team reviewed the documents below for goals, policies, and proposed projects that affect the coastal rail corridor. Many were issued by the City itself, while others came from outside agencies including the California Department of Transportation (Caltrans) and the San Diego Association of Governments (SANDAG).

Document	Lead & Supporting Agencies	Year of Adoption
City of Encinitas General Plan	City of Encinitas	Various
Downtown Encinitas Specific Plan	City of Encinitas	1994
North 101 Corridor Specific Plan	City of Encinitas	1997
Cardiff-by-the-Sea Specific Plan	City of Encinitas	2010
Recreational Trails Master Plan	City of Encinitas	2002
Bikeway Master Plan	City of Encinitas	2005
Pedestrian Travel and Safe Routes to School Plan	City of Encinitas	2015
Encinitas Grade Separated Pedestrian Crossings Alternatives Analysis Report	City of Encinitas SANDAG	2006
California Coastal Act	California Coastal Commission	1976
San Diego Association of Governments (SANDAG) Regional Plan	SANDAG	2015
North Coast Corridor Public Works Plan and Transportation and Resource Enhancement Program (PWP/TREP)	Caltrans SANDAG California Coastal Commission	2014

Previously Studied Crossing Locations

The table shows the locations along the rail corridor that one or more planning and policy documents previously identified as potential crossing locations.

	General Plan	*Bikeway Master Plan*	*Ped Travel & Safe Routes to School*	*Pedestrian Crossing Alternatives Analysis*	*North Coast Corridor PWP/TREP*	*SANDAG Regional Plan*
La Costa Ave		Existing Bike GS (Class II)				
Hillcrest Dr / Grandview St	Proposed Ped GS			Proposed Ped GS	Proposed Bike/Ped GS	
Phoebe St			Deficiency Identified			
Leucadia Blvd	Proposed Road GS	Proposed Bike AG (Class II)			Proposed Road GS	Proposed Road GS
Union St			Deficiency Identified			
El Portal St			Proposed Bike/Ped GS	Proposed Ped GS		
Encinitas Blvd		Existing Bike GS (Class II)				
D St		Proposed Bike AG (Class III)				
Santa Fe Dr				Proposed Ped GS		
Verdi Ave			Deficiency Identified			
Montgomery Ave			Deficiency Identified	Proposed Ped GS		
Mozart Ave			Deficiency Identified			
Birmingham Dr			Deficiency Identified			
Chesterfield Dr		Proposed Bike AG (Class III)				

GS = Grade Separation AG = At-Grade

The following documents were reviewed but do not identify specific crossings: *Recreational Trails Master Plan (2002), Cardiff-by-the-Sea Specific Plan (2010), Downtown Encinitas Specific Plan (1994), North 101 Corridor Specific Plan (1997).*

Detailed Rail Crossing Project List

The detailed project list below supplements the abbreviated project lists in the main report.

- **Post Mile:** Crossings are listed from north to south by their linear position along the rail corridor as noted in the "Post Mile" column—with La Costa Avenue at Mile 0.0 and the Solana Beach city limit at Mile 6.0.
- **High-Level Cost Estimate Range:** The cost estimates in the far-right column represent a range of probable costs based on the crossing type (at-grade or grade-separated) combined with rough dimensions and quantities. Future phases of project development will refine these estimates through site-specific engineering.
  - For new rail crossings, the lower value refers to an at-grade crossing (including Quiet Zone features) and the higher value refers to a grade-separated undercrossing.
  - For Quiet Zone improvements, the lower value preserves existing infrastructure as much as possible, and the higher value includes replacement/upgrade of existing infrastructure.
  - For all other improvements, the values capture a range of potential costs for the same facilities.
  - Cost estimates do not include right-of-way.

