



CITY COUNCIL Agenda

Council Chamber
1200 Carlsbad Village Drive
Carlsbad, CA 92008

July 21, 2020, 3 p.m.

Welcome to Your City Council Meeting

We welcome your interest and involvement in the city's legislative process. This agenda includes information about topics coming before the City Council and the action recommended by city staff. You can read about each topic in the staff reports, which are available on the city website and in the Office of the City Clerk. The City Clerk is also available to answer any questions you have about City Council meeting procedures.

How to watch



City cable channel

Charter Spectrum channel 24 AT&T
U-verse channel 99.



City website

carlsbadca.gov/news/cityty.asp

Virtual meeting format

- Per California Executive Order N-29-20, and in the interest of public health and safety, we are temporarily taking actions to prevent and mitigate the effects of the COVID-19 pandemic by holding City Council and other public meetings online only.
- All public meetings will comply with public noticing requirements in the Brown Act and will be made accessible electronically to all members of the public seeking to observe and address the City Council.

How to participate

- **By phone:** Sign up at <https://www.carlsbadca.gov/cityhall/clerk/meetings/default.asp> by 2 p.m. the day of the meeting to provide comments live by phone. You will receive a confirmation email with instructions about how to call in.
- **In writing:** Email comments to clerk@carlsbadca.gov. Comments received by 2 p.m. the day of the meeting will be shared with the City Council prior to the meeting. When e-mailing comments, please identify in the subject line the agenda item to which your comments relate. All comments received will be included as part of the official record. **Written comments will not be read out loud.**
- These procedures shall remain in place during the period in which state or local health officials have imposed or recommended social distancing measures.

Reasonable accommodations

Persons with a disability may request an agenda packet in appropriate alternative formats as require by the Americans with Disabilities Act of 1990. Reasonable accommodations and auxiliary aids will be provided to effectively allow participation in the meeting. Please contact the City Manager's Office at 760-434-2821 (voice), 711 (free relay service for TTY users), 760-720-9461 (fax) or manager@carlsbadca.gov by noon on the Monday before the meeting to make arrangements.

More information about City Council meeting procedures can be found at the end of this agenda and in the Carlsbad Municipal Code chapter 1.20. PLEASE NOTE: AS A RESULT OF THE WAIVERS IN EXECUTIVE ORDER N-29-20, THE BROWN ACT PERMITS FULL PARTICIPATION BY OFFICIALS IN MEETINGS THROUGH VIDEO OR AUDIO TELECONFERENCE.

The City Council also sits as the Carlsbad Municipal Water District Board, Public Financing Authority Board, Community Development Commission and Successor Agency to the Redevelopment Agency. When considering items presented to the Carlsbad Municipal Water District Board, each member receives an additional \$100 per meeting (max \$300/month). When considering items presented to the Community Development Commission each member receives an additional \$75 per meeting (max \$150/month).

CALL TO ORDER:

ROLL CALL:

ANNOUNCEMENT OF CONCURRENT MEETINGS: None.

INVOCATION:

PLEDGE OF ALLEGIANCE:

APPROVAL OF MINUTES:

Minutes of the Regular Meeting held June 9, 2020.

PRESENTATIONS:

Presentation of Kids for Peace Video.

PUBLIC REPORT OF ANY ACTION TAKEN IN CLOSED SESSION:

PUBLIC COMMENT: *In conformance with the Brown Act and California Executive Order No. N-29-20, a total of 15 minutes is provided so members of the public participate in the meeting by submitting comments as provided on the front page of this agenda. The City Council will receive comments as requested up to a total of 15 minutes. All other comments will trail until the end of the meeting. In conformance with the Brown Act, no Council action can occur on these items.*

CONSENT CALENDAR: *The items listed under Consent Calendar are considered routine and will be enacted by one motion as listed below. There will be no separate discussion on these items prior to the time the Council votes on the motion unless members of the Council, the City Manager, or the public request specific items be discussed and/or removed from the Consent Calendar for separate action.*

WAIVER OF ORDINANCE TEXT READING:

This is a motion to waive the reading of the text of all ordinances and resolutions at this meeting.

1. **APPROVAL OF AGREEMENT WITH INFOSEND, INC. FOR UTILITY BILL PRINT AND MAIL SERVICE –** Adoption of a resolution authorizing the city manager, or a designee, to enter into an agreement with InfoSend, Inc. for Utility Bill Print and Mail Services in an amount not to exceed \$480,000 for an initial three-year term and not to exceed \$170,000 per agreement year for optional term extensions. (Staff contact: Cheryl Gerhardt, Administrative Services)
2. **ACQUISITION OF 7018 FORSTERS TERN DRIVE –** Adoption of a resolution authorizing the city manager to execute all required documents to complete the acquisition of 7018 Forsters Tern Drive, Carlsbad, California, an affordable housing resale unit, expending Community Development Block Grant funds in the amount of \$340,000. (Staff contact: David de Cordova, Community Development)
3. **APPROVAL OF TRAFFIC CALMING PLANS FOR ORIOLE COURT, MIMOSA DRIVE, MOORHEN PLACE AND DOVE LANE –** Adoption of a resolution approving the traffic calming plans for Oriole Court, Mimosa Drive, Moorhen Place and Dove Lane, Capital Improvement Program Project No. 6070, per the Carlsbad Residential Traffic Management Program. (Staff contact: John Kim, Public Works)

4. APPROVAL OF CALIFORNIA GREEN BUSINESS NETWORK SERVICES AGREEMENT – Adoption of a resolution authorizing execution of the California Green Business Network Services Agreement for fiscal year 2020-21, acceptance of grant funds, appropriation of grant funds to the environmental management department budget and authorizing the city manager or designee to sign additional agreements for up to four subsequent fiscal years. (Staff contact: Michael Grim, Public Works)

ORDINANCES FOR INTRODUCTION: None.

ORDINANCES FOR ADOPTION:

5. ADOPTION OF ORDINANCE NO. CS-378 TO DECREASE SPEED LIMIT ON AVENIDA ENCINAS FROM CANNON ROAD TO PALOMAR AIRPORT ROAD – Adoption of Ordinance No. CS-378 amending Carlsbad Municipal Code Section 10.44.280 to decrease the speed limit on Avenida Encinas from Cannon Road to Palomar Airport Road to 35 miles per hour. (Staff contact: Faviola Medina, City Clerk Services)

City Manager’s Recommendation: Adopt Ordinance No. CS-378.

PUBLIC HEARINGS: None.

DEPARTMENTAL AND CITY MANAGER REPORTS:

6. APPROVAL OF AGREEMENT WITH LOGICALIS, INC. FOR A UNIFIED COMMUNICATION AND COLLABORATION SYSTEM – Adoption of a resolution authorizing the city manager to execute an agreement to purchase a Unified Communication System, implementation services and associated items from Logicalis, Inc. for a total not to exceed amount of \$1,223,302 for a three-year period. (Staff contact: Maria Callander and Joe Stephenson, Administrative Services)

City Manager’s Recommendation: Adopt the resolution.

7. AMERICANS WITH DISABILITIES ACT BEACH ACCESS FEASIBILITY STUDY AND TRAIL CONNECTIVITY TO TAMARACK STATE BEACH FEASIBILITY STUDY – Adoption of a resolution accepting the Americans with Disabilities Act Beach Access Feasibility Study and the Trail Connectivity to Tamarack State Beach Feasibility Study, including the corresponding concept plans, and directing staff to prepare a request for proposals to pursue the environmental review, agency permitting, engineering and construction documentation phases of the projects. (Staff contact: Kyle Lancaster, Parks & Recreation and Nathan Schmidt, Public Works)

City Manager’s Recommendation: Adopt the resolution.

8. SEMIANNUAL TRANSPORTATION REPORT – Receive a semiannual transportation report. (Staff contact: Tom Frank, Pubic Works)

City Manager’s Recommendation: Receive the report.

9. PRESENTATION FROM THE SAN DIEGO ASSOCIATION OF GOVERNMENTS ON THE CARLSBAD VILLAGE AND BARRIO RAILROAD TRENCH ALTERNATIVES – Receive an informational presentation from the San Diego Association of Governments on the status of an analysis of the short trench and long trench alternatives for moving the railroad tracks below street level in the city’s Village and Barrio areas. (Staff contact: Hossein Ajideh, Public Works)

City Manager’s Recommendation: Receive the presentation.

10. APPOINT THREE MEMBERS TO THE BEACH PRESERVATION COMMISSION – Adoption of resolutions appointing three members to the Beach Preservation Commission. (Staff contact: Tammy McMinn, City Clerk Services)

City Manager’s Recommendation: Adopt the resolutions.

11. APPOINT TWO MEMBERS TO THE LIBRARY BOARD OF TRUSTEES – Adoption of resolutions appointing two members to the Library Board of Trustees. (Staff contact: Tammy McMinn, City Clerk Services)

City Manager’s Recommendation: Adopt the resolutions.

COUNCIL COMMENTARY AND REQUESTS FOR CONSIDERATION OF MATTERS:

City Council Regional Assignments (Revised 4/7/20)

Matt Hall
Mayor
North County Mayors and Managers
City/School Committee
Chamber of Commerce Liaison (primary)
Clean Energy Alliance JPA (alternate)
San Diego County Water Authority
San Diego Regional Economic Development Corporation Board of Directors

Keith Blackburn
Mayor Pro Tem
Buena Vista Lagoon JPC
Encina Wastewater Authority/JAC Board of Directors
North County Dispatch Joint Powers Authority
Chamber of Commerce Liaison (alternate)
SANDAG (1st alternate)
North County Transit District (alternate)

Priya Bhat-Patel
Council Member – District 3
SANDAG (2nd alternate)
North County Transit District (primary)
City/School Committee
League of California Cities – SD Division
Encina Wastewater Authority/JAC Board of Directors (alternate)

Cori Schumacher
Council Member – District 1
SANDAG (primary)
Buena Vista Lagoon JPC
Clean Energy Alliance JPA (primary)
Encina Wastewater Authority/JAC Board of Directors
North County Dispatch Joint Powers Authority (alternate)

Vacant – At-Large
Council Member

PUBLIC COMMENT: Continuation of the Public Comments

This portion of the agenda is set aside for continuation of public comments, if necessary, due to exceeding the total time allotted in the first public comments section. The City Clerk shall read any remaining public comments into the record. In conformance with the Brown Act, no Council action can occur on these items.

ANNOUNCEMENTS:

This section of the Agenda is designated for announcements to advise the community regarding events that Members of the City Council have been invited to, and may participate in.

CITY MANAGER COMMENTS:

CITY ATTORNEY COMMENTS:

ADJOURNMENT:

City Council Meeting Procedures (continued from page 1)

Written Materials

Written materials related to the agenda that are submitted to the City Council after the agenda packet has been published will be available for review prior to the meeting during normal business hours at the City Clerk's office, 1200 Carlsbad Village Drive and on the city website. To review these materials during the meeting, please see the City Clerk

Visual Materials

Visual materials, such as pictures, charts, maps or slides, are allowed for comments on agenda items, not general public comment. Please contact the City Manager's Office at 760-434-2820 or manager@carlsbadca.gov to make arrangements in advance. All materials must be received by the City Manager's Office no later than noon the day before the meeting. The time spent presenting visual materials is included in the maximum time limit provided to speakers. All materials exhibited to the City Council during the meeting are part of the public record. **Please note that video presentations are not allowed.**

Decorum

All participants are expected to conduct themselves with mutual respect. Loud, boisterous and unruly behavior can interfere with the ability of the City Council to conduct the people's business. That's why it is illegal to disrupt a City Council meeting. Following a warning from the presiding officer, those engaging in disruptive behavior are subject to law enforcement action.

City Council Agenda

The City Council follows a regular order of business that is specified in the Carlsbad Municipal Code. The City Council may only make decisions about topics listed on the agenda.

Presentations

The City Council often recognizes individuals and groups for achievements and contributions to the community. Well-wishers often fill the chamber during presentations to show their support and perhaps get a photo. If you don't see an open seat when you arrive, there will likely be one once the presentations are over.

Consent Items

Consent items are considered routine and may be enacted together by one motion and vote. Any City Council member may remove or "pull" an item from the "consent calendar" for a separate vote. Members of the public may pull an item from the consent calendar by requesting to speak about that item. A speaker request form must be submitted to the clerk prior to the start of the consent portion of the agenda.

Public Comment

Members of the public may speak on any city related item that does not appear on the agenda. State law prohibits the City Council from taking action on items not listed on the agenda. Comments requiring follow up will be referred to staff and, if appropriate, considered at a future City Council meeting. Members of the public are also welcome to provide comments on agenda items during the portions of the meeting when those items are being discussed. In both cases, a request to speak form must be submitted to the clerk in advance of that portion of the meeting beginning.

Public Hearing

Certain actions by the City Council require a "public hearing," which is a time within the regular meeting that has been set aside and noticed according to different rules.

Departmental Reports

This part of the agenda is for items that are not considered routine and do not require a public hearing. These items are usually presented to the City Council by city staff and can be informational in nature or require action. The staff report about each item indicates the purpose of the item and whether or not action is requested.

Other Reports

At the end of each meeting, City Council members and the city manager, city attorney and city clerk are given an opportunity to share information. This usually includes reports about recent meetings, regional issues, and recent or upcoming meetings and events.

City Council Actions

Resolution

A resolution is an official statement of City Council policy that directs administrative or legal action or embodies a public City Council statement. A resolution may be introduced and adopted at the same meeting. Once adopted, it remains City Council policy until changed by subsequent City Council resolution.

Ordinance

Ordinances are city laws contained in the Carlsbad Municipal Code. Enacting a new city law or changing an existing one is a two-step process. First, the ordinance is “introduced” by city staff to the City Council. If the City Council votes in favor of the introduction, the ordinance will be placed on a subsequent City Council meeting agenda for “adoption.” If the City Council votes to adopt the ordinance, it will usually go into effect 30 days later.

Motion

A motion is used to propose City Council direction related to an item on the agenda. Any City Council member may make a motion. A motion must receive a “second” from another City Council member to be eligible for a City Council vote.



CITY COUNCIL
Minutes

Council Chamber
1200 Carlsbad Village Drive
Carlsbad, CA 92008

June 9, 2020, 3 p.m.

CALL TO ORDER: 3 p.m.

ROLL CALL: Hall, Blackburn, Bhat-Patel, Schumacher.

ANNOUNCEMENT OF CONCURRENT MEETINGS: None.

PLEDGE OF ALLEGIANCE: Mayor Pro Tem Blackburn led the Pledge of Allegiance.

PUBLIC REPORT OF ACTION TAKEN IN CLOSED SESSION:

City Attorney Celia Brewer announced the City Council authorized a settlement amount of \$32,826 to resolve the dispute with Ran Enterprises. Motion carried unanimously, 4/0.

INVOCATION: None.

APPROVAL OF MINUTES:

Minutes of the Regular Meeting held April 21, 2020.

Minutes of the Special Meeting held May 1, 2020.

Minutes of the Special Meeting held May 12, 2020.

Minutes of the Regular Meeting held May 19, 2020.

Motion by Mayor Pro Tem Blackburn, seconded by Council Member Bhat-Patel, to approve the minutes as presented. Motion carried unanimously, 4/0.

PRESENTATIONS:

Proclamation in recognition of National Historic Preservation Month and 3rd Grade Art Competition Winners.

Council Member Bhat-Patel read the proclamation.

Proclamation in recognition of LGBTQ+ Pride Month.

Council Member Schumacher read the proclamation and shared about issues faced by and within the LGBTQ+ community.

PUBLIC COMMENT:

The following individuals called into the City Council Meeting and shared their comments for the record:

Shirley Anderson thanked to Council Member Bhat-Patel and expressed her concern with Mayor Pro Tem Blackburn's comments and vote against the city's statement in support of black lives at the June 4, 2020 City Council meeting.

Beth Ford spoke requesting an apology from Council Member Schumacher to the community organizers of the Stand for George Floyd Protest due to her inaccurate and divisive social media posts. She also gave thanks to Mayor Hall and Police Department staff for their efforts during the event.

Keyrollos Ibrahim spoke requesting an apology from Council Member Schumacher for putting protest demonstrators' lives in danger due to her social media posts. He also gave thanks to Mayor Hall, Council Member Bhat-Patel, and Police Department staff for their efforts regarding the protesting event and for keeping open dialogue despite their differing beliefs.

Nicholas Marsden thanked Council Member Bhat-Patel for her strong stance in asserting support for the Black Lives Matter movement and shared information about the issue.

Brian Pratschner spoke regarding his concern about permitting requirements for the recent protests that occurred in Carlsbad.

CONSENT CALENDAR:

Motion by Mayor Pro Tem Blackburn, seconded by Council Member Bhat-Patel, to approve Consent Calendar Item Nos. 1 through 5. Motion carried unanimously, 4/0.

1. LICENSE AGREEMENT WITH NEW CINGULAR WIRELESS PCS, LLC – Adoption of Resolution No. 2020-099 authorizing the city manager to execute and take all actions necessary to implement a license agreement between New Cingular Wireless PCS, LLC to operate a new wireless communication facility at Calavera Hills Community Park (APN: 167-101-35) (Staff contact: Curtis Jackson, Real Estate)
2. PURCHASE OF ANNUAL CISCO SMARTNET MAINTENANCE FROM LOGICALIS, INC. – Adoption of Resolution No. 2020-100 authorizing the city manager, or a designee, to purchase a Cisco SmartNet Maintenance Plan from Logicalis, Inc., for an amount not to exceed \$133,647.18 for a term ending June 30, 2021. (Staff contact: Maria Callander, Administrative Services)
3. ESTABLISH FISCAL YEAR 2020-21 SPECIAL TAXES FOR COMMUNITY FACILITIES DISTRICT NO. 1 – Adoption of Resolution No. 2020-101 establishing the Fiscal Year 2020-21 Special Taxes for Community Facilities District No. 1. (Staff contact: Ryan Green, Administrative Services)
4. FISCAL YEAR 2020-21 PRELIMINARY ENGINEER'S REPORT FOR LEVY OF ASSESSMENTS WITHIN LIGHTING AND LANDSCAPING DISTRICT NO. 1 – Adoption of Resolution No. 2020-102 initiating the proceedings, approving the Preliminary Engineer's Report for Fiscal Year 2020-21 and setting a Public Hearing for July 14, 2020 for the Annual Levy of Assessments within Lighting and Landscaping District No. 1, a Special Assessment District. (Staff contact: Jason Rosado, Administrative Services)
5. FISCAL YEAR 2020-21 PRELIMINARY ENGINEER'S REPORT FOR LEVY OF ASSESSMENTS WITHIN LIGHTING AND LANDSCAPING DISTRICT NO. 2 – Adoption of Resolution No. 2020-103 initiating the proceedings, approving the Preliminary Engineer's Report for Fiscal Year 2020-

21 and setting a Public Hearing for July 14, 2020 for the Annual Levy of Assessments within Lighting and Landscaping District No. 2, a Special Assessment District. (Staff contact: Jason Rosado, Administrative Services)

ORDINANCES FOR INTRODUCTION: None.

ORDINANCE FOR ADOPTION:

6. AMENDMENTS TO CARLSBAD MUNICIPAL CODE CHAPTER 1.08, PENALTIES, AND CHAPTER 1.10, ADMINISTRATIVE CODE ENFORCEMENT REMEDIES – Adoption of Ordinance No. CS-374 amending Title 1, Chapter 1.08, Penalties of the Carlsbad Municipal Code; and Adoption of Ordinance No. CS-375 amending Title 1, Chapter 1.10, Administrative Code Enforcement Remedies of the Carlsbad Municipal Code. (Staff contact: Sheila Cobian, City Clerk Services)

City Manager's Recommendation: Adopt Ordinance Nos. CS-374 and CS-375.

City Attorney Celia Brewer titled the ordinance.

Motion by Mayor Pro Tem Blackburn, seconded by Council Member Bhat-Patel, to adopt Ordinance No. CS-374. Motion carried unanimously, 4/0.

Motion by Mayor Pro Tem Blackburn, seconded by Council Member Bhat-Patel, to adopt Ordinance No. CS-375. Motion carried unanimously, 4/0.

PUBLIC HEARINGS: None.

DEPARTMENTAL AND CITY MANAGER REPORTS:

7. COVID-19 ACTIONS AND EXPENDITURES REPORT – Receive a report on recent actions and expenditures related to the city's response to the COVID-19 pandemic and provide direction as appropriate. (Staff contact: Geoff Patnoe, City Manager Department)

City Manager's Recommendation: Receive the report and provide direction as appropriate.

Assistant Director of Emergency Services David Harrison, Deputy City Manager of Community Services Gary Barberio, Deputy City Manager of Public Works Paz Gomez, Police Chief Neil Gallucci, Senior Program Manager Holly Nelson, Fire Chief Michael Calderwood, Chief Innovation Officer David Graham, Communications Director Kristina Ray, and Deputy City Manager of Administrative Services Laura Rocha presented the report and reviewed a PowerPoint presentation (on file in the Office of the City Clerk).

David Rogers commented on his concern regarding short-term vacation rentals and hotels opening to nonessential workers as well as those individuals not adhering to the health order's mandate to wear masks.

In response to an inquiry from Council Member Schumacher, Deputy City Manager of Community Services Gary Barberio explained Parks & Recreation Department staff are working to reopen city pools to the public as close to June 12, 2020 as possible and will confirm a date as soon as possible.

In response to David Rogers comment, City Manager Scott Chadwick explained the actions city staff took to ensure businesses complied with the County of San Diego Health Order.

RECESS:

Mayor Hall declared a recess at 4:02 p.m.

Mayor Hall reconvened the meeting at 4:09 p.m.

8. DETERMINATION OF FOUR DEFICIENT STREET FACILITIES – Adoption of Resolution No. 2020-104 determining deficiencies of four street facilities according to the Growth Management Plan Vehicular Level of Service Standard Based upon the FY 2017-2018 Annual Monitoring Report; and
Adoption of Resolution No. 2020-105 exempting street facilities from the Growth Management Plan Vehicular Level of Service Standard, pursuant to Mobility 3-P.9, thereby refocusing planning efforts at these street facilities to transportation demand management strategies to reduce overall trip generation, and adoption of CEQA findings; and,
Adoption of Resolution No. 2020-106 expediting CIP Project No. 6094 (widening northbound El Camino Real from Sunny Creek Road to Jackspar Drive, and adoption of CEQA findings. (Staff contact: Paz Gomez, Public Works)

City Manager's Recommendation: Adopt the resolutions.

Deputy City Manager of Public Works Paz Gomez and Deputy City Manager of Community Services Gary Barberio presented the report and reviewed a PowerPoint presentation (on file in the Office of the City Clerk).

Steve Linke spoke regarding his recommendations and concerns with exemptions jeopardizing timely progress and funding of the College Boulevard extension as well as being unnecessary and inconsistent with the Growth Management Plan.

In response to an inquiry from Council Member Schumacher, Deputy City Manager Gomez explained the criteria for the Mobility Element Policy used to recommend facilities for exemption.

In response to an inquiry from Mayor Hall, City Attorney Celia Brewer explained there are different forms of public financing being explored pursuant to City Council's direction. She also stated the best legal strategy is to exempt those segments of road while they still qualify until the city is able to build the roads.

Motion by Mayor Pro Tem Blackburn, seconded by Council Member Bhat-Patel, to adopt Resolution No. 2020-104. Motion carried unanimously, 4/0.

Motion by Mayor Pro Tem Blackburn, seconded by Council Member Bhat-Patel, to adopt Resolution No. 2020-105. Motion carried, 3/1 (Schumacher – No).

Motion by Mayor Pro Tem Blackburn, seconded by Council Member Bhat-Patel, to adopt Resolution No. 2020-106. Motion carried unanimously, 4/0.

In response to an inquiry from Council Member Schumacher, Deputy City Manager Rocha explained a preliminary cost estimate and engineer's report must be conducted prior to determining which financing options are available.

Council Member Schumacher explained the reason she voted no on Resolution No. 2020-104: The reason I voted no has to do with accountability. There are four different types of accountability that organizations like ours take. They are either external or they're internal and my opinion about internal accountability on this particular grouping of items has been frustrating and so I would like for there to be certain actions taken in order to move us forward. Without getting too deep into it, I'm not comfortable with the ethics of the decision for item number two.

9. FISCAL YEAR 2020-21 INTERNAL AUDIT PLAN AND UPDATE ON AUDIT ACTIVITIES – Receive a report on the results of internal audit activities and annual audit plan for fiscal year 2019-20 and adoption of Resolution No. 2020-107 approving the Internal Audit Plan for Fiscal Year 2020-21. (Staff contact: Brigid Okyere and Laura Rocha, Administrative Services)

City Manager's Recommendation: Receive the report and adopt the resolution.

Deputy City Manager of Administrative Services Laura Rocha and Senior Accountant Brigid Okyere presented the report and reviewed a PowerPoint presentation (on file in the Office of the City Clerk).

Motion by Mayor Pro Tem Blackburn, seconded by Council Member Bhat-Patel, to adopt Resolution No. 2020-107. Motion carried unanimously, 4/0.

10. SUSTAINABLE MATERIALS MANAGEMENT UPDATE ON SOLID WASTE FRANCHISE AGREEMENTS FOR COLLECTION, PROCESSING AND DISPOSAL SERVICES – Receive an informational report on the city's franchise agreements related to recycling, organics and solid waste collection, organic materials processing service and transfer and disposal of solid waste material generated within the city. (Staff contact: James Wood, Public Works)

City Manager's Recommendation: Receive the report.

Environmental Manager James Wood and President of HF&H Consultants Rob Hilton presented the report and reviewed a PowerPoint presentation (on file in the Office of the City Clerk).

City Manager Scott Chadwick presented and reviewed an Additional Materials Memo that showed fiscal year 2020-21 proposed solid waste rates for North County cities.

Lori Summers, representing Coast Waste Management, spoke regarding her request to direct staff to meet with Coast Waste Management to negotiate in good faith a new recycling, organics, and solid waste franchise agreement.

In response to an inquiry from Mayor Pro Tem Blackburn, Manager Wood explained it is not legally required to request bids for the project and that while the city could negotiate with Coast Waste Management, however it is not currently known if the company can perform all of the requirements listed in the staff report. President Hilton added that the schedule could be impacted if contract negotiations were initiated with Coast Waste Management. City Manager Chadwick added that Coast Waste Management is eligible to participate in the procurement process and that the process addresses the changes in law and allows everyone to adequately compete.

In response to an inquiry from Mayor Hall, Manager Wood explained how quality of service will be ensured during the procurement process and selection. He also explained the different types of household waste.

Mayor Pro Tem Blackburn requested staff to present timely options to City Council in the future regarding contract negotiations and procurement.

COUNCIL REPORTS AND COMMENTS:

Council Member Schumacher clarified her comment regarding Item No. 8: When I referenced the ethics piece of my decision, it had to do with my ethical conflict; meaning that new staff, new administration, and new city manager are grappling, in my opinion, with some decisions from past administrations and past decisions that are really tough. And the organization, our city government, has a self-preservation component to it that is very much appreciated. But there are certain times when, for me as a decision maker, and I'm tasked as a representative of the people of Carlsbad, to be the citizen oversight on our local government, there are certain times that for me, and what I believe I've been elected to do, is focus on systemic accountability and structural change when its necessary. I just wanted to be clear it not something that's inherent to the decision itself, but it's just where I live when it comes to accountability on decisions that end up coming up from the past that need to be grappled with. I just wanted to make clear, there is no one in the organization at this point bringing something forward that I would consider to be unethical. It's when it comes to my decision making and the ethics that I hold highest, it's sort of a hierarchy of values, and for me, accountability is highest, especially on this particular piece. I just wanted to make that clear. I appreciate all of the work staff is doing, which is a tremendous amount right now. I'm really looking forward to continuing to parcel these really tough questions. So thank you very much. I appreciate today's conversation.

Mayor Hall thanked staff, protestors who helped ensure safety, and Christine Davis and the merchants in the city for coming together regarding the recent protests.

PUBLIC COMMENTS CONTINUED:

City Clerk Barbara Engleson explained a public comment speaker request was received late and that a vote would need to be taken in order to hear the speaker. Motion carried unanimously, 4/0.

Jan Neff-Sinclair spoke regarding her concern with Mayor Hall's and Mayor Pro Tem Blackburn's opposition to City Council's statement in solidarity with black lives.

Emailed comments received for the record:

Mary Lucid emailed her question regarding the upcoming budget.

Dan Walsh emailed his comment regarding his thanks for reopening beach parking.

Joan Markovits emailed her comment in opposition to the City Council's statement in solidarity with black lives.

CITY MANAGER COMMENTS: None.

CITY ATTORNEY COMMENTS: None.

CITY CLERK COMMENTS: None.

ANNOUNCEMENTS: None.

ADJOURNMENT: Mayor Hall adjourned the duly noticed meeting at 5:37 p.m.

Mia De Marzo
Deputy City Clerk



CITY COUNCIL
Staff Report

Meeting Date: July 21, 2020

To: Mayor and City Council

From: Scott Chadwick, City Manager

Staff Contact: Kyle Lancaster, Parks & Recreation Director
kyle.lancaster@carlsbadca.gov, 760-434-2941
Nathan Schmidt, Transportation Planning and Mobility Manager
nathan.schmidt@carlsbadca.gov, 760-602-2734

Subject: Americans with Disabilities Act Beach Access Feasibility Study and Trail Connectivity to Tamarack State Beach Feasibility Study.

Recommended Action

Adopt a resolution receiving and accepting the Americans with Disabilities Act (ADA) Beach Access Feasibility Study and the Trail Connectivity to Tamarack State Beach Feasibility Study, including the corresponding concept plans, and directing staff to prepare a request for proposals to pursue the environmental review, agency permitting, engineering and construction documentation phases of the projects.

Executive Summary

On July 24, 2018, the City Council adopted a resolution authorizing the execution of a Professional Services Agreement with Chen Ryan for the preparation of feasibility studies for the ADA Beach Access Project, Capital Improvement Program (CIP) Project No. 6065, and the Trail Connectivity to Tamarack State Beach Project, CIP Project No. 4063 (City Council Resolution No. 2018-14). As referenced in the July 24, 2018 staff report (Exhibit 2), the studies were to examine the feasibility of constructing ADA-accessible ramps from Carlsbad Boulevard to the beach, as well as the feasibility of a trail connection from the North Shore Agua Hedionda Lagoon Trail to the Tamarack State Beach.

The ADA Beach Access Feasibility Study evaluated five alternatives using criteria established by the project team. The project team goals were to develop up to two preferred alternatives for ADA access to the beach. The two preferred alternatives selected for this purpose are located north of Pine Avenue and at the Tamarack Avenue restroom. Staff is recommending pursuing the environmental review, agency permitting, engineering and construction documentation phases on both preferred alternatives, to provide ADA access at each end of the lower sea wall.

The Trail Connectivity to Tamarack State Beach Feasibility Study evaluated the feasibility of constructing a tunnel or undercrossing to connect the North Shore Agua Hedionda Lagoon Trail to Tamarack State Beach. The study evaluated five alternatives to determine the engineering feasibility, which took into consideration factors such as terrain, sea level rise and

constructability. The study found the cut-and-cover tunnel¹ was the most feasible alternative to connect the North Shore Agua Hedionda Lagoon Trail to Tamarack State Beach. Staff is recommending pursuing the environmental review, agency permitting, engineering and construction documentation phases for the cut-and-cover tunnel alternative.

Staff is therefore recommending the City Council accept the ADA Beach Access Feasibility Study and the Trail Connectivity to Tamarack State Beach Feasibility Study, including the corresponding concept plans, and direct staff to prepare a request for proposals to pursue the next phases of the projects, including environmental review, agency permitting, engineering and construction documentation for each project.

Discussion

This report transmits the ADA Beach Access Feasibility Study and the Trail Connectivity to Tamarack State Beach Feasibility Study, including a review of the existing conditions, study approach, community and stakeholder outreach, alternatives analysis and results of each study, as well as the state agency and city commissions' review of and comment on each study.

Community and stakeholder outreach

The development of both the ADA Access Feasibility Study and the Trail Connectivity to Tamarack State Beach Feasibility Study involved a public outreach process to help inform the final recommendations. In particular, the combined team of Public Works Branch staff, Parks & Recreation Department staff, and the integrated transportation and use planning consultant staff conducted community and stakeholder outreach to help identify the level of support for these projects. These events included a stakeholder group meeting held on Thursday, Nov. 15, 2018 and a follow-up stakeholder group meeting on Wednesday, Aug. 28, 2019. Additionally, staff held on-site "pop-up" events on Friday, Nov. 16, 2018 and Saturday, Nov. 17, 2018, to gather further community input.

The project stakeholder group consisted of residents and business owners from the surrounding area, with many of the meeting participants being wheelchair users who lived within Carlsbad Village. The two pop-up events were held along Carlsbad Boulevard, near the beach. The first was held on a Friday afternoon at the Ocean Street Sculpture Park, north of Pine Avenue, and the second event was held on a Saturday morning at the Tamarack State Beach upper picnic area, north of Tamarack Avenue.

Throughout the public outreach process, participants expressed the view that Carlsbad Village is great for wheelchair users due to the generally flat topography. The overwhelming consensus of participants was that the preferred location for ADA access to the beach would be near Pine Avenue, due to its proximity to Carlsbad Village. ADA access at Tamarack Avenue was identified as an additional location, but only if more than one ramp could be built, because of the high levels of pedestrian activity and available amenities at Tamarack State Beach.

¹ Cut-and-cover is a means of constructing shallow tunnels in which a trench is excavated and roofed over with material strong enough to carry the load of what is above the tunnel.

ADA Beach Access Feasibility Study

The primary objective of the ADA Beach Access Feasibility Study was to evaluate the feasibility of constructing one or more ADA-compliant pedestrian walkways and access ramps from Carlsbad Boulevard to the beach between the parking lot just north of Pine Avenue to the cold-water inlet bridge just south of Tamarack Avenue. At the north end of the project, near Pine Avenue, the roadway is about 30 feet above the beach while, at the south end, the roadway is about 12 feet above the parking lot at Tamarack State Beach.

Pedestrian access to the beach is currently provided via six stairways and two non-ADA compliant ramps. Vehicular access is provided as an extension of Pine Avenue to Frazee State Beach and of Tamarack Avenue to Tamarack State Beach. The slopes of the two ramps at Pine Avenue and at Tamarack Avenue, 15.6% and 9.9% respectively, exceed the allowable ADA slopes without landings. The maximum allowable slope of ramps for full ADA compliance is 8%.

Taking into account the existing use of the access, community input, an analysis of vegetation constraints and an engineering evaluation, all described in the feasibility study, the following five alternative ramp locations were identified for further evaluation:

1. North of Pine Avenue
2. At Pine Avenue
3. At Cherry Street
4. At the Tamarack Avenue restroom
5. South of the Tamarack Avenue Access Road

The evaluation criteria used to select the preferred ramp locations from the five alternative locations was based on the following 10 criteria, as developed by the project team:

1. Usage and demand
2. Safety and convenience
3. Construction feasibility and complexity
4. California Coastal Commission acceptance
5. Aesthetics
6. Public input
7. State Parks' concurrence
8. Vulnerability
9. Biological resources
10. Geotechnical and geological issues

A detailed evaluation was conducted of the five locations, and the two preferred alternative locations were determined to be North of Pine Avenue and at the Tamarack Avenue restroom. Here is how the five locations ranked, with summaries of the evaluations:

1. North of Pine Avenue - *Preferred Alternative 1*: This location scored highest across all criteria except for criterion 8, vulnerability. This location may be vulnerable to sea level

rise and storm damage because the end of the walkway ramp is at grade and not sheltered by shoreline protection. However, some of the existing rip-rap, or boulders, at the end of the ramp could be relocated to address this deficiency. In addition, the community and project stakeholders indicated that their most ideal location for ADA access would be near Pine Avenue because it is closer to Carlsbad Village than the proposed locations further south.

2. Pine Avenue: This location ranked third, scoring lower than the one north of Pine Avenue because of the complexity of constructing the ramp in the narrow area between the existing restroom and the upper sea wall walkway. It would also result in greater impacts to biological resources and require landform alterations at the end of the ramp.
3. Cherry Street: This location resulted in the lowest score, scoring poorly on the criteria of usage and demand, safety and convenience, and public input.
4. Tamarack Avenue Restroom - *Preferred Alternative 2*: This alternative location scored second highest overall. The project stakeholders also indicated that this location would be preferred if more than one ramp could be constructed, that is, in addition to the north of Pine Avenue location.
5. South of Tamarack Avenue Access Road: This alternative scored fourth, scoring lower than the Tamarack Avenue Restroom location due to sea level rise and storm damage vulnerability because the walkway would not land behind the lower sea wall. This location also scored low in regard to safety and convenience, as the walkway would cross the vehicle drive aisle to access the beach and would not allow for ADA access to the existing restroom.

The Pine Avenue ramp project would involve constructing an ADA-compliant ramp that would begin at the parking lot north of the intersection of Pine Avenue and Carlsbad Boulevard. The 389-foot ramp would change direction once, extending the pathway southward along the bluffs. The ramp would be designed with an incline of 7.8%. The ramp would be elevated as it descends the bluff, ranging between distances of approximately two to nine feet above the existing bluff below.

The proposed ramp at the Tamarack Avenue restroom would begin at the top of the bluff near the existing showers and restrooms and would extend southward, parallel to the existing access road to the Tamarack State Beach parking lot. The existing access road and walkway south of the proposed ramp would remain in its current state. Additionally, the existing staircase located perpendicular to the new ramp would be reconstructed. A portion of the ramp, approximately 60%, would be elevated along the bluff, ranging between two and five feet above the existing bluff. The ramp would be 196 feet in length and have an incline of 7.5%. The existing ramp to the restrooms would also be rebuilt to be ADA compliant. The proposed design of the Tamarack Avenue ramp utilizes existing access points and disturbed areas to minimize impacts to the undisturbed areas of the bluff.

Conceptual design plans, photo simulations and potential materials of the two preferred alternative locations are displayed in Figures 3 through 8 of the study and provided as a separate attachment. Staff recommends issuing a request for proposals to pursue the environmental review, agency permitting, engineering and construction documentation phases of both preferred alternatives, to provide ADA access to each end of the lower sea wall, which is designated as a city trail.

Trail Connectivity to Tamarack State Beach Feasibility Study

The Trail Connectivity to Tamarack State Beach Project would be located at the cold-water inlet bridge on Carlsbad Boulevard, south of Tamarack Avenue. The study's main objective was to evaluate the feasibility of constructing a pedestrian tunnel or undercrossing to connect the North Shore Agua Hedionda Lagoon Trail to Tamarack State Beach and to develop the preferred alternative. This trail connectivity is also consistent with the goals of the City of Carlsbad's Trails Master Plan.

Five alternatives were considered to provide a trail connection close to the cold-water inlet. The project team initially thought the crossing could be underneath the existing bridge or under the existing road, north of the bridge. An overcrossing alternative was not considered due to the significant visual impacts that an elevated bridge structure would present. The following alternatives were considered for a trail connection at the north side of the existing bridge:

1. **Pedestrian bridge:** This alternative would be located beneath the existing Carlsbad Boulevard bridge and would be supported on a pile foundation in front of the northern abutment. This option was considered infeasible because it would provide a maximum vertical clearance of 12.18 feet and would not meet the minimum required vertical clearance threshold of 12.5 feet.
2. **Open walkway:** This alternative would be located on a retaining wall beneath the Carlsbad Boulevard bridge. This option was determined to be infeasible due to potential hydraulic impacts and the requirement for deep foundations and walkway closures during storm events.
3. **Walled walkway:** This alternative is similar to the open walkway, but it would include walls to prevent water from entering the walkway. This alternative was determined to be not preferable due to the higher hydraulic impacts than the open walkway, the extensive foundations required for the wall and the need for closure during storm events.
4. **Tunnel:** This alternative would construct a standard tunnel underneath Carlsbad Boulevard. A tunnel typically requires a cover that is twice its diameter. To provide a nine-foot overhead clearance, which is the minimum clearance requested by the city for a closed crossing, the tunnel would need to be approximately 30 feet below ground, would be located beneath the required water surface elevation and would be prone to continual flooding due to the proximity of the lagoon.

5. Cut and-cover – *Preferred Alternative*: This alternative would be similar to the tunnel and would also be underneath Carlsbad Boulevard; however, the trench excavation would be much shallower, as the earth cover can be as shallow as 12 inches. The project team found this alternative to be the most feasible option for crossing at this location considering the design limitations of the other alternatives.

As described above, the cut-and-cover tunnel was found to be the most feasible option to connect the North Shore Agua Hedionda Lagoon Trail and Tamarack State Beach. This alternative would consist of a single precast reinforced concrete box culvert crossing under Carlsbad Boulevard, north of the existing Carlsbad Boulevard Bridge. The proposed structure would be built using accelerated bridge construction methods to minimize potential disruptions to traffic and nearby residents.

The completed cut-and-cover tunnel structure would be 92.5 feet long and 12 feet wide and nine feet high, following the same alignment of the existing Carlsbad Boulevard bridge. At the Tamarack State Beach parking lot, a four-foot berm is proposed to keep water out of the tunnel. Additionally, a gate can be added to both ends of the tunnel for closure during maintenance or flooding.

To provide complete ADA access from the eastern side of Carlsbad Boulevard to Tamarack State Beach on the west, an ADA ramp connecting the eastern sidewalk of Carlsbad Boulevard to the North Shore Agua Hedionda Lagoon Trail would be provided. On the western side of the crossing under Carlsbad Boulevard, an ADA-compliant concrete walkway would connect to the existing parking lot at Tamarack State Beach. The parking lot would be reconfigured to provide a four-foot wide ADA path of travel along the western edge of the existing parking lot. The parking lot would be restriped to accommodate the proposed ADA path of travel, while maintaining the existing number of parking stalls and minimum parking lot drive aisle widths.

Conceptual design plans and photo simulations of the preferred alternative are displayed in Figures 5 through 6A of the study and provided as a separate attachment. Staff recommends issuing a request for proposals to pursue the environmental review, agency permitting, engineering and construction documentation phases of the cut-and-cover tunnel alternative.

Review by state agencies and city commissions

Staff has met with, and electronically communicated with, the local staffs of the California Coastal Commission and the California Department of Parks and Recreation, or State Parks, regarding these feasibility studies on multiple occasions since the projects' inception. On Nov. 8, 2019, staff received a detailed set of comments on the draft studies from the California Coastal Commission's local staff. On Jan. 20, 2020, staff and the city's consultant responded to all of the comments received from the California Coastal Commission's local staff (Exhibit 3). Staff also forwarded those responses to comments to the State Parks local staff.

On Feb. 6, 2020, staff met with State Parks local staff regarding these studies. Staff responded to several questions posed by State Parks local staff, primarily with respect to specific technical items that would be addressed through subsequent phases of the projects. The California

Coastal Commission would have appeal authority on the city’s issuance of a coastal development permit for the ADA Beach Access Project and would have primary authority on the issuance of a coastal development permit for the Trail Connectivity to Tamarack State Beach Project. State Parks would have permitting authority on both projects, relative to property ownership rights.

Staff presented a report on these project feasibility studies to the Traffic and Mobility Commission on Feb. 3, 2020. The commission voted unanimously to support staff’s recommendation for the City Council to approve the studies. Staff presented informational reports on these project feasibility studies to the Beach Preservation Commission on Feb. 4, 2020 and to the Parks & Recreation Commission on Feb. 24, 2020. All three commissions expressed general support of the projects’ intentions and concepts. Individual members of each commission also provided the following comments, as summarized by staff:

Traffic and Mobility Commission

- Recommended a barrier along the edges of the access ramps for added protection of users
- Expressed concerns regarding the temporary traffic impacts during construction of a tunnel
- Questioned the need of trail connection to Tamarack State Beach based on user volume

Beach Preservation Commission

- Reinforced the need to position the ADA-access ramps to accommodate sea level rise
- Recommended installing deterrents to skateboarders on ADA-access ramps and guard rails

Parks & Recreation Commission

- Considered installation of additional disabled parking stalls at the Ocean Street parking lot
- Questioned the use of city funding versus the use of state or grant funding for construction
- Recommended transitions from the ADA-access ramps onto hardened mats over the sand

Fiscal Analysis

The feasibility studies developed a planning-level opinion of the probable construction costs for the ADA-access ramps and the trail connectivity to Tamarack State Beach.

The estimated cost of the ADA Beach Access project, including design, state environmental clearance and construction, was approximately \$2,800,000 for each ramp. A detailed breakdown of the costs can be found in Appendix F of the Carlsbad ADA Beach Access Feasibility Study. The total available funding for this project is reflected in the table below.

ADA BEACH ACCESS PROJECT - CIP PROJECT NO. 6065	
Current appropriation	\$375,000
Current Expenditures/encumbrances	\$103,110
TOTAL AVAILABLE FUNDING	\$271,890

The estimated cost of the Trail Connectivity to Tamarack State Beach Project, including design, state environmental clearance and construction, was approximately \$3,000,000. A detailed

breakdown of the costs can be found in Appendix B of the Trail Connectivity to Tamarack State Beach Feasibility Study. The total available funding for this project is reflected in the table below.

TRAIL CONNECTIVITY TO TAMARACK STATE BEACH – CIP PROJECT NO. 4063	
Current appropriation	\$3,276,000
Current expenditures/encumbrances	\$152,160
TOTAL AVAILABLE FUNDING	\$3,123,840

Proposition H

In 1982, the citizens of Carlsbad adopted Proposition H, codified at Carlsbad Municipal Code Chapter 1.24, which states,

The city shall make no real property acquisition and/or no improvement to real property the cost of which exceeds one million dollars in city funds, unless the proposed acquisition and/or improvement project and the cost in city funds is first placed upon the ballot and approved by a majority of the voters voting thereon at an election. A project may not be separated into parts or phases so as to avoid the effects of this chapter.

Proposition H allows the City Council to adopt reasonable guidelines to implement the chapter following notice and a public hearing, which occurred on April 5, 1983 and July 19, 2005. Guideline 6 states, in relevant part, that an “Improvement to Real Property” does “not include replacement, repair, maintenance, routine refurbishment or upgrades of existing facilities as they are considered to be routine ongoing capital expenditures necessary to carry out the normal and routine business of the city.” Guideline 6 also allows the City Council to make findings on a case-by-case basis regarding whether an exception applies to a particular project. Guideline 5 requires any legal challenge to the determinations of the City Council made in regard to the application of the ordinance or the guidelines, or a decision to undertake a particular project be brought within 30 days.

Then in 2001, the citizens of Carlsbad adopted Proposition C which approved spending city funds, including General Fund money, in an amount exceeding \$ 1 million to construct certain capital facilities, including trails linkages.

The proposed resolution includes findings for City Council to make regarding the application of Propositions H and C and the implementing guidelines, in order to utilize the 30-day limitations period provided by Guideline 5. The proposed findings are that the ADA Beach Access Project (CIP Project No. 6065) and the Trail Connectivity to Tamarack State Beach Project (CIP Project No. 4063) are in compliance with Proposition H because Proposition C specifically allows for the expenditure of General Fund monies in excess of \$1 million for trail linkages such as these. Alternatively, the projects may be considered routine ongoing capital upgrades of existing facilities, which are exempt from Proposition H voter approval requirements.

Next Steps

Staff will prepare a request for proposals for a firm to address the environmental review, agency permitting, engineering and construction documentation phases of the projects.

Environmental Evaluation (CEQA)

In keeping with California Environmental Quality Act Guidelines Section 15262, feasibility studies for possible future actions which the city has not approved, adopted or funded are exempt from environmental review provided that environmental factors are considered. Both recommended feasibility studies include a brief analysis of environmental constraints. Selecting project alternatives for which to pursue the environmental review, agency permitting, engineering and construction documentation does not commit the city to any definite course of action and does not foreclose the potential for alternatives or mitigation measures.

Public Notification

Public notice of this item was posted in accordance with the Ralph M. Brown Act and it was available for public viewing and review at least 72 hours prior to scheduled meeting date.

Exhibits

1. City Council resolution
2. City Council staff report and resolution of July 24, 2018
3. Jan. 20, 2020 responses to comments received from local California Coastal Commission staff

RESOLUTION NO.

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CARLSBAD, CALIFORNIA, ACCEPTING THE AMERICANS WITH DISABILITIES ACT BEACH ACCESS FEASIBILITY STUDY AND THE TRAIL CONNECTIVITY TO TAMARACK STATE BEACH FEASIBILITY STUDY, INCLUDING THE CORRESPONDING CONCEPT PLANS, AND DIRECTING STAFF TO PREPARE A REQUEST FOR PROPOSALS TO PURSUE THE ENVIRONMENTAL REVIEW, AGENCY PERMITTING, ENGINEERING AND CONSTRUCTION DOCUMENTATION PHASES OF THE PROJECTS.