Name/ Location	Post Mile	Community	Improvement Type	Project Description[1]	Phase	High-Level Cost Estimate Range
La Costa Ave	0.0	Leucadia	Crossing Improvement	→ **Near Term:** New sidewalk from Vulcan Ave to Coast Hwy 101. Wider sidewalk (if possible) across bridge. Traffic calming along La Costa Ave. More direct pedestrian path connecting Vulcan Ave to La Costa Ave (does not include potential right-of-way cost). → **Long Term (Not Reflected in Cost Estimate):** In conjunction with LOSSAN double-tracking, new overcrossing, sidewalks and bike facilities, plus potential path adjacent to rail corridor connecting Vulcan Ave to north side of La Costa Ave.	1	$120k - $150k
Bishop's Gate Rd	0.3	Leucadia	New Rail Crossing	A new at-grade or undercrossing for pedestrians/bicycles; pedestrian connection to Ashbury St; pedestrian crossing at Vulcan Ave/ Ashbury St; pedestrian connection to Coast Hwy 101 planned roundabout crosswalk.	3	$3.0m - $10.5m

Name/ Location	Post Mile	Community	Improvement Type	Project Description[1]	Phase	High-Level Cost Estimate Range
Grandview St/ Hillcrest Dr	0.5	Leucadia	New Rail Crossing	A new at-grade or undercrossing for pedestrians/bicycles; pedestrian connections to Coral Cove Way and Hillcrest Dr; pedestrian crossing at Vulcan Ave/ Coral Cove Way and Vulcan Ave/ Hillcrest Dr; pedestrian connection to Coast Hwy 101 planned roundabout crosswalk.	1D	$2.6m - $9.6m
Sanford St or Jupiter St	0.7 or 0.8	Leucadia	New Rail Crossing	→ **Sanford St:** A new at-grade or undercrossing for pedestrians/bicycles; pedestrian connection to Sanford St; pedestrian crossing at Vulcan Ave/ Sanford St; pedestrian connection to Coast Hwy 101 proposed crosswalk. → **Jupiter St:** A new at-grade or undercrossing for pedestrians/bicycles; pedestrian connection to N Vulcan Ave; pedestrian crossing at N Vulcan Ave; pedestrian connection to Coast Hwy 101 planned roundabout crosswalk.	1A	$2.8m - $13.7m
Phoebe St or E Glaucus St	1.0 or 1.1	Leucadia	New Rail Crossing	→ **Phoebe St:** A new at-grade or undercrossing for pedestrians/bicycles; pedestrian connection to N Vulcan Ave; pedestrian crossing at N Vulcan Ave; pedestrian connection to Coast Hwy 101 planned crosswalk. → **E Glaucus St:** A new at-grade or undercrossing for pedestrians/bicycles; pedestrian connection to E Glaucus St; pedestrian crossing at N Vulcan Ave/ E Glaucus St; pedestrian connection at Coast Hwy 101/ W Glaucus St proposed crosswalk.	1B	$3.1m - $13.8m
Leucadia Blvd	1.3	Leucadia	Crossing Improvements Quiet Zone Improvements	Explore options for new sidewalk on the south side of the rail crossing with a new crosswalk across Coast Hwy on the south side of the intersection. **Note:** Several regulatory challenges may limit feasibility, including potential conflicts with quiet zone improvements. Supplemental safety measures sufficient to achieve quiet zone status per FRA and CPUC requirements.	1	$855k - $1.6m