WHEREAS, on July 24, 2018, the City Council adopted a resolution authorizing the execution of a Professional Services Agreement with Chen Ryan for the preparation of feasibility studies for the Americans with Disabilities Act (ADA) Beach Access Project, Capital Improvement Program (CIP) Project No. 6065, and the Trail Connectivity to Tamarack State Beach Project, CIP Project No. 4063; and

WHEREAS, the development of both the ADA Beach Access Feasibility Study and the Trail Connectivity to Tamarack State Beach Feasibility Study involved a public outreach process to help inform the final recommendations; and

WHEREAS, the combined team of Public Works Branch staff, Parks & Recreation Department staff, and the integrated transportation and land use planning consultant's staff conducted community and stakeholder outreach to help identify the level of support for these projects; and

WHEREAS, these events included a stakeholder group meeting held on Thursday, Nov. 15, 2018 and a follow-up stakeholder group meeting on Wednesday, Aug. 28, 2019, and on-site "pop-up" events Friday, Nov. 16, 2018 and Saturday, Nov. 17, 2018, to gather further community input; and

WHEREAS, throughout the public outreach process, participants expressed that Carlsbad Village is great for wheelchair users due to the generally flat topography; and

WHEREAS, the overwhelming consensus of participants was that the preferred location for ADA access to the beach would be near Pine Avenue, due to its proximity to Carlsbad Village; and

WHEREAS, an ADA access at Tamarack Avenue was identified as an additional location - due to the high levels of pedestrian activity and available amenities at Tamarack State Beach; and

WHEREAS, the ADA Beach Access Feasibility Study evaluated five alternatives using criteria established by the project team; and

WHEREAS, the project team goals were to develop up to two preferred alternatives for ADA access to the beach; and

WHEREAS, the two preferred alternatives selected for this purpose are located north of Pine Avenue and at the Tamarack Avenue restroom; and

WHEREAS, the two preferred alternatives would provide ADA accessible connections to the lower sea wall, which is designated as a city trail; and

WHEREAS, staff recommends pursuing the environmental review, agency permitting, engineering and construction documentation phases on both preferred alternatives, to provide ADA access at each end of the lower sea wall; and

WHEREAS, the Trail Connectivity to Tamarack State Beach Feasibility Study evaluated the feasibility of constructing a tunnel or undercrossing to connect the North Shore Agua Hedionda Lagoon Trail to Tamarack State Beach; and

WHEREAS, the study evaluated five alternatives to determine the engineering feasibility, which took into consideration factors such as terrain, sea level rise and constructability; and

WHEREAS, the cut-and-cover tunnel was found to be the most feasible option to connect the North Shore Agua Hedionda Lagoon Trail to Tamarack State Beach; and

WHEREAS, staff recommends pursuing the environmental review, agency permitting, engineering and construction documentation phases for the cut-and-cover tunnel alternative; and

WHEREAS, staff has met with, and electronically communicated with, the California Coastal Commission (CCC) local staff and the California Department of Parks and Recreation (State Parks) local staff regarding these feasibility studies on multiple occasions since the projects' inception; and

WHEREAS, the CCC would have appeal authority on the city's issuance of a Coastal Development Permit for the ADA Beach Access Project and would have primary authority on the issuance of a coastal development permit for the Trail Connectivity to Tamarack State Beach Project; and

WHEREAS, State Parks would have permitting authority on both projects, relative to property ownership rights; and

WHEREAS, the estimated cost of the ADA Beach Access Project was ~\$2,800,000 per ramp; and

WHEREAS, the estimated cost of the Trail Connectivity Project was ~\$3,000,000; and

WHEREAS, Proposition H, codified in Carlsbad Municipal Code Chapter 1.24, states in relevant part that "the city shall make no real property acquisition and/or no improvement to real property the cost of which exceeds one million dollars in city funds, unless the proposed acquisition and/or improvement project and the cost in city funds is first placed upon the ballot and approved by a majority of the voters voting thereon at an election;" and

WHEREAS, the Guidelines implementing Proposition H, adopted pursuant to the Carlsbad Municipal Code Section 1.24.050, states that the term "Improvement to Real Property' shall not include replacement, repair, maintenance, routine refurbishment or upgrades of existing facilities as they are considered to be routine ongoing capital expenditures necessary to carry out the normal and routine business of the city. The City Council may make findings on a case-by-case basis on whether the above exceptions are applicable to a proposed project;" and

WHEREAS, the ADA Beach Access and Trail Connectivity to Tamarack State Beach projects are not “Improvements to Real Property” as defined by the guidelines implementing Proposition H because the proposed projects are upgrades of existing facilities necessary to provide ADA access to beaches and trails in the City of Carlsbad; and

WHEREAS, Proposition C, approved by a majority of voters in the City of Carlsbad in 2001, authorized “spending city funds from various sources including the General Fund in an amount over \$1 million to construct capital facilities including ... trail linkages and open space...”; and

WHEREAS, the ADA Beach Access and Trail Connectivity to Tamarack State Beach projects are both trail linkages; and

WHEREAS, staff is recommending City Council accept these two feasibility studies, including the corresponding concept plans, and direct staff to proceed with the issuance of a request for proposals for the environmental review, agency permitting, engineering and construction documentation phases of the ADA Beach Access and Trail Connectivity to Tamarack State Beach projects; and

WHEREAS, the City Planner has determined that City Council’s acceptance of the feasibility studies is categorically exempt per the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines section 15262 and will not have a significant effect on the environment because it is the acceptance of a consultant’s feasibility study for possible future actions which the city has not approved, adopted or funded; and

WHEREAS, selecting project alternatives for which to pursue the environmental review, agency permitting, engineering and construction documentation does not commit the city to any definite course of action and does not foreclose the potential alternatives or mitigation measures.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Carlsbad, California, as

follows:

1. That the above recitations are true and correct.
2. That the Americans With Disabilities Act Feasibility Study and the Trail Connectivity to Tamarack State Beach Feasibility Study (Attachment A and Attachment B, respectively), including corresponding concept plans (Attachment C), are accepted.
3. That the City Council selects Preferred Alternatives 1 and 4 as the preferred project alternative for the ADA Beach Access Project.
4. That the City Council selects Preferred Alternative 5 as the preferred project alternative for the Trail Connectivity to Tamarack State Beach Project.
5. That staff is directed to prepare a request for proposals to pursue the environmental review, agency permitting, engineering and construction documentation phases of the ADA Beach Access and Trail Connectivity to Tamarack State Beach projects.
6. That funding the proposed ADA Beach Access project, CIP Project No. 6065, and Trail Connectivity to Tamarack State Beach Project, CIP Project No. 4063, using General Fund money would comply with Proposition H because Proposition C authorized expenditures of city funds over \$1 million for trail linkages, and the proposed projects would not be an Improvement to Real Property, as defined by the guidelines implementing Proposition H.
7. That the City Planner has considered the environmental factors and determined that this action is categorically exempt from CEQA pursuant to CEQA Guidelines section 15262 and that an exception to the exemption does not apply. Selecting project alternatives for which to pursue the environmental review, agency permitting, engineering and construction documentation does not commit the city to any definite course of action and does not foreclose the potential for alternatives or mitigation measures.

PASSED, APPROVED AND ADOPTED at a Regular Meeting of the City Council of the City of Carlsbad on the ___ day of _____, 2020, by the following vote, to wit:

AYES:

NAYS:

ABSENT:

MATT HALL, Mayor

BARBARA ENGLESON, City Clerk

(SEAL)

ADA Beach Access Feasibility Study

Final Report

Prepared for:



Transportation Planning & Mobility
Public Works Department
City of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92008-7314

Prepared by:



3900 5th Avenue, Suite 310
San Diego, CA 92103

January 2020

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1.0 Introduction

1.1 Overview

The City of Carlsbad Public Works – Transportation Department commissioned a feasibility study to evaluate alternatives to provide access to Carlsbad State Beach (beach) that are compliant with the Americans with Disabilities Act (ADA) requirements.

Purpose

The purpose of the project is to provide access for all pedestrians, regardless of ability, to one of the area’s premiere beaches. The importance of this project cannot be understated since it will allow the community to enjoy a beautiful natural-resource that is unique to the region. The proposed project promotes the spirit and vision of both the California Coastal Act and the Americans with Disabilities Act.

1.2 Project Identification and Goals

ADA Beach Access Study, CIP No. 60651

The project’s main objective is to evaluate the feasibility of constructing one or more ADA access ramps to provide a connection from Carlsbad Boulevard to the beach. A number of alternatives were considered and evaluated using criteria established by the project team. The project goal was to develop up to two preferred alternatives for this connection between Carlsbad Boulevard and the beach.

1.3 Project Study Area

The ADA Beach Access Study project area is along Carlsbad Boulevard and the beach from to the parking lot just north of Pine Avenue to the Cold-Water Inlet Bridge (bridge), just south of Tamarack Avenue.

Figure 1 displays the project’s study area.

Figure 1 – Project Study Area



2.0 Existing Conditions

Carlsbad State Beach, also known as Tamarack State Beach, stretches from the warm water jetties, just south of Tamarack Avenue, to Frazee Beach, near Carlsbad Village Drive.

Carlsbad Boulevard runs along the bluffs above the beach along this stretch of coastline. At the north end of the project (near Pine Avenue), the roadway is approximately 30 feet above the beach; at the south end (bridge), the roadway is about 12 feet above the parking lot. Along these 4,200 lineal feet, pedestrian access is provided via six stairways and two ramps. Vehicular access is provided as an extension of Tamarack Avenue to Tamarack State Beach. The slopes of the two ramps at Pine Avenue and Tamarack Avenue exceed the allowable slopes defined by ADA at 15.6% and 9.9%, respectively and with no landings.

The Carlsbad Seawall, a paved walking path along the coast, extends from Pine Avenue to Tamarack Avenue. The lower seawall runs along the bottom of the bluffs at the back beach and provides shoreline protection for the walking path and the bluffs. Stairs are provided to connect to lower seawall to the beach. The upper seawall includes a paved walking trail along the west side of Carlsbad Boulevard. The section of the coastline is highly utilized by people walking, jogging, and cycling.

3.0 Feasibility Study Approach

This chapter describes the various studies performed as part of the selection process for the location of the proposed ramps.

3.1 Existing Access Utilization

In order to determine utilization at the existing points of access to the beach, pedestrian counts were conducted at eight (8) locations (see below) along Carlsbad Boulevard on an average Saturday (Saturday, August 11, 2018).

1. Pine Avenue Beach Access Ramp;
2. Sycamore Avenue Stairway;
3. Maple Avenue Stairway;
4. Cherry Avenue Stairway;
5. Hemlock Avenue Stairway;
6. Tamarack Avenue Stairway;
7. Tamarack Beach Parking Lot Access Road Walkway; and
8. Cold-Water Inlet Stairway.

Table 3.1 displays the pedestrian counts collected Saturday, August 11, 2018.

TABLE 3.1 – 24-HR PEDESTRIAN ACTIVITY – SATURDAY, AUGUST 11, 2018

Location	Total Pedestrian Counts	Peak Hour	Peak Hour Volume
1 – Pine Avenue Beach Access Ramp	5,720	7:00 PM	536
2 – Sycamore Avenue Stairway	1,599	2:00 PM	191
3 – Maple Avenue Stairway	1,249	1:00 PM	126
4 – Cherry Avenue Stairway	2,042	7:00 PM	206
5 – Hemlock Avenue Stairway	1,686	4:00 PM	173
6 – Tamarack Avenue Stairway	3,477	7:00 PM	316
7 – Tamarack Beach Parking Lot Access Road Walkway	1,758*	7:00 PM	215*
8 – Cold-Water Inlet Stairway	1,007	9:00 AM	120

Source: Chen Ryan Associates, June 2019.

Notes:

*Pedestrian volumes obtained using ratios developed based on counts from Friday, August 10th.

As shown in Table 3.1, the Pine Avenue Beach Access Ramp was identified as the location with the highest pedestrian activity with 5,720 pedestrians on an average summer Saturday. It should also be noted that the combined number of pedestrians at the two available access points at Tamarack Avenue was 5,235. The Cold-Water Inlet Stairway was identified as the location with the lowest pedestrian activity with 1,007 pedestrians on an average summer Saturday. See **Appendix A** for pedestrian count worksheets.

3.2 Community Input

The project team conducted community and stakeholder outreach initiatives to identify the level of support and obtain community input for the ADA Beach Access Feasibility Study. These efforts included:

- Stakeholder Meeting (November 15, 2018);
- On-site “pop-up” events (November 16 and 17, 2018).

The people who were invited to the Stakeholder Meeting were residents that had previously expressed a desire for better access to Carlsbad State Beach. Many of these stakeholders are wheelchair users and lived in the Carlsbad Village. They expressed that the village is a great for them due to the generally flat topography. The overwhelming consensus from this group was that their most ideal location for ADA access would be near Pine Avenue. Tamarack Avenue was identified as a potential

location if more than one ramp could be built. The reason for this overwhelming consensus is due to the close proximity to Carlsbad Village of a Pine Avenue ADA Ramp compared to other locations further to the south.

The two “pop-up” events were held on-site. One was held on a Friday afternoon near Pine Avenue and the second was held on a Saturday morning near Tamarack Avenue. There was board support from the community for the project at these two events.



“Pop-up” event held near Pine Avenue on November 16, 2018

3.3 Vegetation Constraints Analysis

To aid in siting considerations that may minimize impacts to native habitats, the project team conducted a qualitative assessment of bluff habitats supporting native plants along the coastal bluffs in the project vicinity.

This assessment included a field inspection of the site to determine species composition and relative cover values for native plants, non-native plants, and unvegetated areas. Bluff habitats were divided into areas (polygons) of similar cover proportions and depicted on a map.

Common native species observed in the study area included coast prickly pear (*Opuntia littoralis*), California fuchsia (*Epilobium canum*), seacliff buckwheat (*Eriogonum parvifolium*), California boxthorn (*Lycium californicum*), coastal goldenbush (*Isocoma menziesii*), coast cholla (*Cylindropuntia prolifera*), and California encelia (*Encelia californica*). Common non-native species observed included, ngaio (*Myoporum laetum*), sea lavender (*Limonium perezii*), and natal plum (*Carissa macrocarpa*).

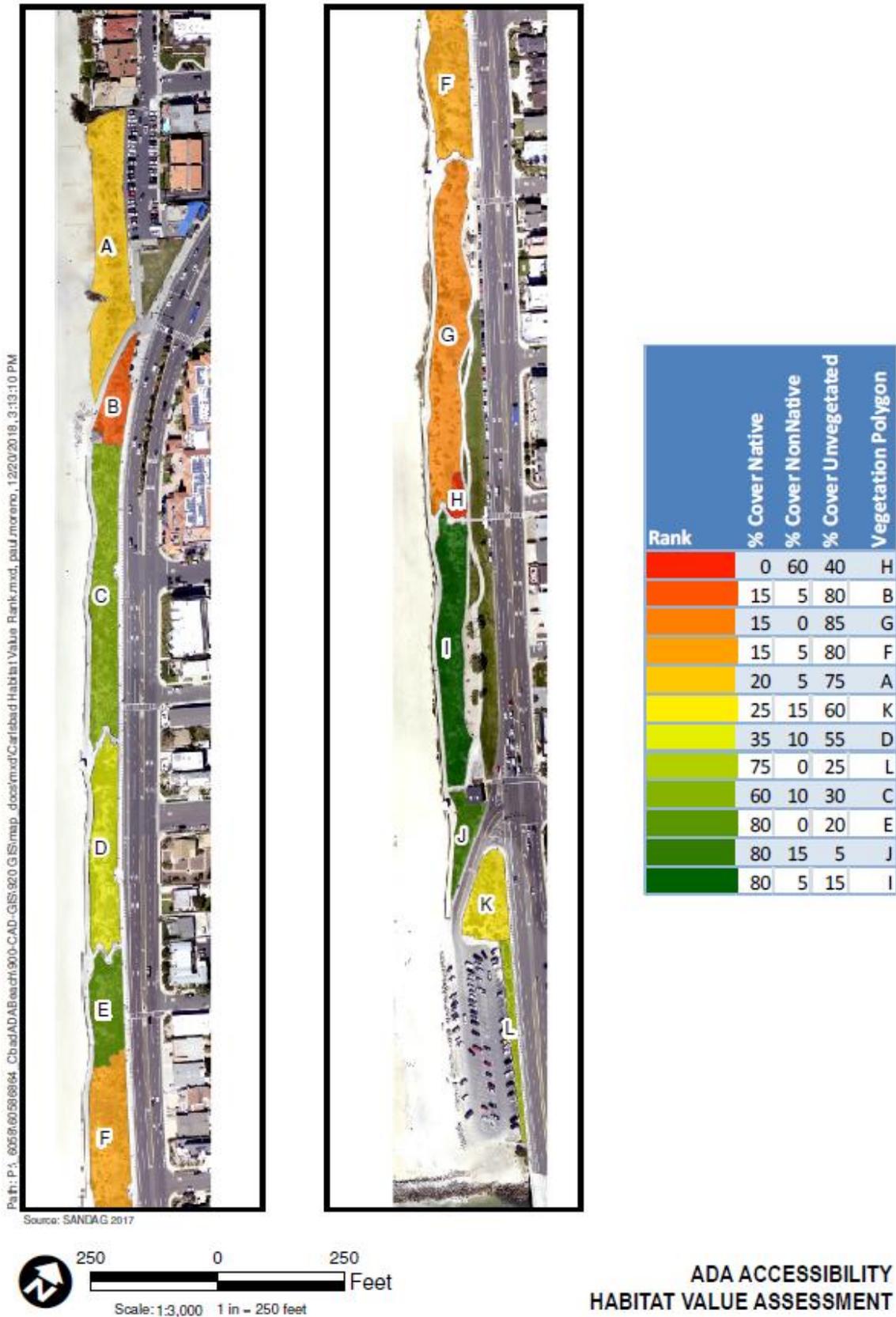
On the basis of the relative cover values, each of the 12 mapped polygons were then ranked from highest potential impact to native plant resources (Rank of 1) to lowest potential impact to native plant resources (Rank of 12) on the basis of the assigned cover value using the following assumptions:

- Higher relative cover value of native plant implies higher potential impacts
- Higher relative cover value of non-native plants implies lower potential impacts
- Higher relative cover value of unvegetated implies lower potential impacts

See **Appendix B** for the Vegetation Constraints Memorandum.

The vegetation assessment provides a ranking for potential habitat impacts associated with construction of ADA access along Carlsbad Boulevard. **Figure 2** displays polygons and their respective ranking with the highest rankings reflect the lowest degree of impact to native and/or dense vegetation along the bluffs, while those with lower rankings represent those areas that should be avoided if feasible. For example, Polygon “I” had the lowest ranking and would result in the highest amount of impacts to native and/or dense vegetation, therefore this area was to be avoided. Polygon H has the highest ranking of 12 and would result in the least amount of impacts. Impacts to this resource represent one consideration among many, and helped inform siting efforts for the preferred alternatives.

Figure 2 – Habitat Value Assessment



3.4 Engineering Evaluation

A number of steps were taken to evaluate the engineering feasibility of ADA access ramp(s) from Carlsbad Boulevard to the beach. Two key factors that were considered throughout this evaluation were landform alteration and shoreline protection. This is due to the project team's understanding of the California Coastal Commission's (CCC) desire to minimize landform alteration and installation of new shoreline protection along the coastline.

A review of existing conditions was completed, including an evaluation of how long ADA compliant ramps would need to be at various locations within the study area. Existing utilities were also identified within the project area. These included the storm drain outfall at Pine Avenue and above ground irrigation within along the bluffs.

In order to determine if the ramps could be constructed at grade while minimizing landform alteration, a slope analysis was completed along the bluffs within the study area.

See **Appendix C** for slope analysis exhibits.

Land Form Alteration

Land form alteration is identified in the California Coastal Act as a significant environmental concern for the following reasons:

- Land form alteration often leads to loss of habitat, erosion, runoff and water quality degradation.
- Once land form alteration has occurred, it is difficult, if not impossible for an engineered area to replicate all the functions of an unaltered area.
- Land form alteration in steep slope areas can have far more impact than in low relief areas.
- Development in steep areas often proposes vast amounts of land form alteration to make the area safe and buildable.

Slope Analysis Results

The slope analysis showed slopes of steeper than 2:1 within the bluffs throughout the study area. These steep slopes led the project team to determine that an **elevated ramp system** with pile supports would be seen as more favorable compared to an at-grade ramp by both the CCC and CA State Parks.

Geotechnical

Based on preliminary review of existing conditions and the Geotechnical Investigation Report for the Tamarack Coastal Improvements Project prepared by AECOM on March 2018, since the proposed pile supports are entirely in the bluffs, putting it in formational soil (Terrace Deposits), liquefaction would not be an issue.

3.5 Development and Evaluation of Ramp Alternatives

Based on the existing access utilization, community input, the vegetation constraints analysis, and the engineering evaluation, all described above, five (5) different alternative ramp locations were identified for further evaluation:

- North of Pine Avenue
- Pine Avenue
- Cherry Street
- Tamarack Avenue Restroom
- South of Tamarack Avenue Access Road

3.6 Evaluation criteria to select preferred ramp

The project team identified fourteen (14) potential criterion for evaluation of the five alternatives. These included the following:

1. Usage / Demand
2. Safety and Convenience
3. Construction Feasibility / Complexity
4. California Coastal Commission Acceptance
5. Aesthetics
6. Public Input
7. State Parks Concurrence
8. Sea Level Rise / Storm Damage Vulnerability
9. Biological Resources
10. Geotechnical / Geology
11. Transportation / Traffic
12. Noise
13. Greenhouse Gas Emissions
14. Air Quality

The project team participated in an online survey to rank the fourteen (14) potential criterion based on each team member's opinion of what should be considered as most important. These ranking led to the elimination of the four (4) lowest scoring criterion, leaving the team with ten (10) criterion for ranking the alternative ramp locations. Further, the project team utilized the ranking from the survey to assign weights to each of the scoring criterion with the highest being worth a maximum of 13 points and the lowest being worth a maximum of 6 points out of 100. **Table 4.1** depicts the final criteria and associated weight given to each criterion. It should be noted each of the five (5) ramp alternative locations would have received very similar scores for each of the four criterion that were eliminated (Transportation/Traffic, Noise, Greenhouse Gas Emissions, and Air Quality).

TABLE 4.1 displays the criteria for evaluating alternatives with associated weighting

#	Criteria	Weight	Weighted Max
1	Usage/Demand	1.3	13
2	Safety/Convenience	1.3	13
3	Construction Feasibility/Complexity	1.1	11
4	CCC Acceptance	1.1	11
5	Aesthetics	1.1	11
6	Public Input	1.0	10
7	State Parks Concurrence	1.0	10
8	Vulnerability	0.8	8
9	Biological Resources Impact	0.7	7
10	Geotech / Geology	0.6	6
Total		10.0	100

Source: Chen Ryan Associates, June 2019.

4.0 Feasibility Study Results

4.1 Preferred Alternatives

The project team utilized the criteria for evaluating alternative locations to score each of the five (5) alternative locations compared to one another.

Summary of the evaluation for each alternative:

- North of Pine Avenue – **preferred alternative #1**. The alternative location scored high across the board with high scores for usage/demand, construction feasibility/complexity, CCC acceptance, public input, State Parks concurrence, and biological resources impact. The only real mark against this alternative is vulnerability. This is because the end of the ramp is at grade and not protected by shoreline protection. However, some of the existing rip-rap could be moved around to enhance this deficiency.
- Pine Avenue – This alternative scored lower than North of Pine due to the complexity of constructing the ramp in the narrow area between the existing restroom and the upper sea wall walkway. It would also result in greater impacts to biological resources and require some landform alteration at the end of the ramp.
- Cherry Street - **lowest score**. This alternative scored poorly on usage/demand, safety/convenience, and public input.
- Tamarack Avenue Restroom – **preferred alternative #2**. This alternative location scored second highest overall.

- South of Tamarack Avenue Access Road – This alternative scored lower than the Tamarack Avenue Restroom due to vulnerability (it does not land behind the lower seawall) and safety/convenience (it requires crossing vehicle drive aisle to access the beach and does not allow for ADA access to the existing restroom).

4.2 Conceptual Design

Schmidt Design Group developed a number of rough sketches for the two preferred alternatives (see **Appendix D**). These were refined utilizing input from the project team and city staff (see **Appendix E**). Some of the key decisions that were made during this process included the following:

- North of Pine Avenue Ramp –
 - Land the ramp near the existing rip-rap adjacent to the existing restroom. This approach mitigates the vulnerability to raising sea levels and provides access to the ADA compliant restroom. Landing on the sand as shown on some of the initial sketches was not seen as ideal.
 - Do not include stairs. The project team decided that inclusion of stairs that provide access to a different portion of the beach does not meet the reasonable accommodation requirements of ADA.
 - Ramp to be 8’ wide.
 - Maintain existing informal railroad tie access trails at the parking lot.
- Tamarack Avenue Restroom Ramp –
 - Minimize ramp length within the bluffs. This approach lessens impact to biological resources.
 - Revise existing ramp to existing restroom to be ADA compliant. This allows for ADA access to the existing restrooms and also allows a large portion of the ramp system to be built at-grade (much lower cost) on previously disturbed land.
 - Ramp to be 8’ wide.

Figures 4-7 display the North of Pine Avenue Ramp and Tamarack Avenue Restroom Ramp final concepts and photo simulations.

Figures 8 and 9 display the conceptual design character and plant materials for the projects.

Figure 4 – North of Pine Avenue Ramp – Photosimulation



Figure 5 – Tamarack Avenue Restroom Ramp



- KEY**
- 1 PROPOSED 8'-0" WIDE CONCRETE RAMP WITH HANDRAILING
 - 2 PROPOSED 8' ELEVATED WOOD RAMP ON STRUCTURAL COLUMNS
 - 3 PROPOSED STAIRCASE
 - 4 PROPOSED PLANTING AREA; TYPICAL
 - 5 PROPOSED RETAINING WALL
 - 6 PROPOSED ACCESSIBLE PATH TO PARKING LOT
 - 7 EXISTING SEAWALL
 - 8 EXISTING RETAINING WALL
 - 9 EXISTING PLANTING AREA
 - 10 EXISTING GUARDRAILING
 - 11 RELOCATE EXISTING PICNIC TABLE
 - 12 RELOCATE EXISTING TRASH RECEPTACLES
 - 13 EXISTING PICNIC TABLE
 - 14 EXISTING SHOWERS AND PLAZA
 - 15 EXISTING FENCE
 - 16 EXISTING PAVING
 - 17 EXISTING LIFEGUARD TOWER
 - 18 EXISTING AC SIDEWALK

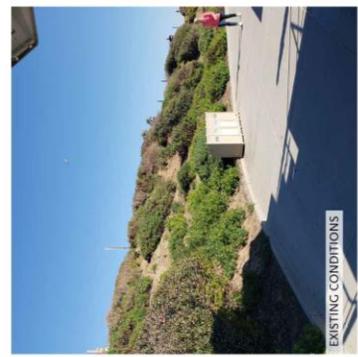


Figure 6 – Tamarack Avenue Restroom Ramp – Photosimulation



Figure 7 – Conceptual Design Character

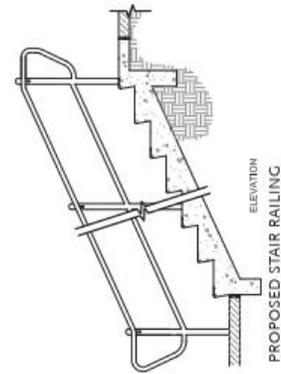
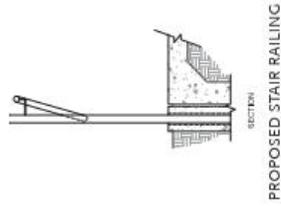


Figure 8 – Proposed Plant Materials



4.3 Opinion of Probable Construction Costs

The project team developed a planning level opinion of probable construction costs for the ramps. The estimated cost, including design and CEQA clearance, was **\$2.8M for each ramp**. A breakdown of costs can be found in **Appendix F**.

4.4 CEQA Clearance

The project team completed an evaluation of environmental constraints to help transition into the next phase of the project. The biggest constraint are the existing biological resources that would be impacted by construction. However, these impacts can be mitigated. The Environmental Constraints Analysis Table can be found in **Appendix G**.

Appendix A Pedestrian Activity Analysis

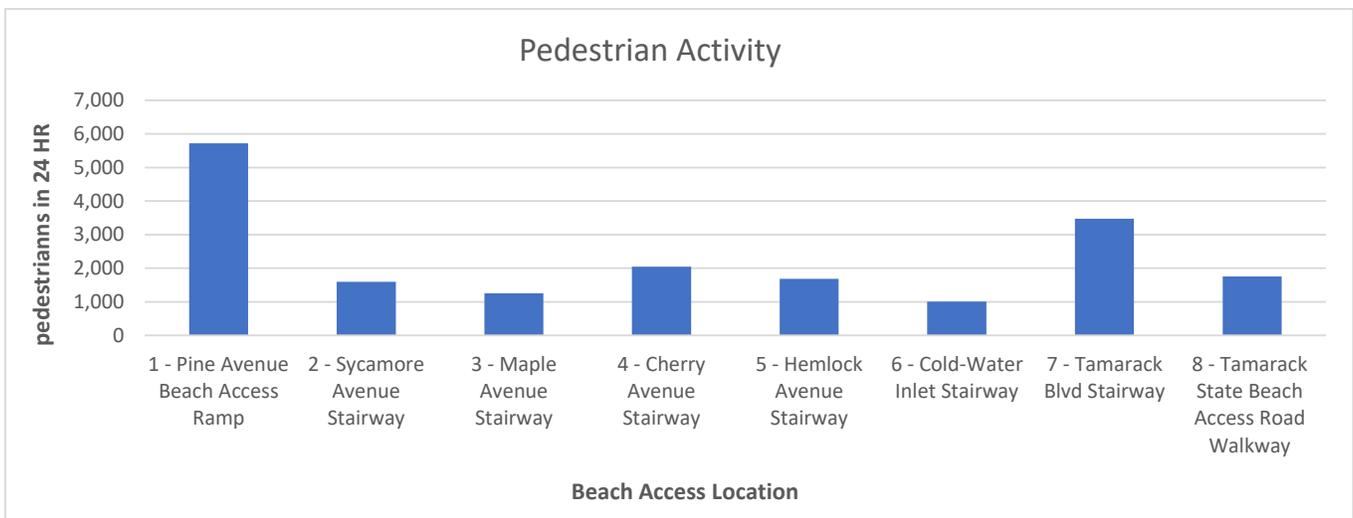
24-Hr Pedestrian Activity - Friday, August 10, 2018

Total Pedestrian			
Location	Counts	Peak Hour	Peak Hour Volume
7 - Tamarack Blvd Stairway	2,162	7:00 PM	203
8 - Tamarack State Beach Access Road Walkway	1,140	7:00 PM	138

24-Hr Pedestrian Activity - Saturday, August 11, 2018

Total Pedestrian			
Location	Counts	Peak Hour	Peak Hour Volume
1 - Pine Avenue Beach Access Ramp	5,720	7:00 PM	536
2 - Sycamore Avenue Stairway	1,599	2:00 PM	191
3 - Maple Avenue Stairway	1,249	1:00 PM	126
4 - Cherry Avenue Stairway	2,042	7:00 PM	206
5 - Hemlock Avenue Stairway	1,686	4:00 PM	173
6 - Cold-Water Inlet Stairway	1,007	9:00 AM	120
7 - Tamarack Blvd Stairway	3,477	7:00 PM	316
8 - Tamarack State Beach Access Road Walkway	1,758*	7:00 PM	215*

*Pedestrian volumes obtained using ratios developed based on counts from Friday, August 10th



Location 1 - Pine Avenue Beach Access Ramp experienced the highest pedestrian activity with 5,720 pedestrians.

Location 6 - Cold-Water Inlet Stairway experienced the lowest pedestrian activity with 1,007 pedestrians.

PEDESTRIAN BEACH ACCESS STUDY			
SATURDAY - AUGUST 11, 2018			
CITY:		CARLSBAD	
PROJECT:		PTD18-0810-02	
LOCATION 1- Pine Avenue Beach Access Ramp			

1	00:00	→	01:00	31
2	01:00	→	02:00	33
3	02:00	→	03:00	0
4	03:00	→	04:00	0
5	04:00	→	05:00	2
6	05:00	→	06:00	15
7	06:00	→	07:00	75
8	07:00	→	08:00	189
9	08:00	→	09:00	325
10	09:00	→	10:00	447
11	10:00	→	11:00	361
12	11:00	→	12:00	418
13	12:00	→	13:00	388
14	13:00	→	14:00	410
15	14:00	→	15:00	371
16	15:00	→	16:00	360
17	16:00	→	17:00	363
18	17:00	→	18:00	426
19	18:00	→	19:00	436
20	19:00	→	20:00	536
21	20:00	→	21:00	316
22	21:00	→	22:00	96
23	22:00	→	23:00	69
24	23:00	→	00:00	53

DAILY LOCATION TOTAL	5720
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PACIFIC TECHNICAL DATA, LLC

PEDESTRIAN BEACH ACCESS STUDY			
SATURDAY - AUGUST 11, 2018			
CITY:		CARLSBAD	
PROJECT:		PTD18-0810-02	
LOCATION 2 - Sycamore Avenue Stairway			

1	00:00	→	01:00	8
2	01:00	→	02:00	2
3	02:00	→	03:00	0
4	03:00	→	04:00	0
5	04:00	→	05:00	4
6	05:00	→	06:00	6
7	06:00	→	07:00	27
8	07:00	→	08:00	24
9	08:00	→	09:00	71
10	09:00	→	10:00	86
11	10:00	→	11:00	109
12	11:00	→	12:00	91
13	12:00	→	13:00	115
14	13:00	→	14:00	131
15	14:00	→	15:00	191
16	15:00	→	16:00	137
17	16:00	→	17:00	122
18	17:00	→	18:00	129
19	18:00	→	19:00	105
20	19:00	→	20:00	128
21	20:00	→	21:00	64
22	21:00	→	22:00	5
23	22:00	→	23:00	16
24	23:00	→	00:00	28

DAILY LOCATION TOTAL	1599
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PACIFIC TECHNICAL DATA, LLC

PEDESTRIAN BEACH ACCESS STUDY			
SATURDAY - AUGUST 11, 2018			
CITY: CARLSBAD			
PROJECT: PTD18-0810-02			
LOCATION 3 - Maple Avenue Stairway			

1	00:00	→	01:00	7
2	01:00	→	02:00	2
3	02:00	→	03:00	0
4	03:00	→	04:00	0
5	04:00	→	05:00	4
6	05:00	→	06:00	2
7	06:00	→	07:00	8
8	07:00	→	08:00	44
9	08:00	→	09:00	55
10	09:00	→	10:00	62
11	10:00	→	11:00	88
12	11:00	→	12:00	96
13	12:00	→	13:00	74
14	13:00	→	14:00	126
15	14:00	→	15:00	116
16	15:00	→	16:00	93
17	16:00	→	17:00	107
18	17:00	→	18:00	124
19	18:00	→	19:00	95
20	19:00	→	20:00	75
21	20:00	→	21:00	54
22	21:00	→	22:00	8
23	22:00	→	23:00	8
24	23:00	→	00:00	1

DAILY LOCATION TOTAL	1249
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PACIFIC TECHNICAL DATA, LLC

PEDESTRIAN BEACH ACCESS STUDY			
SATURDAY - AUGUST 11, 2018			
CITY:		CARLSBAD	
PROJECT:		PTD18-0810-02	
LOCATION 4 - Cherry Avenue Stairway			

1	00:00	→	01:00	6
2	01:00	→	02:00	4
3	02:00	→	03:00	6
4	03:00	→	04:00	0
5	04:00	→	05:00	0
6	05:00	→	06:00	4
7	06:00	→	07:00	17
8	07:00	→	08:00	67
9	08:00	→	09:00	79
10	09:00	→	10:00	95
11	10:00	→	11:00	121
12	11:00	→	12:00	155
13	12:00	→	13:00	137
14	13:00	→	14:00	158
15	14:00	→	15:00	149
16	15:00	→	16:00	189
17	16:00	→	17:00	180
18	17:00	→	18:00	154
19	18:00	→	19:00	156
20	19:00	→	20:00	206
21	20:00	→	21:00	62
22	21:00	→	22:00	27
23	22:00	→	23:00	23
24	23:00	→	00:00	47

DAILY LOCATION TOTAL	2042
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PACIFIC TECHNICAL DATA, LLC

PEDESTRIAN BEACH ACCESS STUDY			
SATURDAY - AUGUST 11, 2018			
CITY:		CARLSBAD	
PROJECT:		PTD18-0810-02	
LOCATION 5 - Hemlock Avenue Stairway			

1	00:00	→	01:00	4
2	01:00	→	02:00	0
3	02:00	→	03:00	0
4	03:00	→	04:00	2
5	04:00	→	05:00	2
6	05:00	→	06:00	3
7	06:00	→	07:00	27
8	07:00	→	08:00	68
9	08:00	→	09:00	57
10	09:00	→	10:00	93
11	10:00	→	11:00	81
12	11:00	→	12:00	121
13	12:00	→	13:00	115
14	13:00	→	14:00	172
15	14:00	→	15:00	150
16	15:00	→	16:00	134
17	16:00	→	17:00	173
18	17:00	→	18:00	145
19	18:00	→	19:00	111
20	19:00	→	20:00	124
21	20:00	→	21:00	39
22	21:00	→	22:00	35
23	22:00	→	23:00	24
24	23:00	→	00:00	6

DAILY LOCATION TOTAL	1686
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PACIFIC TECHNICAL DATA, LLC

PEDESTRIAN BEACH ACCESS STUDY			
SATURDAY - AUGUST 11, 2018			
CITY: CARLSBAD			
PROJECT: PTD18-0810-02			
LOCATION 6 - Cold-Water Inlet Stairway			

1	00:00	→	01:00	5
2	01:00	→	02:00	0
3	02:00	→	03:00	0
4	03:00	→	04:00	0
5	04:00	→	05:00	0
6	05:00	→	06:00	3
7	06:00	→	07:00	34
8	07:00	→	08:00	68
9	08:00	→	09:00	111
10	09:00	→	10:00	120
11	10:00	→	11:00	101
12	11:00	→	12:00	49
13	12:00	→	13:00	54
14	13:00	→	14:00	36
15	14:00	→	15:00	48
16	15:00	→	16:00	41
17	16:00	→	17:00	70
18	17:00	→	18:00	63
19	18:00	→	19:00	78
20	19:00	→	20:00	69
21	20:00	→	21:00	32
22	21:00	→	22:00	21
23	22:00	→	23:00	2
24	23:00	→	00:00	2

DAILY LOCATION TOTAL	1007
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PACIFIC TECHNICAL DATA, LLC

ADA Beach Access - Tamarack Blvd Stairway

Fri Aug 10, 2018

Full Length (12AM-12AM (+2))

All Classes (Pedestrians, Pedestrians, Bicycles, Bicycles)

All Channels

ID: 553192, Location: 33.147429, -117.345717

Provided by: City of Carlsbad (CA)
1635 Faraday Ave, Carlsbad, CA, 92008, US

Leg Direction	North Southbound		South Northbound		
Time	T	App	T	App	Int
2018-08-10 12:00AM	0	0	0	0	0
1:00AM	0	0	0	0	0
2:00AM	0	0	0	0	0
3:00AM	0	0	0	0	0
4:00AM	0	0	0	0	0
5:00AM	1	1	2	2	3
6:00AM	17	17	8	8	25
7:00AM	31	31	35	35	66
8:00AM	29	29	32	32	61
9:00AM	51	51	37	37	88
10:00AM	81	81	45	45	126
11:00AM	76	76	86	86	162
12:00PM	100	100	88	88	188
1:00PM	86	86	105	105	191
2:00PM	74	74	86	86	160
3:00PM	69	69	109	109	178
4:00PM	83	83	109	109	192
5:00PM	70	70	97	97	167
6:00PM	70	70	87	87	157
7:00PM	79	79	124	124	203
8:00PM	45	45	88	88	133
9:00PM	25	25	19	19	44
10:00PM	9	9	1	1	10
11:00PM	3	3	5	5	8
2018-08-11 12:00AM	1	1	1	1	2
1:00AM	2	2	2	2	4
2:00AM	0	0	1	1	1
3:00AM	0	0	0	0	0
4:00AM	1	1	0	0	1
5:00AM	7	7	4	4	11
6:00AM	30	30	9	9	39
7:00AM	59	59	49	49	108
8:00AM	71	71	70	70	141
9:00AM	91	91	87	87	178
10:00AM	111	111	82	82	193
11:00AM	147	147	101	101	248
12:00PM	122	122	113	113	235
1:00PM	156	156	142	142	298
2:00PM	156	156	168	168	324
3:00PM	113	113	163	163	276
4:00PM	116	116	191	191	307
5:00PM	126	126	143	143	269
6:00PM	136	136	162	162	298
7:00PM	117	117	199	199	316
8:00PM	66	66	79	79	145
9:00PM	30	30	28	28	58
10:00PM	4	4	19	19	23
11:00PM	0	0	2	2	2
Total	2661	2661	2978	2978	5639
% Approach	100%	-	100%	-	-
% Total	47.2%	47.2%	52.8%	52.8%	-
Pedestrians	0	0	0		
% Pedestrians	0%	0%	0%	0%	0%
Bicycles	0	0	0		

Leg Direction	North Southbound		South Northbound		
Time	T	App	T	App	Int
% Bicycles	0%	0%	0%	0%	0%
Pedestrians	2661	2661	2977	2977	5638
% Pedestrians	100%	100%	100%	100.0%	100.0%
Bicycles	0	0	1	1	1
% Bicycles	-	0%	100%	0%	0.0%

*T: Thru

ADA Beach Access - Tamarack State Beach Access Road Walkway

Fri Aug 10, 2018

Full Length (12AM-9:45AM (+1))

All Classes (Pedestrians, Pedestrians)

All Channels

ID: 554529, Location: 33.147551, -117.345407

Provided by: City of Carlsbad (CA)
1635 Faraday Ave, Carlsbad, CA, 92008, US

Leg Direction	North Southbound		South Northbound		Int
	T	App	T	App	
Time					
2018-08-10 12:00AM	0	0	0	0	0
12:15AM	0	0	0	0	0
12:30AM	0	0	0	0	0
12:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
1:00AM	0	0	0	0	0
1:15AM	0	0	0	0	0
1:30AM	0	0	0	0	0
1:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
2:00AM	0	0	0	0	0
2:15AM	0	0	0	0	0
2:30AM	0	0	0	0	0
2:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
3:00AM	0	0	0	0	0
3:15AM	0	0	0	0	0
3:30AM	0	0	0	0	0
3:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
4:00AM	0	0	0	0	0
4:15AM	0	0	0	0	0
4:30AM	0	0	0	0	0
4:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
5:00AM	0	0	0	0	0
5:15AM	1	1	0	0	1
5:30AM	1	1	0	0	1
5:45AM	1	1	2	2	3
Hourly Total	3	3	2	2	0
6:00AM	0	0	2	2	2
6:15AM	2	2	1	1	3
6:30AM	0	0	4	4	4
6:45AM	2	2	3	3	5
Hourly Total	4	4	10	10	0
7:00AM	4	4	5	5	9
7:15AM	13	13	3	3	16
7:30AM	15	15	7	7	22
7:45AM	7	7	9	9	16
Hourly Total	39	39	24	24	0
8:00AM	7	7	5	5	12
8:15AM	3	3	10	10	13
8:30AM	5	5	4	4	9
8:45AM	6	6	4	4	10
Hourly Total	21	21	23	23	0
9:00AM	11	11	7	7	18
9:15AM	11	11	5	5	16
9:30AM	18	18	7	7	25
9:45AM	13	13	5	5	18
Hourly Total	53	53	24	24	0
10:00AM	12	12	7	7	19
10:15AM	18	18	11	11	29
10:30AM	13	13	3	3	16
10:45AM	10	10	3	3	13

Leg Direction	North Southbound		South Northbound		Int
	T	App	T	App	
Time					
Hourly Total	53	53	24	24	0
11:00AM	16	16	5	5	21
11:15AM	8	8	4	4	12
11:30AM	19	19	7	7	26
11:45AM	14	14	18	18	32
Hourly Total	57	57	34	34	0
12:00PM	4	4	1	1	5
12:15PM	6	6	7	7	13
12:30PM	6	6	5	5	11
12:45PM	9	9	8	8	17
Hourly Total	25	25	21	21	0
1:00PM	3	3	4	4	7
1:15PM	10	10	9	9	19
1:30PM	15	15	5	5	20
1:45PM	0	0	4	4	4
Hourly Total	28	28	22	22	0
2:00PM	8	8	3	3	11
2:15PM	12	12	5	5	17
2:30PM	12	12	18	18	30
2:45PM	1	1	4	4	5
Hourly Total	33	33	30	30	0
3:00PM	13	13	4	4	17
3:15PM	17	17	3	3	20
3:30PM	8	8	4	4	12
3:45PM	14	14	14	14	28
Hourly Total	52	52	25	25	0
4:00PM	20	20	12	12	32
4:15PM	12	12	10	10	22
4:30PM	16	16	8	8	24
4:45PM	10	10	15	15	25
Hourly Total	58	58	45	45	0
5:00PM	8	8	4	4	12
5:15PM	16	16	7	7	23
5:30PM	6	6	9	9	15
5:45PM	9	9	3	3	12
Hourly Total	39	39	23	23	0
6:00PM	13	13	4	4	17
6:15PM	6	6	6	6	12
6:30PM	23	23	13	13	36
6:45PM	31	31	4	4	35
Hourly Total	73	73	27	27	0
7:00PM	19	19	19	19	38
7:15PM	12	12	8	8	20
7:30PM	32	32	6	6	38
7:45PM	30	30	12	12	42
Hourly Total	93	93	45	45	0
8:00PM	24	24	13	13	37
8:15PM	21	21	10	10	31
8:30PM	15	15	2	2	17
8:45PM	1	1	1	1	2
Hourly Total	61	61	26	26	0
9:00PM	3	3	3	3	6
9:15PM	0	0	5	5	5
9:30PM	2	2	6	6	8
9:45PM	1	1	5	5	6
Hourly Total	6	6	19	19	0
10:00PM	0	0	0	0	0
10:15PM	0	0	1	1	1
10:30PM	4	4	2	2	6
10:45PM	4	4	0	0	4

Leg Direction	North		South		Int
	Southbound		Northbound		
Time	T	App	T	App	
Hourly Total	8	8	3	3	0
11:00PM	0	0	2	2	2
11:15PM	1	1	2	2	3
11:30PM	0	0	0	0	0
11:45PM	0	0	2	2	2
Hourly Total	1	1	6	6	0
2018-08-11 12:00AM	0	0	0	0	0
12:15AM	0	0	0	0	0
12:30AM	0	0	0	0	0
12:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
1:00AM	0	0	0	0	0
1:15AM	0	0	3	3	3
1:30AM	0	0	0	0	0
1:45AM	0	0	0	0	0
Hourly Total	0	0	3	3	0
2:00AM	0	0	0	0	0
2:15AM	0	0	0	0	0
2:30AM	0	0	0	0	0
2:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
3:00AM	0	0	0	0	0
3:15AM	0	0	0	0	0
3:30AM	1	1	3	3	4
3:45AM	1	1	0	0	1
Hourly Total	2	2	3	3	0
4:00AM	0	0	0	0	0
4:15AM	0	0	0	0	0
4:30AM	0	0	0	0	0
4:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
5:00AM	0	0	0	0	0
5:15AM	0	0	0	0	0
5:30AM	0	0	1	1	1
5:45AM	3	3	1	1	4
Hourly Total	3	3	2	2	0
6:00AM	1	1	2	2	3
6:15AM	3	3	2	2	5
6:30AM	7	7	4	4	11
6:45AM	7	7	1	1	8
Hourly Total	18	18	9	9	0
7:00AM	7	7	6	6	13
7:15AM	8	8	11	11	19
7:30AM	8	8	8	8	16
7:45AM	7	7	5	5	12
Hourly Total	30	30	30	30	0
8:00AM	8	8	19	19	27
8:15AM	21	21	19	19	40
8:30AM	11	11	13	13	24
8:45AM	10	10	5	5	15
Hourly Total	50	50	56	56	0
9:00AM	15	15	12	12	27
9:15AM	14	14	18	18	32
9:30AM	18	18	8	8	26
9:45AM	2	2	1	1	3
Hourly Total	49	49	39	39	0
Total	859	859	575	575	1434
% Approach	100%	-	100%	-	-
% Total	59.9%	59.9%	40.1%	40.1%	-
Pedestrians	0	0	0		

Leg Direction	North Southbound		South Northbound		
Time	T	App	T	App	Int
% Pedestrians	0%	0%	0%	0%	0%
Pedestrians	859	859	575	575	1434
% Pedestrians	100%	100%	100%	100%	100.0%

*T: Thru

Appendix B

Vegetation Constraints Memorandum

Memorandum

To	Matt Capuzzi, Chen Ryan	Page	1
CC			
Subject	ADA Accessibility - Vegetation Constraints Review		
From	Cindy Kinkade, AECOM		
Date	December 20, 2018		

Various siting options for ADA access to Carlsbad State Beach along Carlsbad Boulevard between Pine Avenue and Tamarack Avenue are currently being considered. One consideration in siting may be quality and density of native vegetation along the existing bluff. To aid in siting considerations that may minimize impacts to native habitats, this qualitative assessment was conducted of bluff habitats supporting native plants along the coastal bluffs in the project vicinity. Bluffs in the project area have received various levels of habitat restoration/enhancement in recent years through the coordinated efforts of the City of Carlsbad, Carlsbad State Park, and community volunteers. These restoration activities have included the installation of irrigation systems, the planting of native species, and the treatment and removal of invasive species. Specific areas within the proposed project area continue to be characterized by sparse vegetation and/or bare patches and/or the presence of non-native or invasive species.

This assessment included a field inspection of the site to determine species composition and relative cover values for native plants, non-native plants, and unvegetated areas. Bluff habitats were divided into areas (polygons) of similar cover proportions and depicted on a map (attached). Relative cover values (totaling 100%) were assigned to each polygon by visual inspection of recent aerial imagery (SANDAG 2017) and comparison to a California Native Plant Society cover diagram (https://cnps.org/wp-content/uploads/2018/03/percent_cover_diag-cnps.pdf).

Common native species observed in the study area included coast prickly pear (*Opuntia littoralis*), California fuchsia (*Epilobium canum*), seacliff buckwheat (*Eriogonum parvifolium*), California boxthorn (*Lycium californicum*), coastal goldenbush (*Isocoma menziesii*), coast cholla (*Cylindropuntia prolifera*), and California encelia (*Encelia californica*). Common non-native species observed included, ngaio (*Myoporum laetum*), sea lavender (*Limonium perezii*), and natal plum (*Carissa macrocarpa*).

On the basis of the relative cover values, each of the 12 mapped polygons was then ranked from *highest potential impact to native plant resources* (Rank of 1) to *lowest potential impact to native plant resources* (Rank of 12) on the basis of the assigned cover value using the following assumptions:

- Higher relative cover value of native plant *implies higher potential impacts*
- Higher relative cover value of non-native plants *implies lower potential impacts*
- Higher relative cover value of unvegetated *implies lower potential impacts*

The assigned cover values and overall rank are presented in the attached table, and a graphical representation of the overall ranking is presented in the attached figure.