Name/ Location	Post Mile	Community	Improvement Type	Project Description[1]	Phase	High-Level Cost Estimate Range
Daphne St or Basil St	1.5 or 1.7	Leucadia	New Rail Crossing	→ **Daphne St:** A new at-grade or undercrossing for pedestrians/bicycles; pedestrian connection to N Vulcan Ave; pedestrian crossing at N Vulcan Ave; pedestrian connection to Coast Hwy 101/ Daphne St planned crosswalk. → **Basil St:** A new at-grade or undercrossing for pedestrians/bicycles; pedestrian connection to N Vulcan Ave; pedestrian crossing at N Vulcan Ave; pedestrian connection to Coast Hwy 101/Basil St planned crosswalk.	1E	$3.1m - $13.8m
El Portal St	1.9	Leucadia	New Rail Crossing – In Progress	Construction for a pedestrian/bicycle undercrossing funded; tentatively planned in 2019.	*In Progress*	*Fully Funded*
Marcheta St/ Orpheus Ave	2.1	Leucadia	New Rail Crossing	A new at-grade or undercrossing for pedestrians/bicycles; pedestrian connection to Orpheus Ave; pedestrian crossing at Vulcan Ave/ Orpheus Ave; pedestrian connection to Coast Hwy 101/ Marcheta St planned crosswalk.	1C	$3.0m - $10.5m
A St/Sunset Dr	2.4	Leucadia	New Rail Crossing	A new at-grade or undercrossing for pedestrians/bicycles; pedestrian connection to Sunset Dr; pedestrian crossing at Vulcan Ave/ Sunset Dr potentially including traffic calming or roundabout; pedestrian connection to Coast Hwy 101/ A St planned crosswalk.	2	$3.0m - $13.8m
Encinitas Blvd	2.5	Old Encinitas	Crossing Improvements	→ **Near Term**: Upgrade bike lanes to protected bike lanes by reducing vehicle travel lane widths. → **Long Term (Not Reflected in Cost Estimate):** Construct separated multi-use path on south side of Encinitas Blvd.	1	$50k - $100k
Encinitas Station **D St** **E St**	2.6 2.7 2.8	Old Encinitas	Quiet Zone Improvements	Supplemental Safety Measures sufficient to achieve quiet zone status per FRA and CPUC requirements.	1	$1.8m - $3.0m
H St or I St	3.1 or 3.2	Old Encinitas	New Rail Crossing	A new at-grade or undercrossing for pedestrians/bicycles; pedestrian crossing at Vulcan Ave/H St or Vulcan Ave/I St.	2	$3.1m - $14.8m

Name/ Location	Post Mile	Community	Improvement Type	Project Description[1]	Phase	High-Level Cost Estimate Range
Verdi Ave	4.0	Cardiff	New Rail Crossing – In Progress	A new pedestrian/bicycle undercrossing; pedestrian connection to Verdi Ave; pedestrian crossing at San Elijo Ave/ Verdi Ave; pedestrian connection to Coast Hwy 101 proposed crosswalk.	*In Progress*	$6.0m - $12.1m
Birmingham Dr[2]	4.5	Cardiff	New Rail Crossing	A new at-grade, undercrossing, or overcrossing for pedestrians/bicycles; pedestrian connection to Birmingham Dr; pedestrian crossing at San Elijo Ave/ Birmingham Ave; pedestrian connection to Coast Hwy 101 proposed crosswalk.	1	$3.4m - $14m[2]
Chesterfield Dr	4.7	Cardiff	Crossing Improvements	Explore options for a new crosswalk across Coast Hwy 101 and the rail corridor on the south side of the intersection. **Note:** Several regulatory challenges may limit feasibility, including potential conflicts with quiet zone improvements.	N/A	$25k - $50K
Norfolk Dr or Dublin Dr	4.8 or 4.9	Cardiff	New Rail Crossing	→ **Norfolk Dr:** A new at-grade or undercrossing; pedestrian connection to Norfolk Dr; pedestrian crossing at San Elijo Ave/ Norfolk Dr; pedestrian connection to Coast Hwy 101 proposed crosswalk. → **Dublin Dr (Preferred):** A new at-grade or undercrossing; pedestrian connection to Dublin Dr; pedestrian crossing at San Elijo Ave/ Dublin Dr; pedestrian connection to Coast Hwy 101 proposed crosswalk.	3	$3.4m - $14.3m
San Elijo Gateway	6.0	Cardiff	New Rail Crossing – In Progress	A pedestrian undercrossing being constructed with the San Elijo Lagoon Double Track project.	*In Progress*	*Fully Funded*
TOTAL HIGH-LEVEL COST ESTIMATE RANGE						**$33m/$146m**

Notes:

1. *All pedestrian crossings on Vulcan Ave are assumed to include pop-outs, speed table, signage, and lighting.*
2. *At Birmingham Drive, the higher cost estimate value refers to an undercrossing. An overcrossing is estimated to cost up to 25% more (approximately $17m).*