Vegetation Polygon (North to South)	% Cover Native	% Cover NonNative	% Cover Unvegetated	Rank
A	20	5	75	8
B	15	5	80	11
C	60	10	30	4
D	35	10	55	6
E	80	0	20	3
F	15	5	80	9
G	15	0	85	10
H	0	60	40	12
I	80	5	15	1
J	80	15	5	2
K	25	15	60	7
L	75	0	25	5

The vegetation assessment provides a ranking for potential habitat impacts associated with construction of ADA access along Carlsbad Boulevard. Polygons with the highest ranking (red on the attached figure) would result in the lowest degree of impact to native and/or dense vegetation along the bluffs, while those with lower rankings (green on the attached figure) represent those areas that should be avoided if feasible. For example, Polygon I has the lowest ranking of 1 and would result in the highest amount of impacts to native and/or dense vegetation, therefore this area should be avoided if possible. Polygon H has the highest ranking of 12 and would result in the least amount of impacts. Impacts to this resource represent one consideration among many, and may help inform siting efforts for the proposed project. Please feel free to contact me at (619) 610-7801 or cindy.kinkade@aecom.com to discuss the project and we will expedite any requests for additional information.

Sincerely,

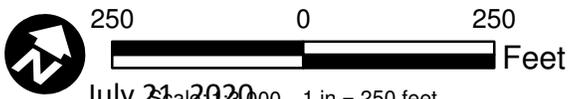
Cindy Kinkade
AECOM Project Manager

Attachments:
ADA Accessibility Habitat Value Assessment Map

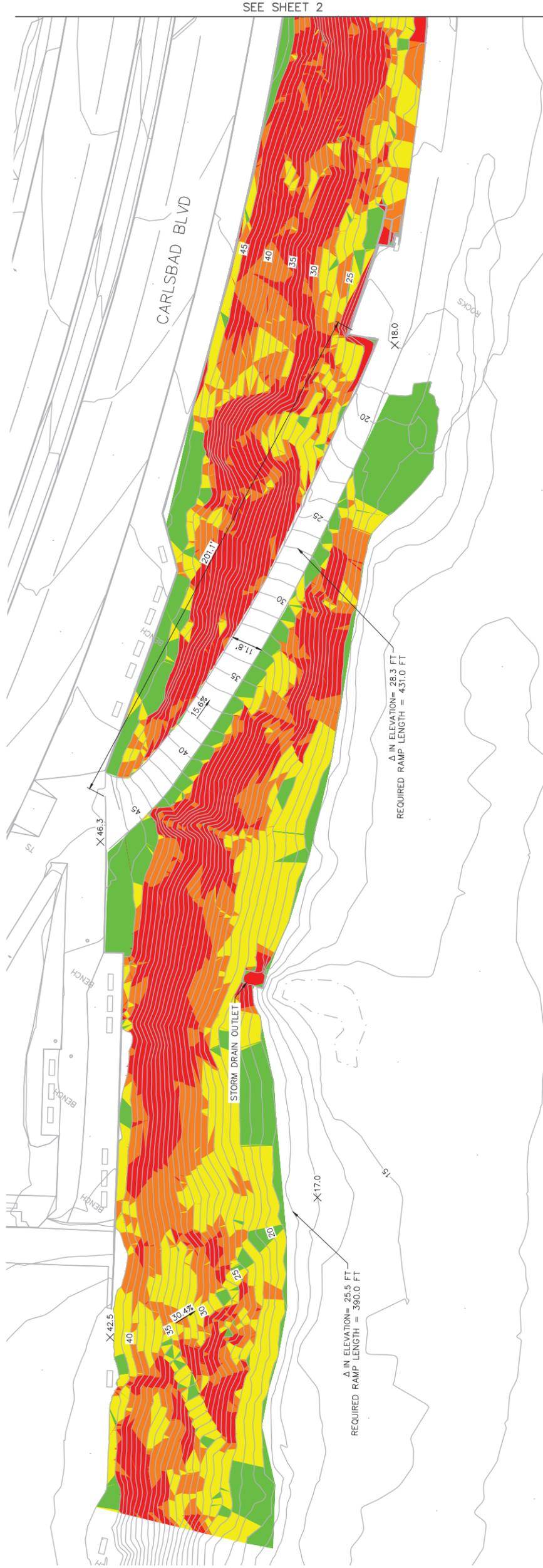


Rank	% Cover Native	% Cover NonNative	% Cover Unvegetated	Vegetation Polygon
0	60	40	H	
15	5	80	B	
15	0	85	G	
15	5	80	F	
20	5	75	A	
25	15	60	K	
35	10	55	D	
75	0	25	L	
60	10	30	C	
80	0	20	E	
80	15	5	J	
80	5	15	I	

Source: SANDAG 2017



Appendix C
Existing Conditions Analysis

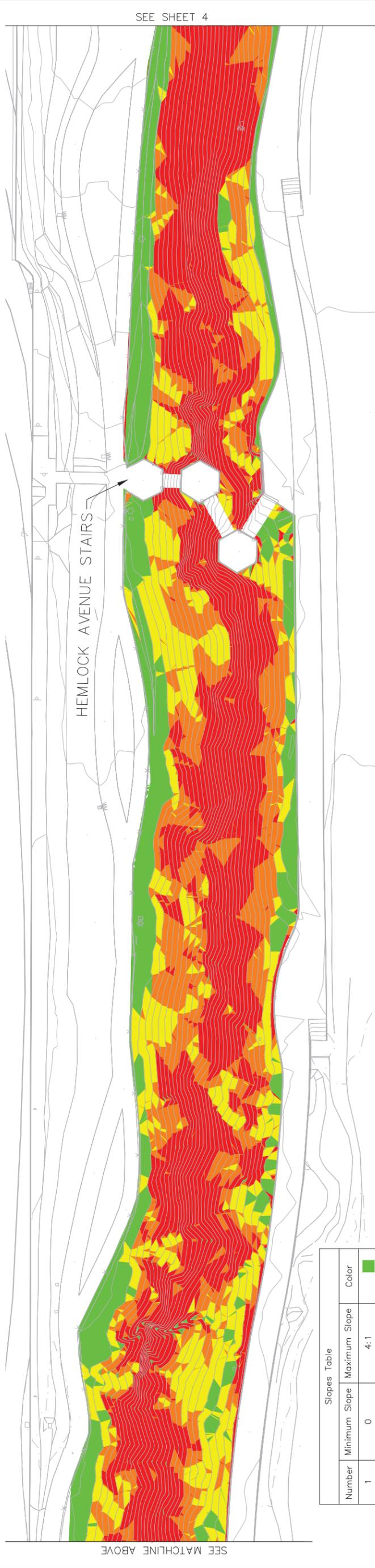
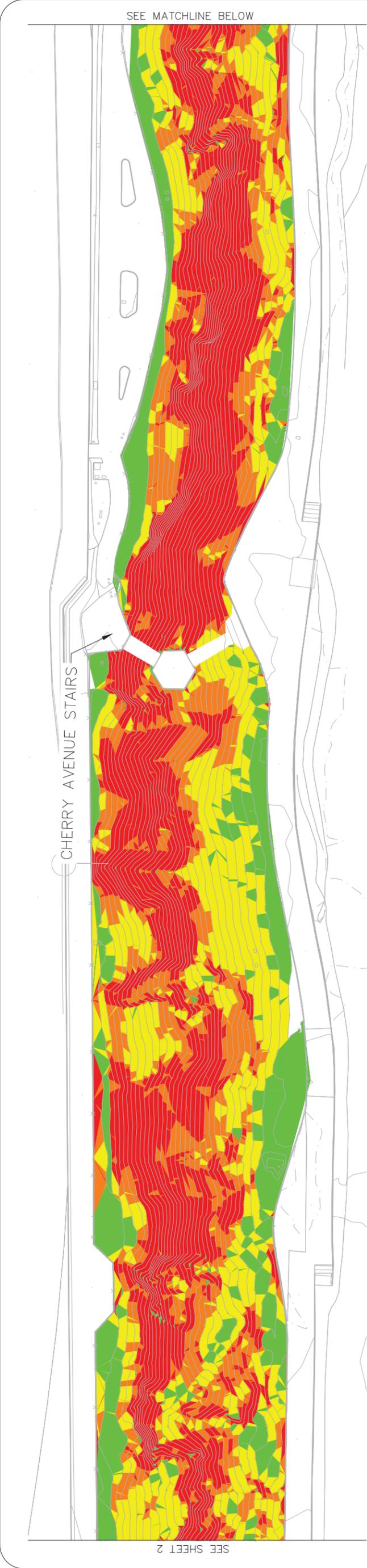


Slopes Table

Number	Minimum Slope	Maximum Slope	Color
1	0	4:1	
2	4:1	2.5:1	
3	2.5:1	2:1	
4	GREATER THAN 2:1		



Carlsbad ADA Beach and Lagoon Access Feasibility Study

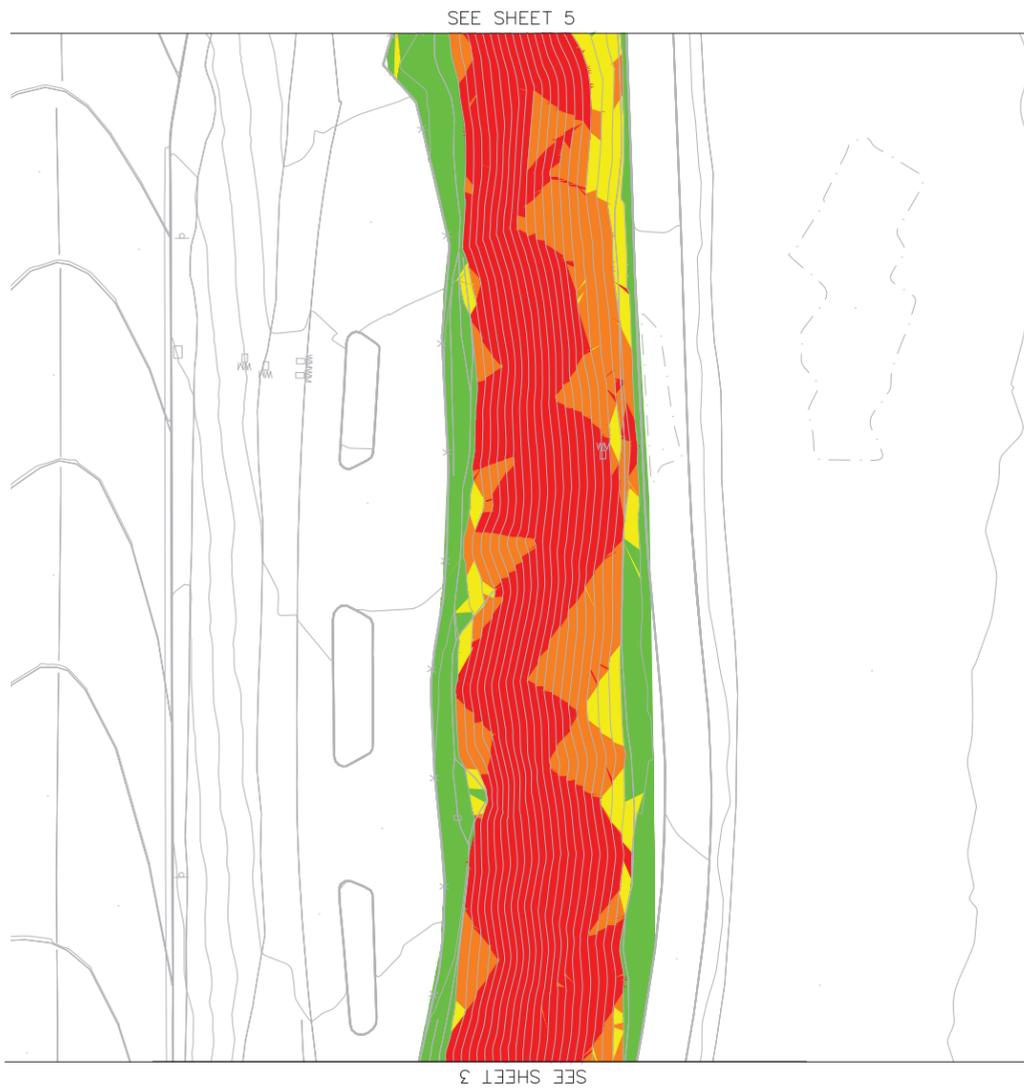


Slopes Table

Number	Minimum Slope	Maximum Slope	Color
1	0	4:1	Green
2	4:1	2.5:1	Yellow
3	2.5:1	2:1	Orange
4	GREATER THAN 2:1		Red

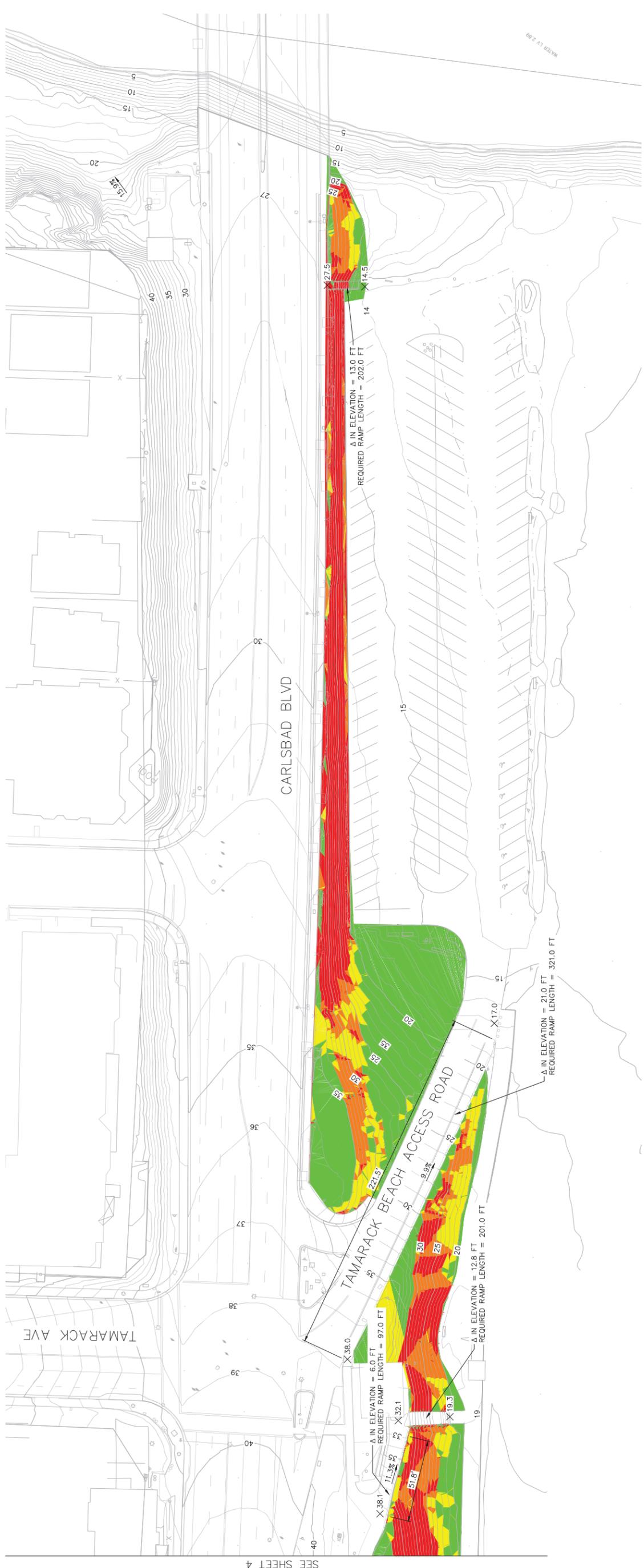


P:\Project\2018\2018_Carlsbad ADA Feasibility Study\CAD\CAD\2024_Existing Conditions Slope Analysis - Turnback to Pre-Design Plot_Janetion U_Sonther Date: 10/25/2018 15:45:22 PM



Slopes Table			
Number	Minimum Slope	Maximum Slope	Color
1	0	4:1	Green
2	4:1	2.5:1	Yellow
3	2.5:1	2:1	Orange
4	GREATER THAN 2:1		Red





Slopes Table			
Number	Minimum Slope	Maximum Slope	Color
1	0	4:1	Green
2	4:1	2.5:1	Yellow
3	2.5:1	2:1	Orange
4	GREATER THAN 2:1		Red



Appendix D Pine Avenue and Tamarack Avenue Ramp Options



July 21, 2020

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1310 Rosecrans St., Suite G, San Diego, CA 92106
 619.236.1462
 LIC. CA 21381 | NV 219 | AZ 34139
 SCHMIDTDESIGN.COM

PINE AVE RAMP

CARLSBAD BEACH AND LAGOON
 CARLSBAD, CA



SCALE: 1" = 20'-0"

Project Number: 18-106
 Date: June 3, 2019



July 21, 2020

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PINE AVE RAMP

CARLSBAD BEACH AND LAGOON
CARLSBAD, CA



SCALE: 1" = 20'-0"

Project Number: 18-106
Date: June 3, 2019



PINE AVE RAMP

CARLSBAD BEACH AND LAGOON
CARLSBAD, CA

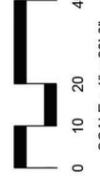




PINE AVE RAMP

CARLSBAD BEACH AND LAGOON
CARLSBAD, CA

N. PINE AVE. OPT. 4
2-18-2019





July 21, 2020

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TAMARACK - OPTION 1 (10' wide)

CARLSBAD BEACH AND LAGOON
CARLSBAD, CA



SCALE : 1" = 20'-0"



Project Number: 18-106
Date: March 6, 2019



July 21, 2020

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TAMARACK - OPTION 2 (6' wide)

CARLSBAD BEACH AND LAGOON
CARLSBAD, CA



SCALE : 1" = 20'-0"



Project Number: 18-106
Date: March 6, 2019



July 21, 2020

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TAMARACK - OPTION 2 (10' wide)

CARLSBAD BEACH AND LAGOON
CARLSBAD, CA



SCALE : 1" = 20'-0"

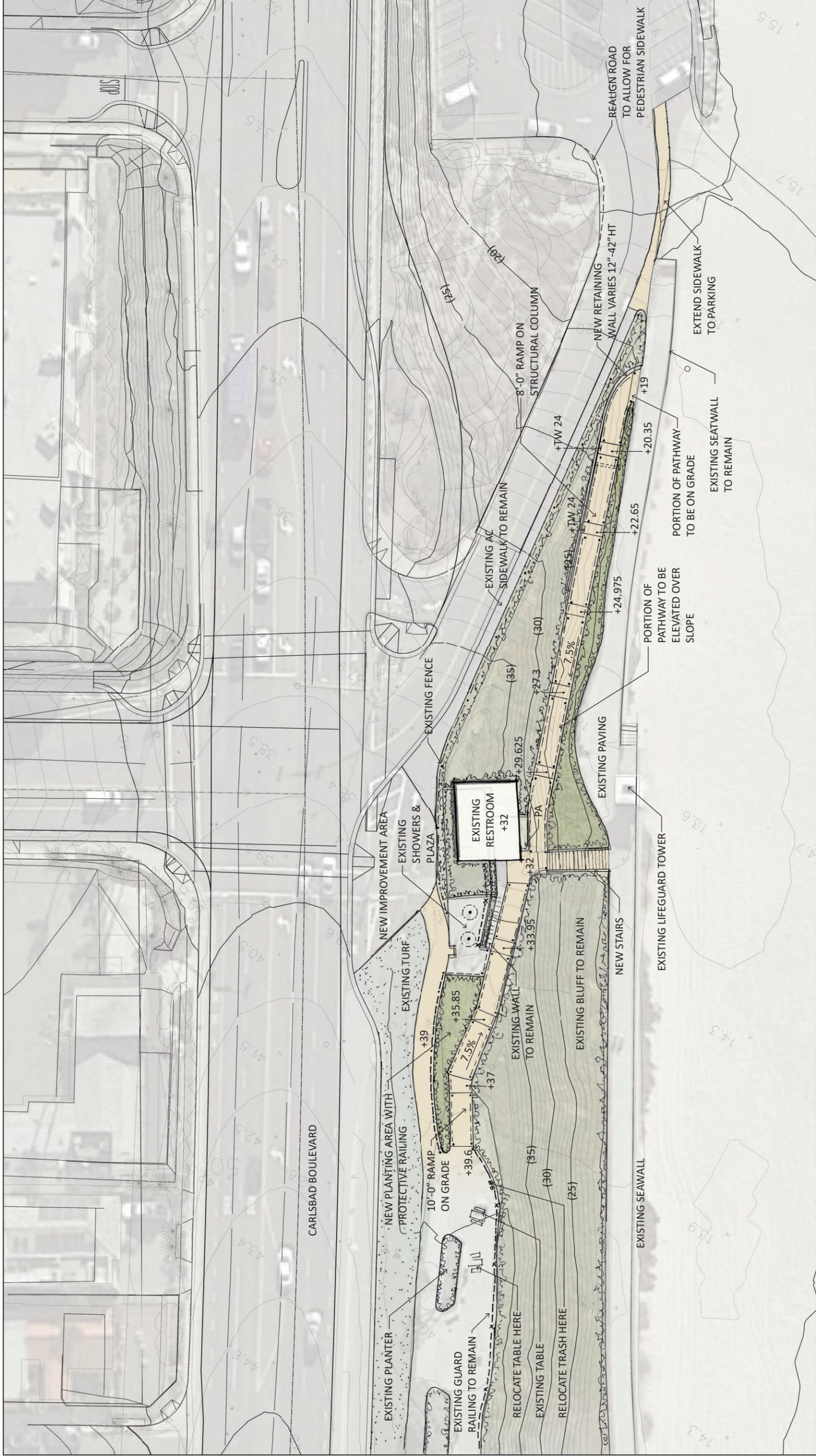


Project Number: 18-106
Date: March 6, 2019

Appendix E

Pine Avenue and Tamarack Avenue Ramps





SCALE: 1" = 20'-0"
 Project Number: 18-106
 Date: April 5, 2019

TAMARACK RAMP BEACH ACCESS

CARLSBAD BEACH AND LAGOON
 CARLSBAD, CA

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Appendix F OPCC and Structures Estimate

Carlsbad ADA Beach Access Feasibility Study
 Opinion of Probable Construction Costs

Type		ADA Beach Access from Carlsbad
Structural		
	Raised ramp (1) supported on pile extensions at each landing	
	Lump Sum	\$1,700,000.00
Civil		
	Site Prep, Clearing and Grubbing, Traffic Control, Staging, Erosion Control, Staking, Utility Adjustments, BMPs	
	Lump Sum	\$500,000.00
Landscape & Aesthetics		
	Landscape, Irrigation, Custom Railings, Etc.	
	Lump Sum	\$300,000.00
Engineering & Environmental		
	CEQA and PS&E	
	Lump Sum	\$300,000.00
	TOTAL	\$2,800,000.00

Cost includes 25% contingency
 Cost does not include escalation

1. ADA Beach Access from Carlsbad Boulevard

Structure Type: Raised ramp supported on pile extension at each landing.

Ramp Length	476	ft	Based on information provided by Chen Ryan Associates via email on 1/2/19.
Ramp Width	10	ft	As requested by City during February PDT meeting
Ramp Area=	4,760	SF	
Cost/ SF=	\$ 325		Based on previous projects with similar structure type and Caltrans Comparative Bridge Costs, scaled by the appropriate Bridge Cost index ratio. 48" CIDH Piles assumed at each landing.
Structure Cost=	\$ 1,547,000		Includes 25% Contingency

For Budget, Use \$ 1,600,000

Appendix G Environmental Constraints Table

Carlsbad ADA Beach Access Feasibility Study – Environmental Constraints Analysis Table

Alternatives Summary

The Pine Avenue Americans with Disabilities Act (ADA) Ramp project would involve constructing an ADA compliant ramp that begins at the parking lot north of the intersection of Pine Avenue and Carlsbad Boulevard. The 389-foot ramp would change direction once, extending the pathway southward within the bluffs. The ramp would be designed with an incline of 7.8 percent. One bench would be installed at the top of the ramp to provide a viewing point for the public. The ramp would be elevated as it descends the bluff, ranging at distances of approximately 2 to 9 feet above the existing bluff below. Two or three disabled parking places would be designated in the existing parking lot.

The proposed Tamarack Avenue ADA Ramp is approximately 3,500 feet south of the Pine Avenue ADA Ramp, across from the intersection of Tamarack Avenue and Carlsbad Boulevard. The ramp would begin at the top of the bluff near existing facilities (i.e., showers, plaza, and restrooms) and would extend southward, parallel to the existing access road to the California State Parks (State Parks) parking lot. Current facilities at this access point are not ADA accessible. Construction of the Tamarack Avenue ADA Ramp would create an ADA compliant pathway and would generally improve public access to the beach and Lower Sea Wall at this access point. The existing road/sidewalk south of the proposed ramp would remain the same. Additionally, the existing staircase located perpendicular to the new ramp would be reconstructed. A portion of the ramp would be elevated along the bluff (approximately 60 percent) ranging between 2 and 5 feet above the existing bluff. The ramp would be 196 feet, starting at the access to the existing restroom, and have an incline of 7.5 percent. The existing ramp down to the restrooms would also be rebuilt to be ADA compliant. The design of the Tamarack Avenue Ramp uses existing access points and disturbed areas to the extent possible in order to minimize impacts to the previously undisturbed bluff.