Rail Crossing Project Cost Estimates

The table below provides more detail on the high-level cost estimate range for proposed new rail crossings. Future phases of project development will refine these estimates through site-specific engineering. These cost estimates employ the following assumptions:

- In general, baseline data came from the *Verdi Avenue Grade Separation Study (2017)*, which estimated the cost of both an at-grade crossing and a grade-separated undercrossing. Specific project elements and quantities—e.g. embankments, retaining walls, traffic improvements—were added and subtracted from the Verdi Avenue estimate based on a high-level assessment of each crossing site.
- For the crossings at Bishop's Gate Road and Grandview Street/Hillcrest Drive, the cost estimate for Hillcrest Drive from the *Encinitas Grade Separated Pedestrian Crossings Alternatives Analysis Report (2006)* served as a baseline. Its estimated costs were escalated to 2016 values using additional input from the *Montgomery Avenue Grade Separation Study (2016).*
- "Soft cost" includes non-construction costs such as planning, permitting, design, and a contingency allowance. For most crossings, soft cost was assumed to be 30% of construction cost, but was increased to 40% at H Street/I Street based additional anticipated constraints.
- Cost estimates do not include right-of-way.

	At-Grade Crossing with Quiet Zone Features			Grade-Separated Undercrossing		
Location	**Soft Cost**	**Construction**	**Total Cost**	**Soft Cost**	**Construction**	**Total Cost**
Bishop's Gate Rd	$0.7m	$2.3m	**$3.0m**	$2.4m	$8.1m	**$10.5m**
Grandview St/Hillcrest Dr	$0.5m	$2.1m	**$2.6m**	$1.5m	$8.1m	**$9.6m**
Sanford St or Jupiter St	$0.7m	$2.2m	**$2.9m**	$3.2m	$10.5m	**$13.7m**
Phoebe St or E Glaucus St	$0.7m	$2.4m	**$3.1m**	$3.2m	$10.8m	**$14.0m**
Daphne St or Basil St	$0.7m	$2.4m	**$3.1m**	$3.2m	$10.6m	**$13.8m**
Marcheta St/Orpheus Ave	$0.7m	$2.3m	**$3.0m**	$2.4m	$8.1m	**$10.5m**
A St/Sunset Dr	$0.7m	$2.3m	**$3.0m**	$3.2m	$10.6m	**$13.8m**
H St or I St	$0.9m	$2.3m	**$3.2m**	$4.2m	$10.6m	**$14.8m**
Verdi Ave	$0.5m	$2.3m	**$2.8m**	$1.5m	$10.6m	**$12.1m**
Birmingham Dr[1]	$0.8m	$2.6m	**$3.4m**	$3.2m	$10.8m	**$14.0m**
Norfolk Dr or Dublin Dr	$0.8m	$2.6m	**$3.4m**	$3.3m	$11.0m	**$14.3m**

Note:

1. *At Birmingham Drive, the grade-separated cost refers to an undercrossing. An overcrossing is estimated to cost up to 25% more (approximately $17m).*

Quiet Zone 101

A quieter rail corridor is a key component of the *RCVS* recommendations.

Why Do Trains Have to Sound Their Horns?

Trains sound their horns to let people know the train is approaching and to stay clear. The Federal Railroad Administration (FRA) regulates roadway-rail grade crossings with the aim of reducing collisions between trains and autos/pedestrians/bicyclists. Train operators are required to sound their horns for 15-20 seconds and no more than ¼ mile in advance of a roadway-rail grade crossing.

What Is a Quiet Zone?

A quiet zone is a section of a rail line at least ½ mile long with one or more vehicular at-grade rail crossings in which train horns are *not* routinely sounded when approaching at-grade crossings. They may be established at any roadway-rail grade crossing that meets federal requirements for quiet zones.