Issue Area	Existing Conditions/Assumptions	Pine Avenue ADA Ramp	Tamarack Avenue ADA Ramp	Constraints Summary
Aesthetics	<ul style="list-style-type: none"> The existing bluff is mostly unvegetated at the proposed Pine Avenue ADA Ramp location, while the majority of the bluff is vegetated (planted) near the Tamarack Avenue ADA Ramp. There are no designated scenic resources in the area. 	<ul style="list-style-type: none"> Construction of the ramp would begin at the existing parking lot elevation (i.e., would not rise higher than current bluff elevation). Landscaping of native vegetation would be established adjacent to ramp. Design would be less intrusive compared to other existing structures of stairs along this segment of beach, since this ramp would be built closer to grade along the slope of the bluff as compared to existing staircases along the coastline. 	<ul style="list-style-type: none"> Construction of the ramp and staircase would begin at the same level of existing facilities and would not rise higher than the current bluff elevation. Landscaping of native vegetation would be established adjacent to ramp. The existing staircase would be updated, which is built to grade along the bluff. 	<ul style="list-style-type: none"> Overall, the difference in aesthetics between both options would be minimal aside from the existing staircase which would remain built to grade along the bluff. However, the Tamarack Avenue ADA Ramp incorporates planting to complement the existing facilities area. The raised structures could be perceived as large from vantage points along the beach. However, these structures would be less intrusive compared to the existing staircases along this section of coastline and impacts would be minimal. Both options would not interfere with pedestrian/traffic views of the coastline.
Air Quality	<ul style="list-style-type: none"> It is assumed that no operational sources are associated with either option; therefore, only construction impacts are evaluated. Sensitive receptors are not located in the vicinity of the proposed projects. 	<ul style="list-style-type: none"> Potential impacts due to construction would be temporary. Standard construction equipment would be used and applicable avoidance and minimization measures would be implemented. 	<ul style="list-style-type: none"> Potential impacts due to construction would be temporary. Standard construction equipment would be used and applicable avoidance and minimization measures would be implemented. 	<ul style="list-style-type: none"> Potential air quality impacts related to construction of the proposed ramps would be similar between the two projects. Air quality emissions associated with the proposed projects include emissions from construction. However, operations associated with construction would minimize emissions through standard construction measures, storm water pollution prevention plan measures, and best management practices. It is assumed impacts would not occur to sensitive receptors as none are located in the vicinity of the proposed projects.

Carlsbad ADA Beach Access Feasibility Study – Environmental Constraints Analysis Table

Issue Area	Existing Conditions/Assumptions	Pine Avenue ADA Ramp	Tamarack Avenue ADA Ramp	Constraints Summary
<p>Biological Resources</p>	<ul style="list-style-type: none"> In the Vegetation Constraints Review Memo prepared by AECOM for the proposed projects, the North of Pine Avenue Ramp footprint evaluated along this section of bluff is identified as 20% natives, 5% nonnatives, and 75% unvegetated (AECOM 2018a). This area has a ranking of 8 out of 12 (where a rank of 12 is the lowest potential impact to native plant resources). The Tamarack Avenue Ramp footprint covers two areas identified in the memo, known as I and J. These areas encompass 80% native, 5% nonnative, 15% unvegetated and 80% native, 15% nonnative, 5% unvegetated, respectively. They rank 1 and 2 for potential habitat impacts (where a rank of 1 is the highest potential to impact native plant resources). Endangered, threatened, or proposed for listing/rare wildlife are not known to use the proposed project site since habitat is low quality, fragmented vegetation interspersed with sandy bluff too minimal to support species. Implementation of both projects would avoid the aquatic environment. This area is not located within the City of Carlsbad's Habitat Management Plan (HMP) and is not designated as a significant wildlife corridor (City of Carlsbad 2004). 	<ul style="list-style-type: none"> Equipment staging during construction would most likely occur in existing developed areas (e.g., parking lot at top of ramp). Impacts to vegetation may occur with installation of the ramp (e.g., vegetation removal). Once constructed, the shadow created by the ramp may shade vegetation and could potentially inhibit plant growth. 	<ul style="list-style-type: none"> Equipment staging during construction would most likely occur in existing developed areas. Impacts to vegetation may occur with installation of the ramp and staircase (e.g., vegetation removal). Once constructed, the shadow created by the elevated portions of the ramp may shade vegetation and could potentially inhibit plant growth. The existing staircase that would be updated as part of this design is currently at grade and is not expected to contribute to shadowing effects from vegetation. 	<ul style="list-style-type: none"> The Pine Avenue ADA Ramp would have a slightly larger impact area compared to the Tamarack Avenue ADA Ramp as the design of the ramp is primarily focused on an undisturbed segment of bluff. Design of the Tamarack Avenue ADA Ramp incorporates the existing access footprint to the extent possible. For example, the existing staircase at the Tamarack Avenue ADA Ramp is in need of repair and upgrades are proposed to the existing structure within the previously disturbed footprint. Additionally, the new ramp which would provide access to the existing restrooms and associated improvements are within previously disturbed areas. In both options, vegetation is proposed along the access ramp. The ramp footprint in the Pine Avenue ADA Ramp would impact more undisturbed bluff than the Tamarack Avenue ADA Ramp. However, while more undisturbed bluff is expected to be impacted at North of Pine Avenue, this area is of lesser habitat value than the cover type existing in the vicinity of the Tamarack Avenue ADA Ramp (AECOM 2018a). The Tamarack Avenue ADA Ramp design uses existing infrastructure at the staircase and north of the public facilities, which would minimize impacts to previously planted vegetation. Since vegetation in the Tamarack Avenue Ramp footprint has grown in successfully, this recruitment shows temporary vegetation impacts along the bluff could be successfully established post-construction. Best management practices would be implemented to ensure plant establishment along the bluff in both locations. Neither proposed project footprint functions as a terrestrial wildlife movement corridor. The movement of marine species would not be affected by the proposed projects' activities, as there would be no permanent or temporary blockage of the open water corridor. No impacts are anticipated to wildlife movement/corridors with implementation of either project. Avoidance and minimization measures would be implemented to minimize potential impacts to wildlife species, if found, such as clearance surveys for birds or other sensitive species (e.g., silvery legless lizard, a California Department of Fish and Wildlife species of special concern) as required, or vegetation removal outside of the breeding season.
<p>Cultural/Tribal Cultural Resources</p>	<ul style="list-style-type: none"> A previous records search was conducted in the vicinity of the proposed projects for the Carlsbad Boulevard and Tamarack Avenue Improvement Project in 2017 (AECOM 2018b). The records search area encompassed all of the Tamarack Avenue ADA Ramp option and a portion of the Pine 	<ul style="list-style-type: none"> The proposed project would be constructed on previously undisturbed bluffs known as the Santiago Formation (AECOM 2018b). Potential for impact could occur if a previously unknown 	<ul style="list-style-type: none"> For the most part, the proposed project would be constructed on previously disturbed ground, although excavation for footings/foundations could extend into previously undisturbed bluff 	<ul style="list-style-type: none"> Standard surveys, analysis, and mitigation measures (e.g., consulting a qualified archaeologist and a Native American representative, if applicable) would be implemented prior to and during construction because cultural sites have been identified within a 0.5-mile radius of the proposed project areas, and the coastal region of

Carlsbad ADA Beach Access Feasibility Study – Environmental Constraints Analysis Table

Issue Area	Existing Conditions/Assumptions	Pine Avenue ADA Ramp	Tamarack Avenue ADA Ramp	Constraints Summary
	<p>Avenue ADA Ramp footprint. The previous records search indicated 20 studies have been conducted, four cultural resources were previously recorded, and one cultural resource was identified during a pedestrian survey, all within a 0.5 mile vicinity of the proposed projects. After consulting with the Native American Heritage Council, it was determined that no Native American places or sites were on file in the vicinity of the proposed project sites.</p> <ul style="list-style-type: none"> One cultural resource has been identified within the Tamarack Avenue ADA Ramp option footprint, known as the Tamarack Avenue Comfort Station. A historical background study and determination of eligibility was prepared in 2016 and indicated that the Comfort Station is potentially eligible for listing on the California Register of Historical Resources and National Register of Historic Places (AECOM 2018b; Bevil 2016). Separate record and Sacred Lands File searches could be completed to confirm cultural and/or tribal cultural resources are not in the proposed footprint for the Pine Avenue ADA Ramp. Given the recent results in the Cultural Resources Phase 1 Survey Report conducted for the Carlsbad Boulevard and Tamarack Avenue Improvement Project, it is assumed cultural and/or tribal cultural resources are not in the vicinity of the Pine Avenue ADA Ramp. 	<p>resource was discovered during ground disturbing activities.</p>	<p>formations (e.g., Santiago Formation). Potential for impact could occur if a previously unknown resource was discovered during ground disturbing activities.</p>	<p>San Diego County retains a high level of cultural sensitivity to Native American tribes (AECOM 2018b).</p> <ul style="list-style-type: none"> If feasible, project design would avoid the Comfort Station at the Tamarack Avenue ADA Ramp; the proposed project would provide ADA access as well as improved general public access to this structure. The Pine Avenue ADA Ramp may present more of an opportunity to encounter unknown resources since more ground disturbance would occur on undeveloped bluff. Both options would follow standard procedures for protecting cultural resources.
Geotechnical/Geology	<ul style="list-style-type: none"> There are no active faults identified through Carlsbad, and the California Geologic Survey does not include Carlsbad on list of cities affected by the Alquist-Priolo Earthquake Fault Zones. However, Carlsbad is in a seismically active region and is subject to ground-shaking during an earthquake. Geotechnical stability analyses were performed, indicating the coastal bluffs in the project area currently have adequate factors of safety against deep instability and would not be located on an unstable geologic unit or on expansive soils (AECOM 2016a). As stated in the General Plan, the city of Carlsbad is located within the coastal portion of the Peninsular Ranges Geomorphic Province, a region characterized by northwest-trending structural blocks and intervening fault zones (City of Carlsbad 2015a). The proposed project areas consist of fill material and terrace deposits where the base of the bluffs is characterized by the Santiago Formation and relatively resistant sandstone forms the lower 	<ul style="list-style-type: none"> The proposed project would be constructed on a previously undeveloped site where soil removal would be required to install piles for the elevated ramp design. Potential impacts could occur with soil removal, which would be required to install piles for the elevated ramp design. 	<ul style="list-style-type: none"> The majority of the proposed project would be constructed on a previously developed site and generally the same footprint as the existing walkway and staircase. Potential impacts could occur with soil removal, required to install piles for the elevated ramp design. 	<ul style="list-style-type: none"> Although loss of topsoil from project implementation is not anticipated to be substantial, and erosion would most likely decrease with project implementation due to reduced use of informal trails, in order to minimize the potential impacts of soil erosion or the loss of topsoil, avoidance and minimization measures would be adopted with implementation of both options (e.g., erosion control and revegetation/planting plan, City review of site grading plan to ensure compliance with code requirements). The proposed project may decrease informal trail use, especially in the vicinity of the Pine Avenue ADA Ramp, which contributes to substantial soil erosion estimated to be approximately 1 foot per year along the northern part of the bluffs (AECOM 2016b). Both options would adhere to all applicable building and seismic codes and regulations therefore, not exposing people or structures to potential substantial adverse effects, including risk of loss, injury, or death due to severe ground shaking. Due to the nature of the site as described under existing conditions, impacts related to increased slope instability,

Carlsbad ADA Beach Access Feasibility Study – Environmental Constraints Analysis Table

Issue Area	Existing Conditions/Assumptions	Pine Avenue ADA Ramp	Tamarack Avenue ADA Ramp	Constraints Summary
Greenhouse Gas Emissions	<p>portion of the bluff (AECOM 2016a). Pleistocene terrace deposits compose the upper portion of the bluff, above an elevation of approximately 8 to 12 feet above mean sea level (AECOM 2016a).</p> <ul style="list-style-type: none"> It is assumed that no operational sources are associated with either project; therefore, only construction impacts are evaluated. The City of Carlsbad adopted a Climate Action Plan (CAP) that outlines actions that the city will undertake to achieve its proportional share of the state greenhouse gas (GHG) emissions reductions. The CAP is a plan for the reduction of GHG emissions in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15183.5. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP. 	<ul style="list-style-type: none"> Standard construction equipment would be used and standard emissions controls would be implemented. 	<ul style="list-style-type: none"> Standard construction equipment would be used and standard emissions controls would be implemented. 	<p>landslides, or other adverse seismic-induced geologic hazards are not anticipated.</p> <ul style="list-style-type: none"> GHG emissions related to construction of the project would be similar between projects. Similar construction equipment would likely be used, and vehicle trips to the construction site would be similar. Both options are expected to be in compliance with the Carlsbad CAP and would not emit at or above the CAP screening threshold of 900 metric tons of CO2 equivalent, as outlined in the CAP Consistency Checklist. Additionally, both options' incremental contribution to a cumulative GHG emissions effect would not be considered cumulatively considerable, because they would comply with requirements of the CAP.
Land Use	<ul style="list-style-type: none"> Both proposed projects are surrounded by residential development to the east and the Pacific Ocean to the west. Both options are in the coastal zone and subject to regulations per the California Coastal Act. Proposed ramp improvements are located at Carlsbad State Beach, which State Parks has jurisdiction over. 	<ul style="list-style-type: none"> The proposed project would comply with applicable land use policies and guidelines. 	<ul style="list-style-type: none"> The proposed project would comply with applicable land use policies and guidelines. 	<ul style="list-style-type: none"> Both options would conform to applicable land use policies and guidelines (e.g., Coastal Act) and appropriate resource agencies would be involved during the permitting process (e.g., California Coastal Commission, California State Parks). Proposed ramps would establish ADA compliant features along the bluff, improve general public access to the beach, and would be consistent with existing land use and recreation for the area.
Noise	<ul style="list-style-type: none"> It is assumed that no operational sources are associated with either option, therefore only construction impacts are evaluated. The closest noise sensitive receptors to the Pine Avenue ADA Ramp is a single-family residential structure located approximately 150 feet north of the site and multi-residential units approximately 150 feet east of the nearest construction boundary. The closest noise sensitive receptor to the Tamarack Ramp Avenue option is a multi-residential structure located approximately 250 feet southeast of the project limits. Given the open space and recreational nature of both proposed project sites, public using the beach could be considered a sensitive noise receptor during construction. 	<ul style="list-style-type: none"> Noise impacts associated with construction would be temporary and standard construction equipment would be used. 	<ul style="list-style-type: none"> Noise impacts associated with construction would be temporary and standard construction equipment would be used. 	<ul style="list-style-type: none"> Construction equipment and techniques used would be similar or the same for both projects. Potential impacts due to construction noise would be similar or the same for both projects. During construction of both projects, noise minimization measures would be implemented and local noise ordinance would be followed as detailed in Chapter 8.48, Noise of the City of Carlsbad Municipal Code, which sets limitations for construction hours. While the public using the beach during construction hours may experience higher noise levels anticipated with construction, other portions of the beach where temporary construction noise could be avoided will remain open for use.
Recreation	<ul style="list-style-type: none"> Existing informal trails are located along the Pine Avenue ADA Ramp footprint. 	<ul style="list-style-type: none"> Construction would temporarily interrupt access via informal trails. During construction, multiple access points along the coastline 	<ul style="list-style-type: none"> Construction would temporarily interrupt recreation and access to the beach and facilities at this location. Additionally, multiple 	<ul style="list-style-type: none"> Localized recreation and public access would be temporarily interrupted during construction of both projects; however, impacts between the two projects would be similar. Portions of parking lots may be

Carlsbad ADA Beach Access Feasibility Study – Environmental Constraints Analysis Table

Issue Area	Existing Conditions/Assumptions	Pine Avenue ADA Ramp	Tamarack Avenue ADA Ramp	Constraints Summary
	<ul style="list-style-type: none"> There are multiple existing access points along this portion of coastline, none of which are currently ADA compliant. 	<p>could continue to be used to access the beach.</p>	<p>access points along the coastline could continue to be used in order to access the beach instead of the current access point at Tamarack Avenue.</p>	<p>temporarily closed in order to stage equipment. Numerous existing access points between the two proposed project sites would remain available for use during construction, including the ramp at Pine Avenue and four staircases. These existing access areas would remain open during construction and would continue to provide adequate access to the beach during construction. If feasible, proposed project work would be conducted outside of the busy summer season.</p> <ul style="list-style-type: none"> Post-construction, recreation and access would be enhanced via the proposed ADA compliant ramps.
Sea Level Rise/Storm Damage Vulnerability	<ul style="list-style-type: none"> Both structures are subject to influence from sea level rise but would be constructed along the existing bluff above the elevation of the existing walkway, which is protected by a sea wall. 	<ul style="list-style-type: none"> To the extent practicable, structures have been designed to provide resilience to sea level rise scenarios. 	<ul style="list-style-type: none"> To the extent practicable, structures have been designed to provide resilience to sea level rise scenarios. 	<ul style="list-style-type: none"> Structures are designed to be above the elevation of an existing boardwalk and behind a protective sea wall, which protects from potential storm damage and sea level rise influence.
Transportation/Traffic	<ul style="list-style-type: none"> It is assumed that no operational sources are associated with either option, therefore only construction impacts are evaluated. Increased traffic to the site due to improved access is assumed to be minimal and most likely by existing users or residents using this improved route to access the beach, because the proposed project would create an ADA compliant ramp and safer/more direct pedestrian access. 	<ul style="list-style-type: none"> Traffic may be temporarily interrupted during construction. 	<ul style="list-style-type: none"> Traffic may be temporarily interrupted during construction. 	<ul style="list-style-type: none"> Applicable measures would be implemented during construction to avoid and/or minimize temporary traffic impacts (e.g., timing of project work, traffic control plan).

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Trail Connectivity to Tamarack State Beach Feasibility Study

Final Report

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Appendices

Appendix A	Final Wave Runup Study
Appendix B	Cost Estimate and Structures Estimate
Appendix C	Environmental Constraints Table

1.0 Introduction

1.1 Overview

The City of Carlsbad Community Services – Parks & Recreation Department commissioned a feasibility study for a connection between the North Shore Agua Hedionda Lagoon Trail and Tamarack State Beach via pedestrian walkway, tunnel, or at grade crossing.

Purpose

The purpose of the project is to provide access for all pedestrians, regardless of ability, to one of the area's premier beaches. The importance of this project cannot be understated as it will allow the community to enjoy a beautiful natural-resource that is unique to the region. The proposed project promotes the spirit and vision of both the California Coastal Act and the Americans with Disabilities Act.

1.2 Project Background

Trail Connectivity to Tamarack State Beach, Project No. 40631

The Trail Connectivity to Tamarack State Beach project is located at the Cold-Water Inlet Bridge (bridge) on Carlsbad Boulevard, south of Tamarack Avenue. The bridge is one of two waterway openings that connect the Agua Hedionda Lagoon and the Pacific Ocean. The North Shore Agua Hedionda Lagoon Trail runs along the north side of the lagoon. The trail's western terminus is at the north side of the bridge, where a steep dirt pathway leads up to the east side of Carlsbad Boulevard. Tamarack State Beach lies west of Carlsbad Boulevard and north of the bridge. Currently, there is no connection between the North Shore Trail and Tamarack State Beach. In the existing condition, people using the trail who want to access the beach must climb the steep dirt trail at the terminus of the North Shore Trail, walk uphill (approximately 700 feet) along the east side of Carlsbad Boulevard to Tamarack Avenue, cross Tamarack Avenue, cross Carlsbad Boulevard, and walk down a steep asphalt pathway to the Tamarack State Beach. This circuitous route makes for a difficult connection between these two important natural resources.

The project's main objective is to evaluate the feasibility of constructing a tunnel or undercrossing to connect the North Shore Lagoon Trail to Tamarack State Beach. A number of alternatives were considered and evaluated to determine engineering feasibility. The project goal is to develop a preferred alternative for the connection between the North Shore Lagoon Trail and Tamarack State Beach.

1.3 Project Study Area

The project study area is at and adjacent to the north side of the existing bridge.

Figure 1 displays the project study area.

Figure 1 Project Study Area



2.0 Existing Conditions

Carlsbad Boulevard is positioned on a coastal bluff and is elevated from the coastal parking lot. Approximate elevations of key features in the study area (relative to NAVD88, ft) are as follows:

- Tamarack State Beach Parking Lot: +12 to +15 (west to east)
- Carlsbad Boulevard (in vicinity of stairs at the north side of the bridge): +27
- Cold Water bridge soffit: +17
- Tamarack back beach: +12

Jurisdictionally, the City owns and operates the roadway and California State Parks owns and manages the parking lot and beach at Tamarack State Beach. The parking lot is currently subject to seasonal flooding and rip-rap has been placed on the seaward edge to help protect the parking lot during these events. Wave overtopping of the parking lot was evident during a site visit on November 1, 2018 as over-washed sand and marine debris were present on the western side of the lot. A vertical seawall begins immediately north of the parking lot, which spans about 3,500 feet to the north where it terminates in the vicinity of Pine Avenue.

The width of Tamarack State Beach is controlled by regional and local beach nourishment activities. Regionally, beach widths have been impacted by two large scale beach nourishment efforts conducted by SANDAG in 2001 and 2012. These projects are known as the Regional Beach Sand Project I and II, respectively. These projects placed about 2.1 million and 1.5 million cubic yards of sand on San Diego beaches. Placement of sand at two beaches upcoast from Tamarack State Beach (i.e. North Carlsbad and Oceanside placement sites) have impacted beach width and shape at Tamarack State Beach over time. These upcoast placement sites received a total of 646,000 cy and 512,000 cy of sand in 2001 and 2012, respectively from these regional projects.

Locally, Tamarack beach is directly affected by the placement of sand from Agua Hedionda Lagoon maintenance dredging activities. The program bypasses an average of 135,000 cy (during the period of 2001 to 2015) of sand from the flood shoal of the lagoon biennially. Dredged sand is placed at three beach sites each year as follows: 1) north of the cold-water jetties within the study area, 2) south of the cold-water jetties and 3) south of the warm water jetties. The direct placement of sand on this beach impacts width and shape.

2.1 Carlsbad Blvd Bridge

The existing Carlsbad Blvd Bridge is a simple span cast in-place prestressed (CIP/PS) concrete box girder. It is approximately 201-foot long, 82 feet wide. The superstructure consists of 8-foot deep twin box girders. Carlsbad Blvd within the project limits is a 4-lane road, two lanes in each direction, separated by a raised median within the bridge limits. The raised median ends at the bridge northern approach slab. Class II bike lanes and sidewalk separated by concrete barriers are provided on both sides of the road. The barrier is provided only within the limits of the bridge, and a guard rail is provided along the western sidewalk beyond the northern bridge approach slab.

2.2 Clearance under Carlsbad Blvd Bridge

Vertical clearance under the bridge was a critical consideration, based on water surface elevations (WSEs) in the lagoon. Based on the City of Carlsbad (City) Sea Level Rise Vulnerability Assessment report dated December 2017, and the existing Carlsbad Boulevard bridge elevation, the following vertical clearance is available under the existing bridge:

TABLE 1 – CLEARANCE UNDER CARLSBAD BLVD BRIDGE

Condition	WS Elevation (ft) @ Lagoon	Clearance Under Bridge (ft)	WS Elevation (ft) @ Beach
Current Mean High-Water Line	4.44	12.18	-
Year 2050 Mean High-Water Line (ft)	6.04	10.58	-
Year 2100 Mean High-Water Line (ft)	11.04	5.58	-
Current Water Surface Elevation (ft), (100-Year Storm)	6.90	9.72	11
Year 2050 Water Surface Elevation (ft), (100-Year Storm)	8.50	8.12	13
Year 2100 Water Surface Elevation (ft), (100-Year Storm)	13.50	3.12	18

Source: Chen Ryan Associates, June 2019.

As seen in the table above, clearance under the Carlsbad Blvd bridge is anticipated to decrease from 12.18 feet under Current Mean High-Water Line conditions to 5.58 feet under Year 2100 Mean High-Water Line conditions.

2.3 Wave run-up study

The City of Carlsbad Sea Level Rise Vulnerability utilized the CoSMoS model which was developed as a regional model and for planning purposes, therefore, site specific information was not accurate. Therefore, a wave run-up study that focused on the project study area was developed.

The study evaluated existing and potential future coastal hazards (i.e. flooding and inundation) that may impact the proposed trail connection. The study identified wave runup elevations to be approximately 2 feet higher than WSE for the same return period. See **Appendix A** for wave run-up study.

3.0 Feasibility Study Approach

This chapter describes the various analyses performed as part of the trail connectivity feasibility evaluation.

3.1 Trail Connectivity to Tamarack State Beach

Multiple alternatives were considered to provide a trail connection in the vicinity of the Cold-Water Inlet. The crossing can either be underneath the existing bridge or under the existing road, north of the bridge. An overcrossing alternative was not considered due to significant visual impacts. The vertical clearance underneath the bridge was a critical consideration, considering water surface elevations (WSEs) in the lagoon.