The aim of a quiet zone is to reduce noise around roadway-rail grade crossings for nearby residents and businesses. However, because train horns may still be sounded in emergency situations as determined by the train operator—and because quiet zones do not eliminate train bells at crossings—quiet zones may be more accurately described as “reduced noise zones.”

When Is a Quiet Zone Active?

A quiet zone can be active 24 hours a day, or during part of the day (e.g. at night).

What Conditions Are Required for Creating a Quiet Zone?

Quiet zones may be implemented by the City of Encinitas as the local public authority responsible for traffic control or law enforcement at-grade crossings, if in compliance with FRA and California Public Utilities Commission (CPUC) requirements.

Because the absence of a train horn increases the risk of a crossing collision, certain conditions must be met with a quiet zone to minimize this risk. These include:

- “Active Warning Devices” at vehicular at-grade rail crossings such as flashing lights, “quad” gates covering all traffic lanes, and center medians.
- A measurement of the risk of the proposed quiet zone that compares it with to the national-wide risk at roadway-rail grade crossings where train horns are sounded, or the implementation of other supplemental safety measures designed to maximize safety. These other measures can include center medians or additional railroad gate systems designed to prohibit a motorist from driving around gates when they are down.

Wayside horns are another way to improve safety at crossings as an additional active warning device; however, they are not always necessary to establish a quiet zone. The wayside horn is a set of roadside-mounted speakers that sounds when these other devices are activated. The sound is directed down the roadway, which greatly reduces the noise to nearby properties compared with a train horn.

How Can a Quiet Zone Be Established in Encinitas?

Based on FRA guidelines, the following key steps would be undertaken by the City of Encinitas for a proposed quiet zone:

- Determine which crossings will be included in the proposed quiet zone (length of a quiet zone must be at least ½ mile), including identifying any pedestrian-only crossings
- Inventory the existing physical and operating conditions at each crossing in the proposed quiet zone
- Outline how the quiet zone would operate based on assessment of risk and safety measures described above
- Conduct site diagnostic meeting to review proposed supplemental safety measures with regulatory agencies, including FRA and CPUC.
- Provide a "Notice of Intent" for the proposed quiet zone to all railroads (Amtrak, North County Transit District, and BNSF) and the California Public Utilities Commission—the state agency responsible for highway and crossing safety—for their review and input
- Submit required documentation on proposed quiet zone to the FRA

How Long Does It Take to Get a Quiet Zone Approved?

Full establishment of a quiet zone may take up to seven months if an application for approval needs to be made to the FRA.

How Much Does a Quiet Zone Cost to Implement and Who Pays?

Costs will vary depending on the number of crossings and the types of supplemental safety measures required. Experience shows that costs can range from $30,000 to $1.2 million per crossing. The City of Encinitas would be responsible for securing funding for all costs associated with implementation, including construction of the required supplemental safety measures.

Where Can I Get More Information About Quiet Zones?

The FRA website has an overview of quiet zones and the *Guide to the Quiet Zone Establishment Process: An Information Guide*, available at http://www.fra.dot.gov/Page/P0889.

Planning Considerations at Potential Crossing Locations

Mile Markers: *The crossings in this document are listed from north to south by their linear position along the rail corridor, with La Costa Avenue at Mile 0.0 and the Solana Beach city limit at Mile 6.0.*

Proposed Crossings

To implement the *Rail Corridor Crossing Policy* and achieve the ultimate vision of roughly ¼-mile spacing throughout the corridor, rail crossings are proposed at the following approximate locations. All locations are listed below with brief evaluations, and mapped at the end of this report.

As the planning process continues, these preliminary locations should be analyzed further, including:

- Review of engineering feasibility including site-specific opportunities and constraints.
- Evaluation of potential pros and cons of at-grade versus grade-separated crossings.
- Prioritization into phased groups based on policy goals and overall feasibility.

Mile 0.3: Bishop's Gate Road

- **West:** Few commercial or other attractors. No direct connections to east-west streets. Entrance to Seabluffe gated community limits public beach access (better beach access at La Costa Avenue and Grandview Street). New crosswalks and roundabout at Coast Highway 101 planned in Streetscape project.
- **East:** Few commercial or other attractors. No direct connections to east-west streets. For some users, could be preferable to high-stress, out-of-direction crossing at La Costa Avenue.

Mile 0.5: Grandview Street / Hillcrest Drive

- Planned pedestrian crossing identified in *General Plan, Pedestrian Crossing Alternatives Analysis,* and *North Coast Corridor Public Works Plan/Transportation & Resource Enhancement Program (PWP/TREP)*.
- **West:** New crosswalks and roundabout at Coast Highway 101 planned in Streetscape project, plus a "parking pod" approximately 200' to the south of Grandview Street. Access to Grandview Beach and Coast Highway 101 commercial. Direct connections to east-west streets.
- **East:** Direct connections to east-west streets. Leucadia Oaks Park with 0.2 miles away. Parking on Vulcan will be challenging.

Mile 0.7 or 0.8: Sanford Street or Jupiter Street

- **West:** Jupiter Street has new crosswalks and roundabout at Coast Highway 101 planned in Streetscape project. A "parking pod" is also planned from approximately 200' to the north of Jupiter Street to Avocado Street, which appears to conflict with a crossing at Sanford Street. Access to Coast Highway 101 commercial. Limited public beach access (better beach access at Leucadia Boulevard and Grandview Street). Direct connections to east-west streets.
- **East:** Sanford Street has better access to Leucadia Oaks Park and direct connection to east-west. Jupiter Street is 0.1 mile from east-west streets the north and south.

Mile 1.0: Phoebe Street or Glaucus Street

- Deficiency identified in *Pedestrian Travel & Safe Routes to School Plan.*
- **West:** Phoebe Street has a new crosswalk at Coast Highway 101 planned in Streetscape project (no crossing at W Glaucus Street). Access to Coast Highway 101 commercial. Limited public beach access (better beach access at Leucadia Boulevard and Grandview Street). Direct connections to east-west streets.
- **East:** E Glaucus Street has direct connection to east-west. Phoebe Street is 0.1 mile from east-west streets the north and south.

Mile 1.5 or 1.7: Daphne Street or Basil Street

- **West:** New crosswalks at Coast Highway 101 planned in Streetscape project at both Daphne and Basil Streets, plus a "parking pod" immediately to the south of Basil Street. Limited public beach access (better beach access at Leucadia Boulevard and El Portal Street). Access to Coast Highway 101 commercial.
- **East:** No direct connections to east-west streets. Limited, auto-oriented commercial on Vulcan.

Mile 2.1: Marcheta Street / Orpheus Avenue

- **West:** New crosswalk at Coast Highway 101 planned in Streetscape project. Access to Coast Highway 101 commercial. Direct connections to east-west streets.
- **East:** Direct connections to east-west streets.

Mile 3.1 or 3.2: H Street or I Street

- **West:** Abuts rear of private commercial parcels. Circulation could work at H or I Streets, but would require easement etc. Limited public beach access (better beach access at D Street and Santa Fe Drive). Direct connections to east-west streets.
- **East:** Access to Mildred MacPherson Park. Direct connections to east-west streets.

Mile 4.0 or 4.2: Verdi Avenue

- Planned pedestrian crossing, identified in *Pedestrian Travel & Safe Routes to School Plan* and *Pedestrian Crossing Alternatives Analysis*. Currently in preliminary design by the City of Encinitas, partially funded.

- **West:** Access to San Elijo State Beach. No direct connections to east-west streets.
- **East:** Access to Cardiff Elementary. Direct connections to east-west streets.

Mile 4.5: Birmingham Drive

- Deficiency identified in *Pedestrian Travel & Safe Routes to School Plan.*
- **West:** Access to San Elijo State Beach.
- **East:** Access to San Elijo Avenue commercial. Direct connection to Birmingham Drive, major east-west route with bike and pedestrian facilities

Existing Crossings

The following crossings already exist or—in the case of El Portal Street—are fully funded and in design.