The following alternatives were considered for a trail connection at the north side of the existing bridge:

1. Pedestrian Bridge (Beneath Exist Carlsbad Blvd Bridge)

A bridge supported on piles spanning beneath the existing Carlsbad Blvd Bridge, in front of the northern abutment was considered. Based on Table 1, the maximum available clearance under the bridge for the existing Mean High-Water condition is 12.18 ft. Considering the following requirements, a pedestrian bridge requires a minimum of 12.5 ft vertical clearance. Therefore, this alternative is not feasible.

- 8'-0" Overhead Clearance
- 2'-6" Structure Depth
- 2'-0" Minimum Vertical Freeboard

2. Open Walkway

Walkway on a retaining wall beneath Carlsbad Blvd Bridge is a viable, cost effective option for this alternative. However, this alternative is not preferable due to the following:

- Hydraulics Impact
 - Scour
 - Potential Back Water Effects
- Deep Foundations Required
- Closed During a Storm

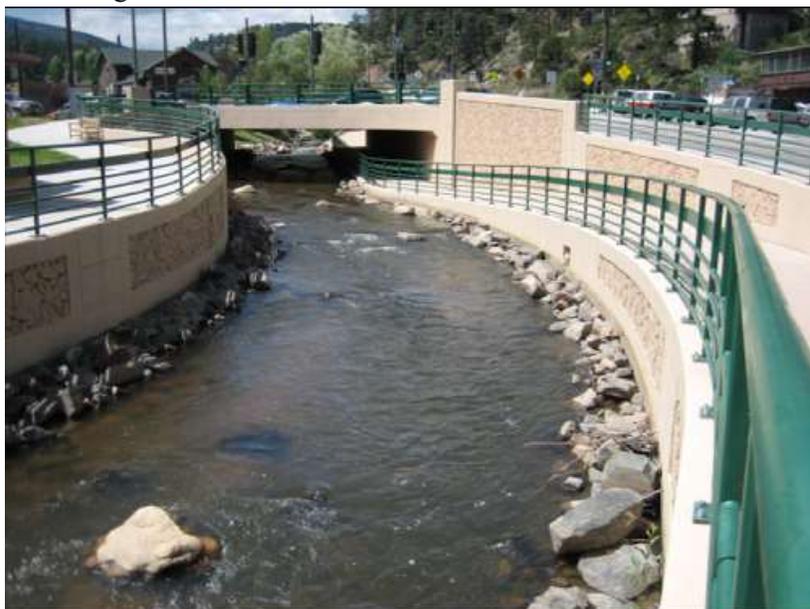


Figure 2 Open Walkway

3. Walled Walkway

This alternative is similar to the Open Walkway, but it includes walls to work as barriers preventing water from entering the walkway. This alternative is not preferable due to the following:

- Higher Hydraulics Impact than Open Walkway
 - Scour
 - Potential Back Water Effects
- Additional foundations required for the wall
- Closed During a Storm

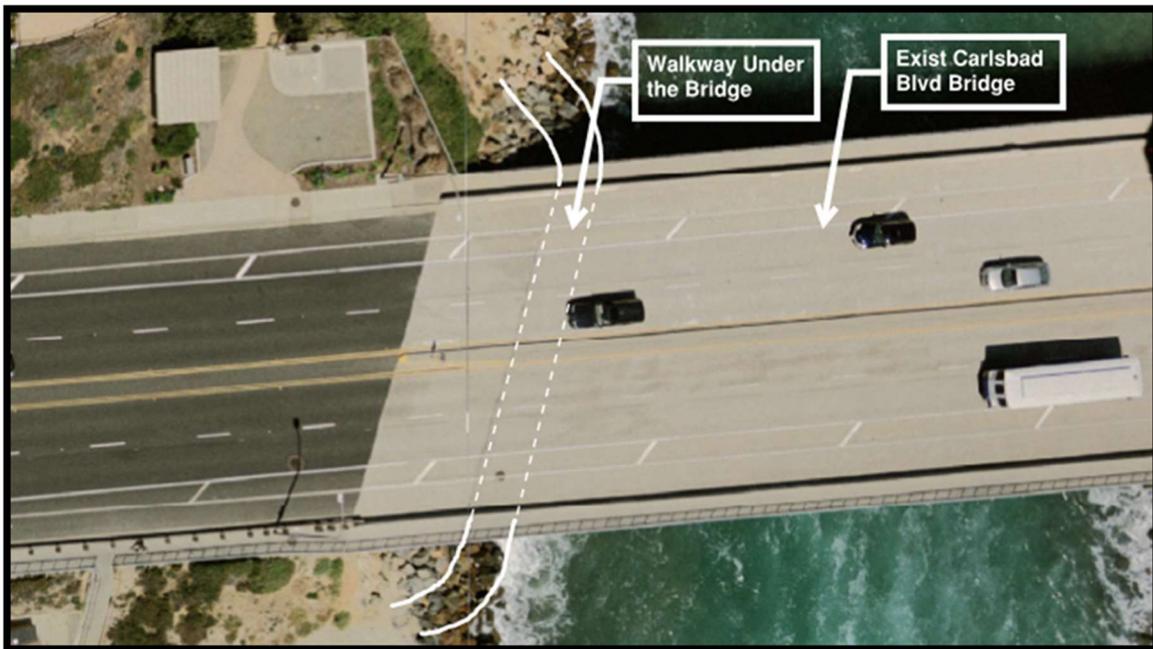


Figure 3 ADA Crossing Under Exist Bridge

4. Tunnel

The design team also considered a standard tunnel underneath Carlsbad Blvd for a crossing at this location. A tunnel typically requires a cover that is twice its diameter. To provide 9 ft overhead clearance, which is the minimum clearance requested by the City for a closed crossing, the tunnel will need to be about 30 ft below ground. Considering WSE discussed previously, a tunnel is not feasible for this location.

5. Cut and Cover

Similar to the tunnel, this alternative would also be underneath Carlsbad Blvd however the trench excavated is much shallower as the earth cover can be 12 inches minimum. Precast reinforced concrete (PC/RC) box culvert is proposed for this alternative. The design team found this alternative to be the most feasible option for a crossing at this location considering design limitations discussed previously.

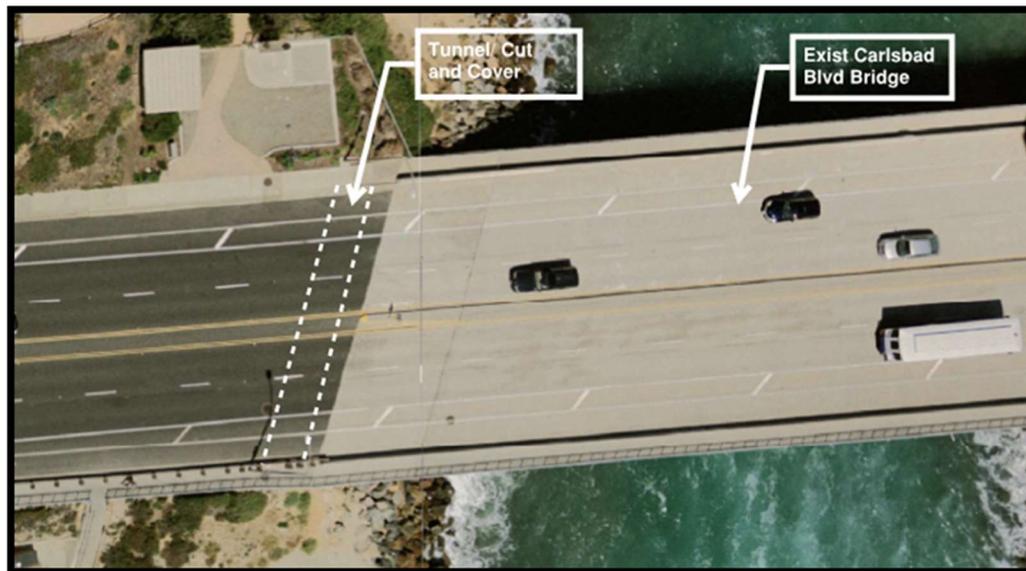


Figure 4 ADA Crossing Under Exist Road

The results of the Wave Run-up study indicate higher water elevations as noted previously, which reduces the available vertical clearance under the existing Carlsbad Blvd Bridge. Therefore, alternatives 2 and 3 were eliminated. As a result, the cut and cover alternative was selected as the preferred structure type for this location.

4.0 Feasibility Study Results

4.1 Proposed Structure

The recommended alternative is a single cell precast reinforced concrete (PC/RC) box culvert crossing under Carlsbad Blvd, north of the existing Carlsbad Blvd Bridge. The proposed structure would be built using accelerated bridge construction (ABC) methods to minimize disruption to traffic and adjacent residents.

The completed structure will be 92.5 feet long and 12 feet wide and 9 feet high, following the same skew of the existing Carlsbad Blvd Bridge. Based on Caltrans Standard Plans, the proposed PC/ RC Box Culvert will have 12-inch slabs and walls. The design assumes 2 feet of cover on top of the culvert. Two cast in place (CIP) wing walls will be constructed on both ends of the box culvert. On the west end of the culvert, at Tamarack State Beach, a 4 feet berm is proposed to keep water out of the structure. Additionally, a gate can be added to both ends of the culvert, so it can be closed if flooded. The gate could also serve as a barrier to prevent sand and dirt from entering the crossing. The box culvert is sloped at 1% from west to east to drain into a proposed 18-inch storm drain on the eastern end of the crossing.

ADA Ramp at Trail

In order to provide complete ADA access from the eastern side of Carlsbad Blvd to Tamarack State Beach on the west, an ADA ramp connecting the eastern sidewalk of Carlsbad Blvd to Agua Hedionda Trail would be provided. The ramp would be about 255-foot long and 8-foot wide. Cast-in-place retaining walls are proposed to frame the ramp with handrails on both sides of the ramp.

ADA Connection to Lower Sea Wall

On the western side of the box culvert crossing under Carlsbad Blvd, an ADA compliant concrete walkway will connect to the existing parking lot. The parking lot will be reconfigured to provide a 4-foot wide ADA path of travel along the western edge of the existing parking lot. The parking lot will be re-striped to accommodate the proposed ADA path of travel, while maintaining the existing number of parking stalls and minimum parking lot drive aisle widths.

The ADA path of travel will connect to an accessible 5-foot wide concrete ramp. This ramp will connect to the modified Lower Sea Wall to provide a fully ADA compliant connection from the box culvert under Carlsbad Boulevard to the Lower Sea Wall and proposed ADA Beach Access ramp at Tamarack Avenue. The proposed modification to the Lower Sea Wall includes the removal of approximately 5-feet of the existing “return wall” in order to create a connection location for the proposed ramp.

Constructability

A specific construction staging and traffic control plan will be developed upon final design. Preliminary information indicates the road will need to be closed during construction to excavate a trench and then it can be covered with a temporary trench plate. Road closure will also be required to relocate existing utilities that are in conflict with the proposed structure. These activities can be accomplished as night or weekend work and it can be staged to minimize traffic impact.

Geotechnical

Based on preliminary review of existing conditions and the Geotechnical Investigation Report for the Tamarack Coastal Improvements Project prepared by AECOM on March 2018, 2 feet of over-excavation and recompaction may be required within the limits of the proposed box culvert. Since the proposed structure is entirely in the bluffs, putting it in formational soil (Terrace Deposits), liquefaction would not be an issue. Therefore, no ground improvements beyond the over- excavation and recompaction are warranted.

Utilities

There are multiple existing utilities in the project area that will be affected by the proposed crossing. Existing 4-inch HP Gas and electrical conduits for street lights can be relocated to be on top of the box culvert. A portion of a 12-inch ACP Water Line will be impacted by the proposed crossing, so it will need to be relocated underneath the proposed box culvert. Additionally, an existing 18-inch RCP Storm Drain runs along the proposed structure, so it will need to be relocated and reconnected to an existing headwall on the beach side. All this work will need to be coordinated and performed during road closures.

Aesthetics

For the box culvert crossing at Cold Water, it is proposed to extend the raised median on Carlsbad Blvd north, so it crosses the box culvert, in order to provide a glass light well through the median. Lighting would also be provided in the crossing. Additionally, new vegetation is proposed on the bluffs at Agua Hedionda Trail to replace existing vegetation that would be impacted by the proposed crossing and ramp. **Figure 5** and **Figure 6** displays the conceptual design renderings for the proposed cut-cover tunnel.

4.2 Opinion of Probable Construction Costs

The project team developed a planning level opinion of probable construction costs for the trail connection. The estimated cost, including design and CEQA clearance, was **\$3.0M for the trail connection**. A breakdown of costs can be found in **Appendix B**.

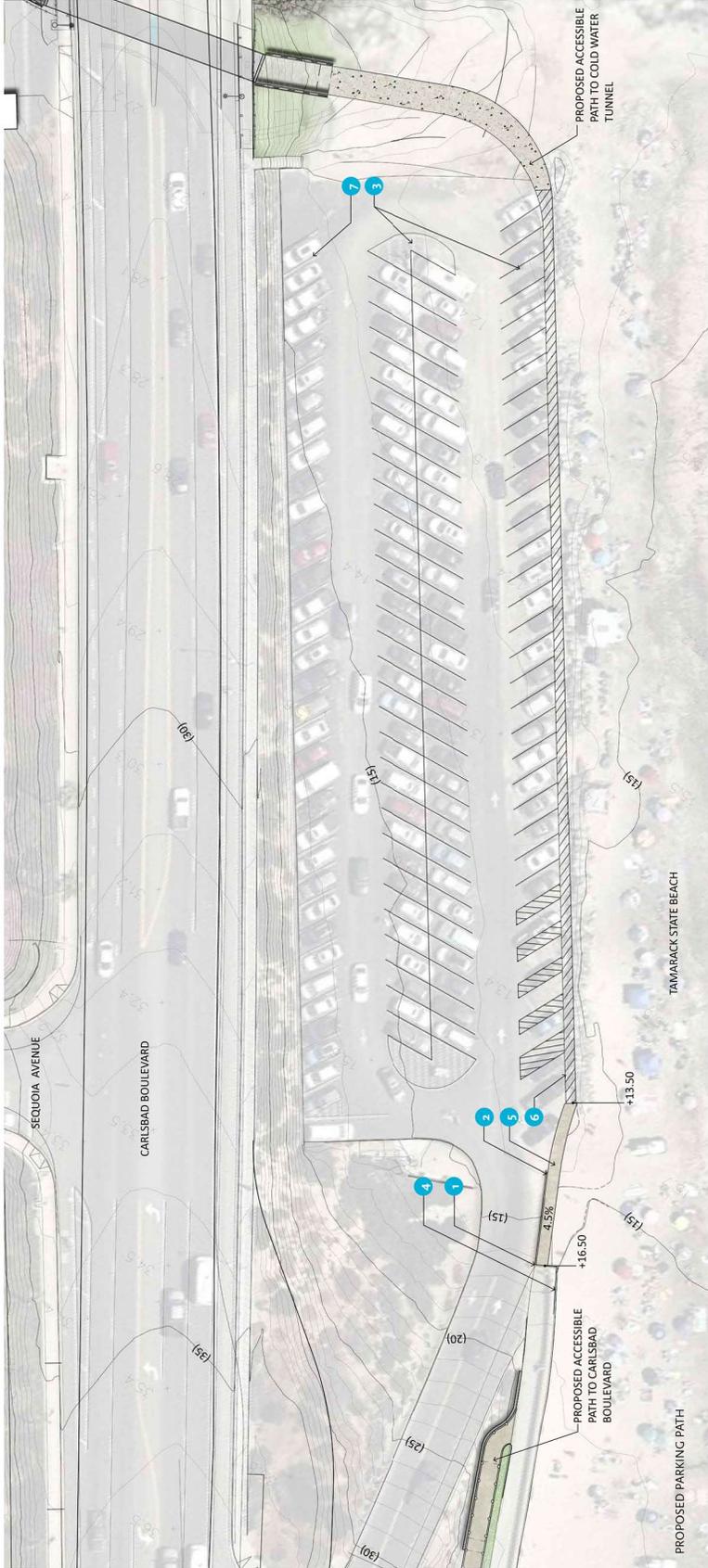
4.3 CEQA Clearance

The project team completed an evaluation of environmental constraints to help transition into the next phase of the project. The biggest constraint are the existing biological resources that would be impacted by construction. However, these impacts can be mitigated. The Environmental Constraints Analysis Table can be found in **Appendix C**.

Figure 6 Cold Water Cut-Cover Tunnel 3-D Simulation



Figure 6.A Tamarack State Beach Parking Access



KEY

- 1 DEMO 5'-0" OF EXISTING SEA WALL
- 2 EXISTING CURB TO REMAIN
- 3 RESTRIPE EXISTING PARKING STALLS
- 4 EXISTING SEA WALL
- 5 PROPOSED 5'-0" CONCRETE WALKWAY
- 6 PROPOSED ACCESSIBLE STRIPING
- 7 EXISTING PARKING STRIPING TO REMAIN

5.0 Conclusion

As described in this report, the City of Carlsbad Community Services – Parks & Recreation Department commissioned a feasibility study for a connection between the North Shore Agua Hedionda Lagoon Trail and Tamarack State Beach via pedestrian walkway, tunnel, or at grade crossing. After an engineering evaluation and analysis of different alternatives that took into consideration factors such as terrain, sea level rise, and constructability, the cut-cover tunnel was found to be the most feasible option to connect the North Shore Agua Hedionda Lagoon Trail and Tamarack State Beach.

Appendix A

Final Wave Runup Study



Wave Run-up Study

City of Carlsbad ADA Beach and Lagoon Access Feasibility Study

Prepared for Chen-Ryan and Associates
3900 Fifth Avenue, Suite 310
San Diego, CA 92103

GHD | 9370 Sky Park Ct, Suite 140, San Diego, CA 92123, USA
11186682 | December 14, 2018 (revised January 30, 2019)



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1. Introduction

Chen Ryan Associates, under contract to the City of Carlsbad (Carlsbad), is evaluating the feasibility of connecting the North Shore Agua Hedionda Trail to Tamarack State Beach through an ADA accessible pathway. Alternatives being considered to provide this connection are described below:

1. At-grade connecting walkway – An at-grade crosswalk on Carlsbad Boulevard with ramps and/or stairs to the beach. This concept has not been developed at the time of this study.
2. Pedestrian Bridge – An under-bridge pedestrian bridge / walkway under the Cold Water Inlet Bridge, adjacent to the northern bridge abutment, as shown in Figure 1. A 9' vertical clearance is desired for the walkway.
3. Cut and Cover walkway – A cut and cover walkway under Carlsbad Boulevard, as shown in Figure 2. A 9' vertical clearance is desired for the walkway and a three-foot cover thickness is assumed.

Aesthetics, functionality, environmental impact and coastal vulnerability are all factors being considered in the evaluation of these potential options. GHD was contracted by Chen Ryan Associates to evaluate existing and potential future coastal hazards (i.e. flooding and inundation) that may impact the alternatives being considered in the feasibility study.

The approach of this analysis was developed using the Sea Level Rise Policy Guidance developed by the California Coastal Commission (CCC) (August 2015) as updated by the recommendations of the Adopted Science Update in November 2018 (California Coastal Commission, 2018).

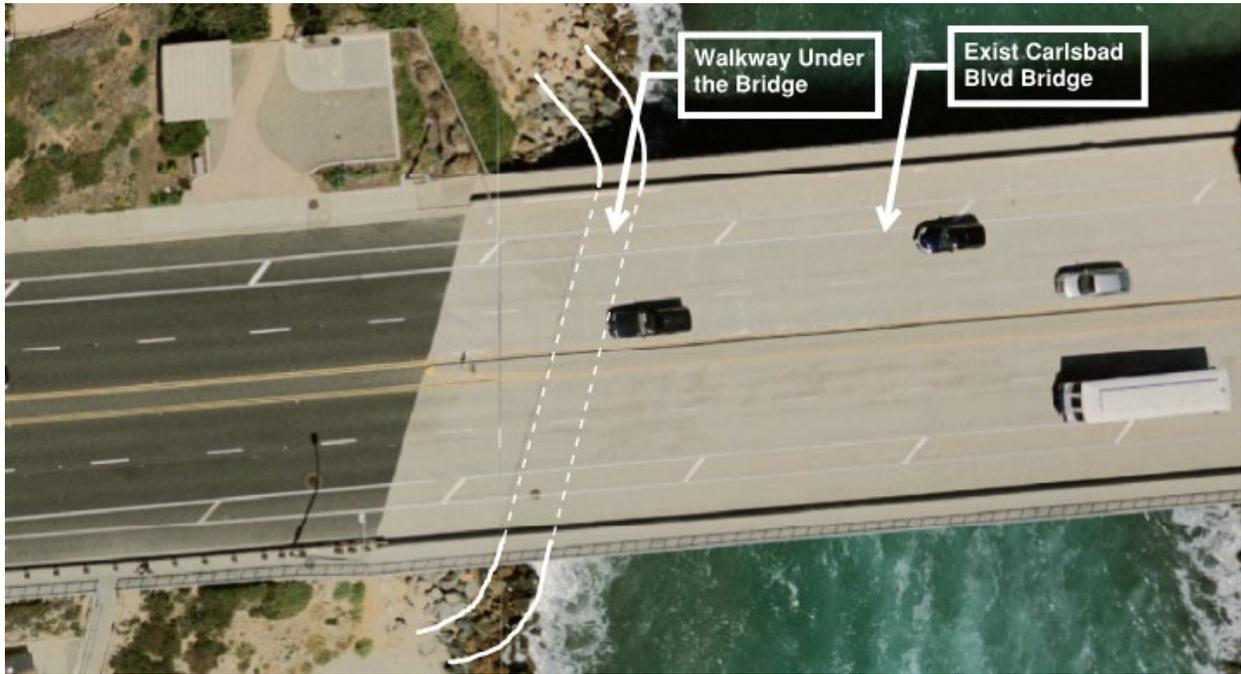


Figure 1. Pedestrian Bridge Concept (source: T.Y. Lin International)

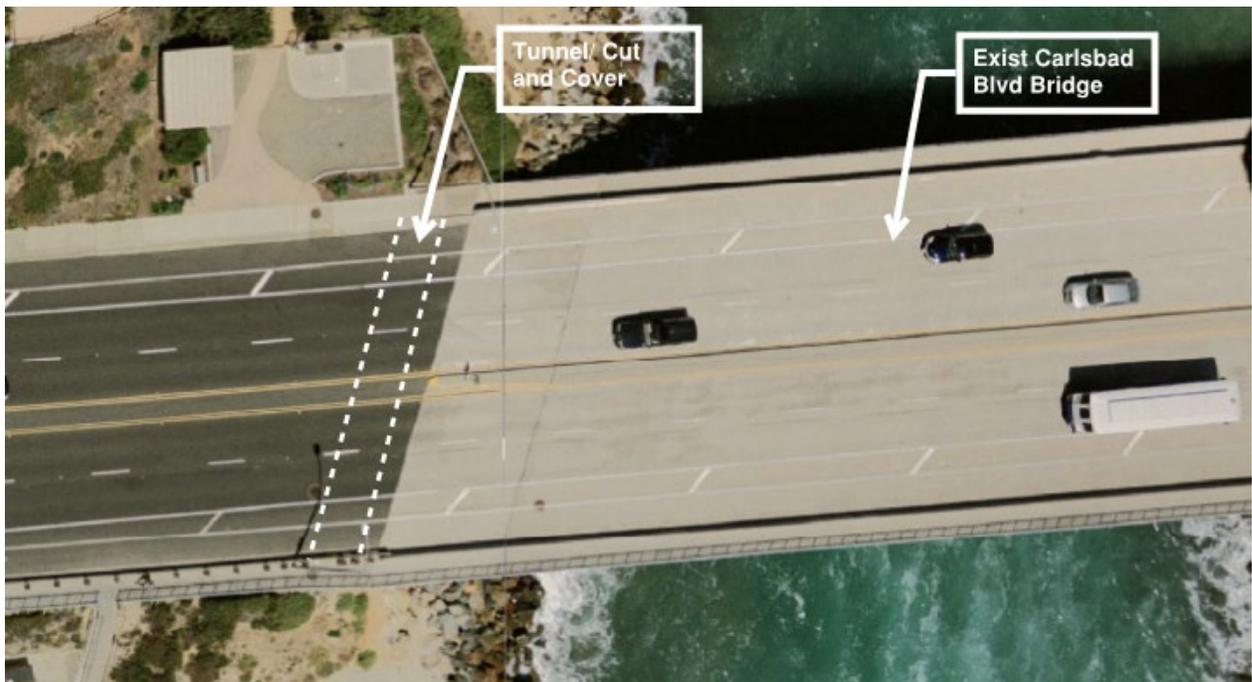


Figure 2. Cut and Cover Concept (source: T.Y. Lin International)



2. Scope of Work

GHD was retained by Chen Ryan Associated to prepare a Wave Run-up Study to support the Carlsbad ADA Beach Access and Lagoon Feasibility Study Project for the City of Carlsbad. The scope of work for this study is summarized below:

1. **Review Existing Information** - Available information for the study area was reviewed to form an overview of the Project site from a coastal perspective. Data reviewed included the: City of Carlsbad Sea Level Rise Vulnerability Study, Coastal Storm Observing System data (CoSMoS 3.0), beach profile data (from SANDAG's regional beach monitoring program) and FEMA data (effective and preliminary maps).
2. **Prepare Wave Runup Study and Site-specific Vulnerability Assessment** – The site's vulnerability to coastal hazards (flooding and inundation) was analyzed in comparison to the alternatives being considered with a focus on the ability of the proposed alternatives to withstand extreme storm events in combination with tides and future predictions of sea level rise. Determined existing and future wave runup elevations during frequently occurring and extreme events (assumed 10-year and 100-year return period wave events within a 50-year time horizon, respectively) to aide in the alternative evaluation. Once the limits of the coastal hazards were established, vulnerabilities of the proposed alternatives were evaluated. The analysis quantitatively described the frequency of coastal hazard exposure and the specific alternative's sensitivity to these hazards.
3. **Project Meetings and Management** – GHD will attend two project team meetings; assumed at the Project kick-off and Draft Wave Runup report phases.