Mile 0.0: La Costa Avenue (EXISTING)

- Existing grade-separated roadway crossing. Auto-oriented, high stress for multimodal users.
- Requires out-of-direction travel to/from Vulcan Avenue. Direct connection to La Costa Avenue, a major east-west route with bike lanes. Access to South Ponto Beach. New crosswalks and roundabout at Coast Highway 101 planned in Streetscape project.

Mile 1.3: Leucadia Boulevard (EXISTING)

- Existing at-grade roadway crossing. SANDAG has long-term (2040) plans for grade separation, identified in both *San Diego Forward: The Regional Plan* and *North Coast Corridor PWP/TREP*.
- Access to Beacon's Beach and Coast Highway 101 commercial. Direct connection to Leucadia Boulevard, a major east-west route with bike lanes and pedestrian facilities.

Mile 1.9: El Portal Street (In Progress)

- Planned pedestrian crossing, currently funded and in design by City of Encinitas. Identified in *Pedestrian Travel & Safe Routes to School Plan* and *Pedestrian Crossing Alternatives Analysis*.
- **West:** New crosswalks and roundabout at Coast Highway 101 planned in Streetscape project, plus a "parking pod" approximately 200' to the north. Access to Stonesteps Beach. Direct connections to east-west streets.
- **East:** Access to Paul Ecke Central Elementary and Orpheus Park. Direct connections to east-west streets.

Mile 2.5: Encinitas Boulevard (EXISTING)

- Existing grade-separated roadway crossing.
- Access to major commercial and civic, Moonlight State Beach, Cottonwood Creek Park. Direct connection to Encinitas Boulevard, a major east-west route with bike lanes and pedestrian facilities.

Mile 2.6: Encinitas COASTER Station / C Street (EXISTING)

- Existing at-grade pedestrian crossing at Encinitas Station.
- Access to major commercial and civic, library, COASTER parking, Moonlight State Beach.

Mile 2.7: D Street (EXISTING)

- Existing at-grade roadway crossing.
- Access to major commercial and civic, Moonlight State Beach.

Mile 2.8: E Street (EXISTING)

- Existing at-grade roadway crossing.
- Access to major commercial and civic.

Mile 3.4: Santa Fe Drive (EXISTING)

- Existing below-grade pedestrian crossing.
- Access to Swami's Beach and Coast Highway 101 commercial. Direct connection to Santa Fe Drive, major east-west route with bike lanes and pedestrian facilities.

Mile 4.7: Chesterfield Drive (EXISTING)

- Existing at-grade roadway crossing. Multimodal improvements currently under construction through SANDAG's San Elijo Lagoon Double Track project.
- Access to San Elijo Avenue commercial and Glen Park. Direct connection to Chesterfield Drive/Manchester Avenue, major east-west route with bike facilities.

Eliminated Crossing Locations

The following crossing locations were initially considered, but eventually screened out based on community feedback, technical considerations, and a desire to prioritize resources in other locations.

Mile 3.7-3.8: North Cardiff Area

- **West:** Limited public beach access (better beach access at Santa Fe Drive and Verdi Avenue). Few commercial/civic attractors between Santa Fe Drive & Verdi Avenue. No direct connections to east-west streets.
- **East:** Few commercial/attractors or east-west public streets between Santa Fe Drive & Verdi Avenue. No direct connections to east-west streets.

Engineering Considerations at Potential Crossing Locations

The project team compiled the following engineering considerations at selected existing and proposed crossing locations based on field reviews and other high-level engineering assessments.

Mile Markers: *The crossings are listed from north to south by their linear position along the rail corridor, with La Costa Avenue at Mile 0.0 and the Solana Beach city limit at Mile 6.0.*

General Notes

- The North County Transit District (NCTD) owns the rail right-of-way and must approve all projects.
- All projects must be coordinated with planned LOSSAN Rail Corridor double-tracking.
- Overcrossings must have 26 feet of vertical clearance between rail and underside of bridge due to heavy rail (based on design standards in at time of publication in February 2018).
- Undercrossings require a minimum of 10 feet clear vertical opening. Could decrease to eight feet with approval from CPUC. This does not include the depth of the railroad bridge structure with is typically four feet (based on design standards in at time of publication in February 2018).
- Most, if not all, proposed crossing location generally have the following issues or concerns:
  - Drainage along Vulcan Avenue, especially on the east side of the track
  - Shallow groundwater table
  - High pressure gas line between the tracks and Vulcan Avenue/San Elijo Avenue
  - Parking along Vulcan/San Elijo that currently is in the dirt area (and within NCTD ROW) will most likely be eliminated within the crossing areas
  - Coastal Rail Trail location needs to be defined
  - Double-track location needs to be defined
  - Environmental clearance and associated permits (CDP, etc.) will be necessary
- Fencing is a major consideration to encourage channelization of pedestrians to legal crossing locations.
- Drainage is a major consideration for the corridor. Should consider:
  - Perpetuating existing conditions
  - If more impervious area is added, it needs to be handled
  - Compatibility with future improvements on the corridor

Specific Locations

Mile 0.0: La Costa Avenue (Existing)

- Confirm if Batiquitos Double Track project will remove the bridge
- Bridge is narrow and if left in place and not widened, bikes would need to share lane on bridge
- Sidewalk on east side of rail may not fit when double tracked – slope is unstable, will need retaining wall. Not a low-cost solution.

Mile 0.3: Bishop's Gate Road

- At-grade crossing most appropriate and cost effective due to elevation of track relative to Vulcan and Hwy 101. Track is a few feet above both Hwy 101 and Vulcan.

Mile 0.5: Grandview Street / Hillcrest Drive

- This location was included in the *Pedestrian Crossings Alternatives Analysis* (2006) but is not environmentally cleared.
- Parking on Vulcan will be challenge.
- At-grade crossing most appropriate and cost effective due to elevation of track relative to Vulcan and Hwy 101. Track is a few feet above both Hwy 101 and Vulcan.

Mile 0.8: Jupiter Street or Sanford Street

- Track is approximately four feet above Hwy 101 and Vulcan.

Mile 1.0: Phoebe Street or East Glaucus Street

- Track is approximately four feet above Hwy 101, and even with Vulcan Ave.

Mile 1.5 or 1.7: Daphne Street or Basil Street

- Track is approximately five feet above Hwy 101, and two feet above Vulcan Ave.

Mile 2.1: Marcheta Street / Orpheus Avenue

- Hwy 101 stop control will be eliminated with the City's streetscape project (no roundabout).
- Vulcan Avenue may require a pedestrian 'pop out' or speed bump to slow down traffic for pedestrian crossings.
- Track is approximately two feet above both Hwy 101 and Vulcan Avenue.

Mile 2.4: Sunset Drive / A Street

- NCTD right-of-way is wider.
- Elevation difference between Vulcan/Rail ~two feet. Hwy 101/Rail ~three feet. Rail starts to climb as you head south from this point.

Mile 3.1 or 3.2: H Street or I Street

- Elevation of rail to Vulcan is about even. Elevation to Hwy 101 is approximately eight to 10 feet.
- On west side of tracks would need permission/access through commercial property to access Hwy 101.
- Possible drainage concerns on west side of tracks.

Mile 3.7-3.8: North Cardiff Area

- Elevation from track to Hwy 101 is approximately three feet, elevation from track to San Elijo Avenue is approximately 12 feet.
- Currently double tracked.
- Narrow NCTD right-of-way.

Mile 4.0 or 4.2: Verdi Avenue

- Currently in preliminary design.

Mile 4.8 or 4.9: Norfolk Drive or Dublin Drive

- At Norfolk, the rail is approximately even elevation with San Elijo Avenue, but quickly diverges going both north and south. At Hwy 101/rail there is an approximately 20-foot difference.
- Crossing of a large drainage swale is required.
- Pedestrians would need to cross four lanes of track on Hwy 101 – need crossing control to access beach.
- Crossing at Dublin has no good outlet on the west – enters the lagoon.
- Slopes may be unstable.