3. Existing Conditions & Coastal Setting

The study area spans the shoreline from Tamarack Avenue to the northern Cold Water jetty. The site consists of a coastal parking lot (i.e. Tamarack State Beach), which is fronted by a sandy beach and backed by Carlsbad Boulevard (Figure 3). Carlsbad Boulevard is positioned on a coastal bluff and is elevated from the coastal parking lot. Approximate elevations of key features in the study area (relative to NAVD88, ft) are as follows:

- Tamarack State Beach Parking Lot: +12 to +15 (west to east)
- Carlsbad Boulevard (in vicinity of stairs): +26
- Cold Water bridge soffit: +17
- Tamarack back beach: +12

Jurisdictionally, the City owns and operates the roadway and California State Parks owns and manages the parking lot and beach at Tamarack. The parking lot is currently subject to frequent overtopping and State Parks has placed rip-rap on the seaward edge to help protect the lot during these events. Wave overtopping of the parking lot was evident during a site visit on November 1, 2018 as overwashed sand and marine debris were present on the western side of the lot (Photos 1 through 4). A vertical seawall begins immediately north of the parking lot, which spans about 3,500 feet to the north where it terminates in the vicinity of Pine Avenue (Figure 4).

The sandy beach at Tamarack is managed in that its width is controlled by regional and local beach nourishment activities. Regionally, beach widths have been impacted by two large scale beach nourishment efforts conducted by SANDAG in 2001 and 2012. These projects are known as the Regional Beach Sand Project I and II, respectively. These projects placed about 2.1 million and 1.5 million cubic yards of sand on San Diego beaches. Placement of sand at two beaches upcoast from Tamarack State Beach (i.e. North Carlsbad and Oceanside placement sites) have impacted beach width and shape at this beach over time. These upcoast placement sites received a total of 646,000 cy and 512,000 cy of sand in 2001 and 2012, respectively from these regional projects (CFC 2017).

Locally, the Tamarack beach is directly affected by the placement of sand from Agua Hedionda Lagoon maintenance dredging activities. The program bypasses an average of 135,000 cy (during the period of 2001 to 2015) of sand from the flood shoal of the lagoon annually (CFC 2017). Dredged sand is placed at three beach sites each year as follows: 1) north of the cold water jetties within the study area, 2) south of the cold water jetties and 3) south of the warm water jetties. The direct placement of sand on this beach impacts width and shape.



Photo 1. Tamarack State Beach Parking Lot.



Photo 2. Cold Water Jetty and bridge northern abutment.



Photo 3. Rip rap shoreline protection fronting parking lot. Evidence of recent wave runup into the parking lot.



Photo 4. Rip rap shoreline protection fronting parking lot.



Figure 3. Project Location Map



Figure 4. Existing Coastal Structures and Topography (2011 SCC Lidar ft, NAVD88)



3.1 FEMA Mapping

The Federal Emergency Management Administration (FEMA) maps national coastal hazards using water level and wave data in order to derive their Flood Insurance Rate Maps (FIRM). Although these maps do not include sea level rise, they do include wave induced water levels including runoff. These products were reviewed for the Project Site to understand FEMA mapped coastal hazards in the study area.

FEMA is in the process of updating the FIRM for southern California; thus, the effective and preliminary maps were reviewed. Differences between the effective and preliminary FIRM products suggest that the base flood elevation (BFE) in the study area will increase from 11 feet (NAVD88) to 20 ft (NAVD88) and will change zone designations from AE and VE. More details on the findings of these map reviews are below.

3.1.1 Effective Flood Insurance Rate Map

The FEMA Effective FIRM for the Project site (Panel 06073C0763G revised 5/16/2012) was reviewed. According to the Effective FIRM, the Project site is located in the vicinity of FEMA zones: Zone VE (EL 11) and Zone AE (EL 11), as shown in Figure 5. These zones are defined below:

Zone VE (EL 11) – Coastal High Hazard Area with a base flood elevation (BFE) of 11 feet (NAVD88). The zone includes anticipated wave heights at or exceeding 3 feet; however, allows construction when the structure is designed to accommodate anticipated wave forces and when the minimum building foundations are above the BFE.

Zone AE (EL 11) – Areas subject to inundation by the 1-percent-annual-chance (or 100-year) flood event determined by hydraulic methods. The zone has a BFE of 11 feet (NAVD88).

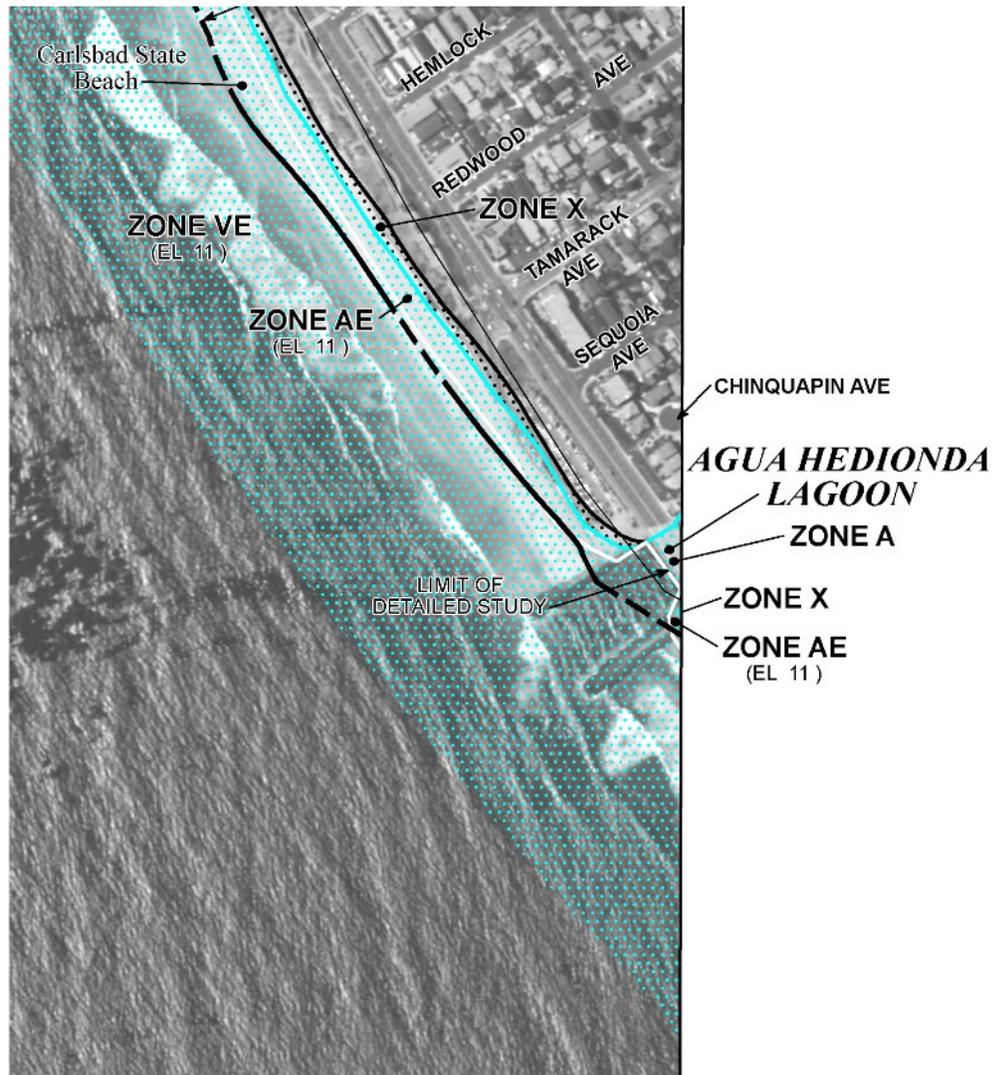


Figure 5. FEMA NFIP Effective Flood Map for the Study Area
(Modified from: FEMA.gov)

3.1.2 Preliminary Flood Insurance Rate Map:

The FEMA Preliminary FIRM for the Project site (Panel 06073C0763H issued 2/3/2017) was reviewed. According to the Preliminary FIRM, the Project site is located in Zone VE (EL 20) and Zone AE (EL 8), as shown in Figure 6. These zones are defined below:

Zone VE (EL 20) – Coastal High Hazard Area with a base flood elevation (BFE) of 20 feet (NAVD88). The zone includes anticipated wave heights at or exceeding 3 feet; however, allows construction when the structure is designed to accommodate anticipated wave forces and when the minimum building foundations are above the BFE.

Zone AE (EL 8) – Areas subject to inundation by the 1-percent-annual-chance (or 100-year) flood event determined by detailed methods. The zone has a BFE of 8 feet (NAVD88).

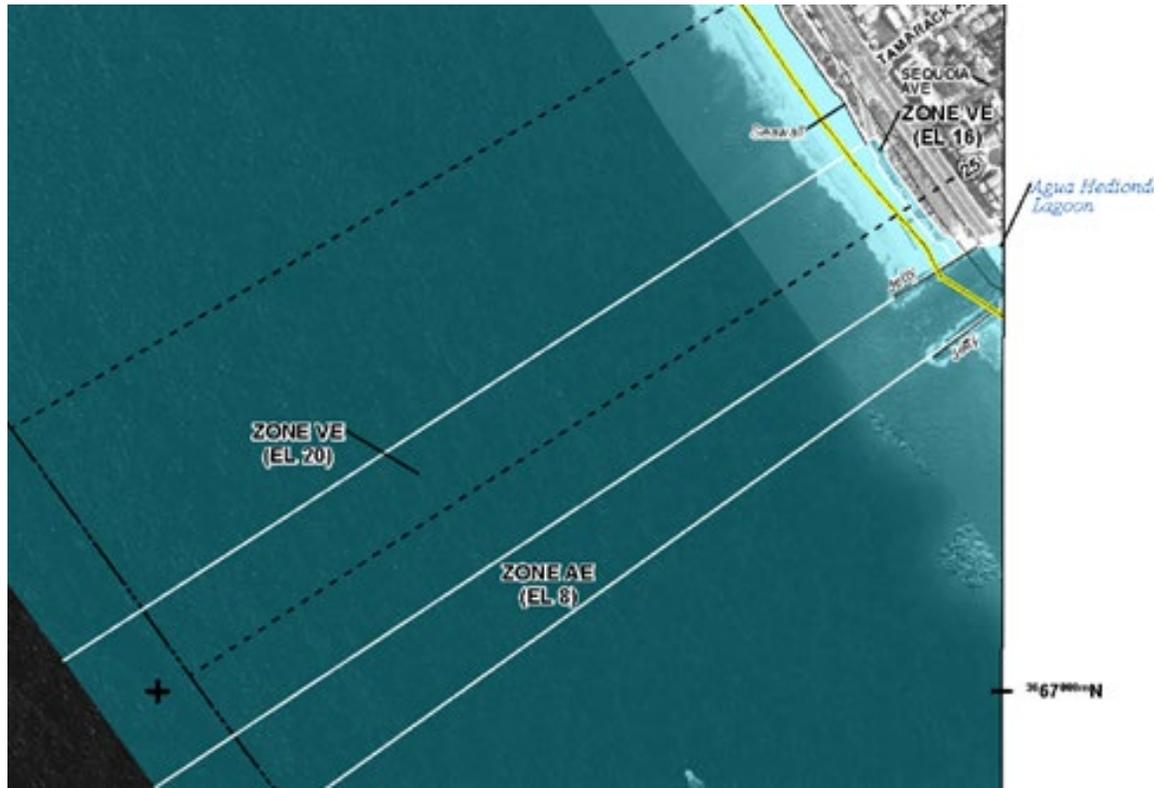


Figure 6. FEMA NFIP Preliminary Flood Map for the Study Area
(Modified from: FEMA.gov)

3.2 U.S. Geological Survey Coastal Storm Observing System (CoSMoS 3.0)

Carlsbad's exposure to future rates of sea level rise was outlined in the City of Carlsbad Sea Level Rise Vulnerability Assessment (Moffatt & Nichol & Revell Coastal, 2015). To assess future vulnerability at the community scale, preliminary results from the CoSMoS 3.0 model were coupled with future predictions of sea level rise. CoSMoS was developed for hindcast studies, operational applications and future climate scenarios to provide emergency responders and coastal planners with storm-hazards information that can be used to increase public safety, mitigate physical damages, and more effectively manage and allocate resources within complex coastal settings (Barnard et al., 2018). The modeling approach that has been developed by the U.S. Geological Survey (USGS) to allow detailed predictions of coastal flooding due to both future sea level rise and storms integrated with long-term coastal evolution (i.e., beach changes and cliff/bluff retreat) over large geographic areas (100s of kilometers).

The 100-yr return period coastal hazards for year 2050 (0.5m or 1.65 ft of sea level rise) is shown in Figure 7. Coastal hazards in the study area with 2.0m of sea level rise is shown in Figure 8. CoSMoS results differ from those proposed by FEMA. The intent of CoSMoS was not to identify coastal hazards at the parcel scale but instead to identify hazards and vulnerabilities over large geographic regions. CoSMoS was also developed to predict potential future hazards resulting from sea level rise while FEMA maps coastal hazards based on an analysis of existing data.

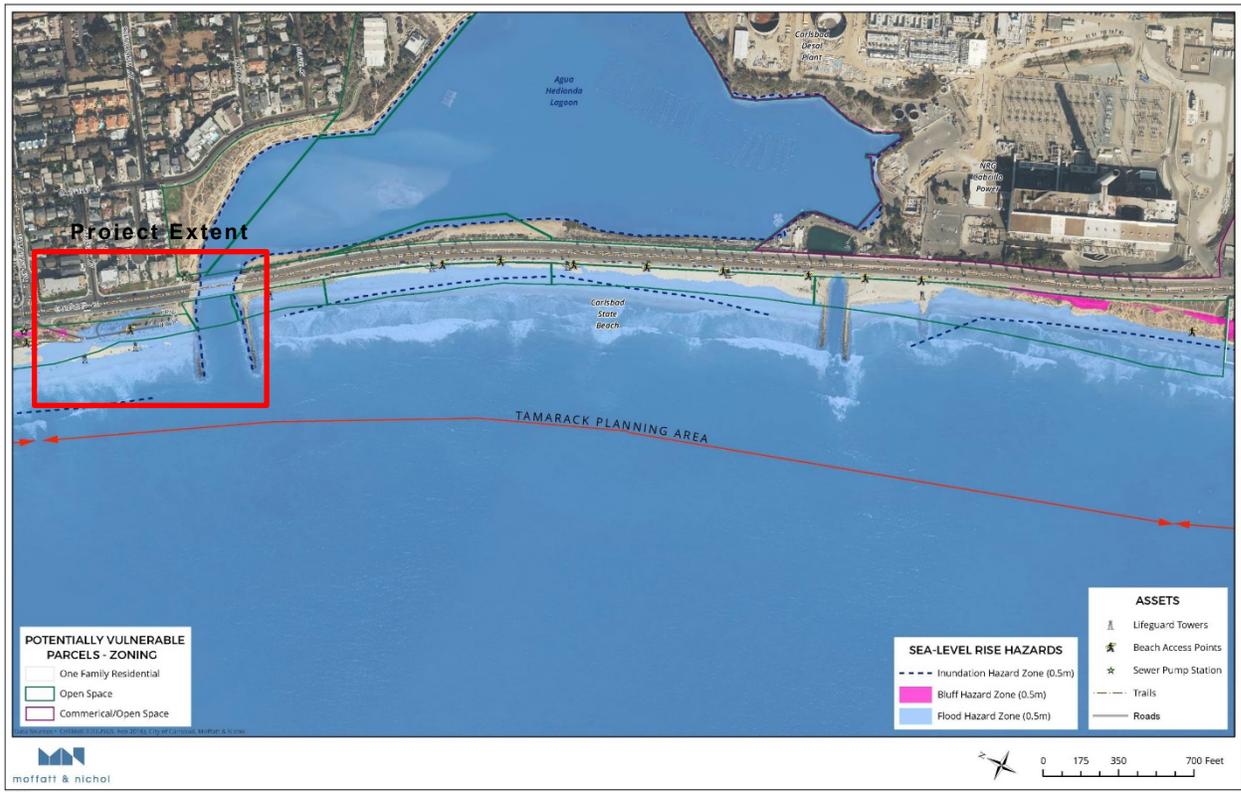


Figure 7. CoSMoS Sea Level Rise Hazards with 0.5m of Sea Level Rise (M&N 2015)

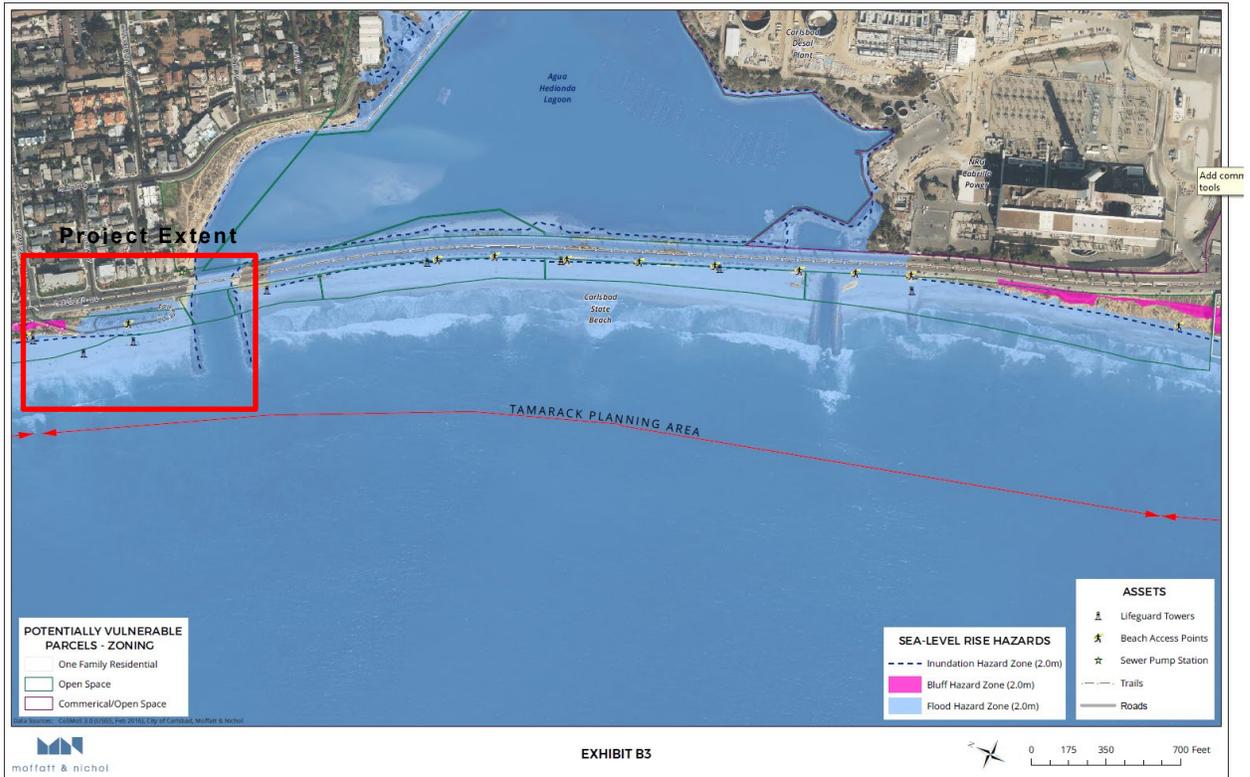


Figure 8. CoSMoS Sea Level Rise Hazards with 2.0m of Sea Level Rise (M&N 2015)



3.3 SANDAG Beach Profile Data

In 1996, SANDAG initiated the Regional Shoreline Monitoring Program (Monitoring Program), which measures the changes in beach width over time, documents the performance of sand replenishment projects, and helps to improve the design and effectiveness of beach fills. The Monitoring Program provided data for the design of the 2001 and 2012 Regional Beach Sand Projects (RBSP) and helped guide the selection of candidate beach sites. Although the monitoring requirements imposed as permit conditions of the 2001 RBSP ended in 2006, SANDAG has continued a modified monitoring program (SANDAG, 2017).

Profile CB-0830 of the Monitoring Program is located within the Project site at the north end of the Tamarack State Beach Parking Lot. The location of the transect is shown in Figure 4. Profiles at this location have been measured seasonally (spring/fall) from 1996 to 2017 and are shown in Figure 9. Profile CB-0830 is an accretional beach profile developed in response to regional and local nourishment programs. Sediment transport within the littoral cell influences beach profiles on a regional scale as sediment is moved along the coast in response to the wave climate. The most recent nourishment used sediment courser than native sand that resulted in a steepening of the upper shoreface relative to historic conditions. Figure 10 shows the time history of the mean sea level contour since 1996. The data indicate that the growth of the profile started in 2012, reaching the maximum beach width in 2014. An accretional beach profile, with seasonal fluctuations in profile width, has occurred since 1997.

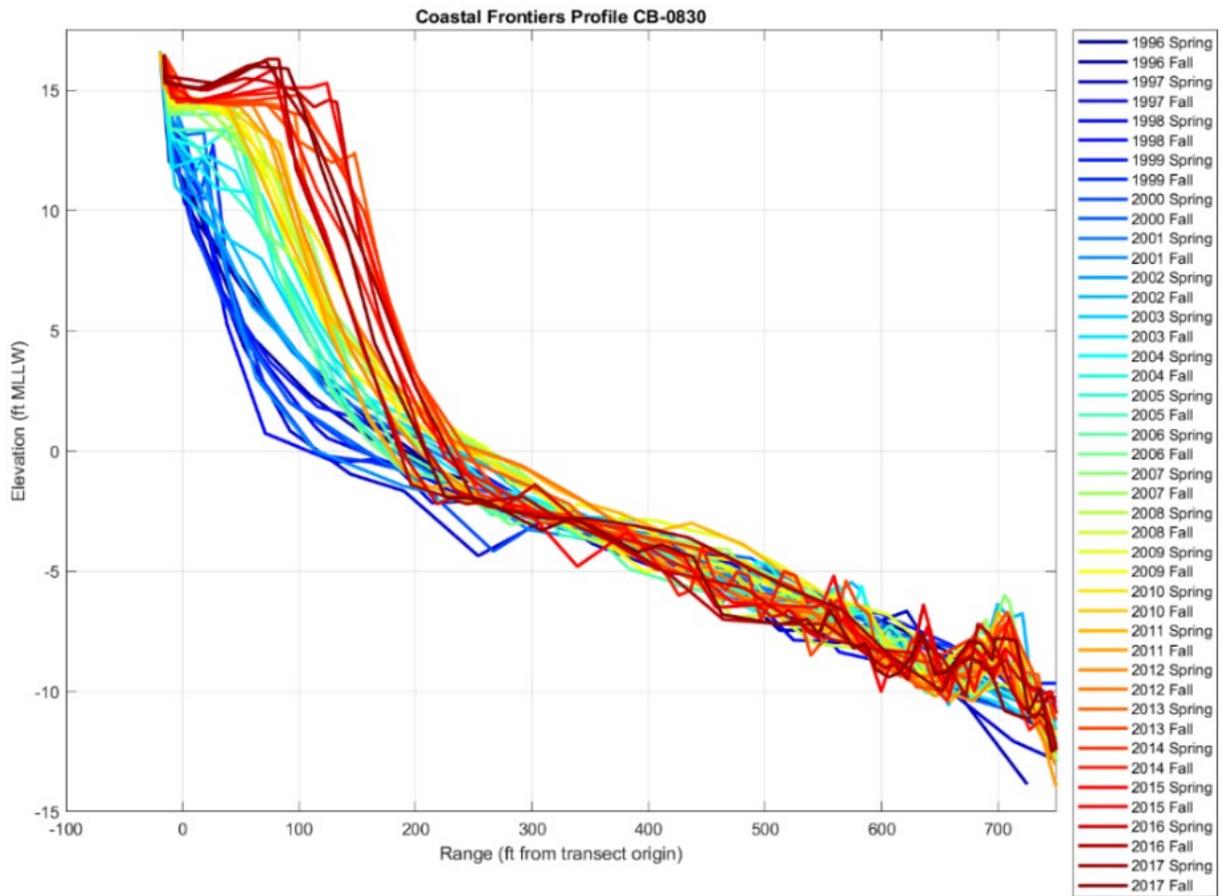


Figure 9. Tamarack Seasonal Beach Profile Change at CB-0830 from Spring 1996 to Fall 2017 (CFC 2017)

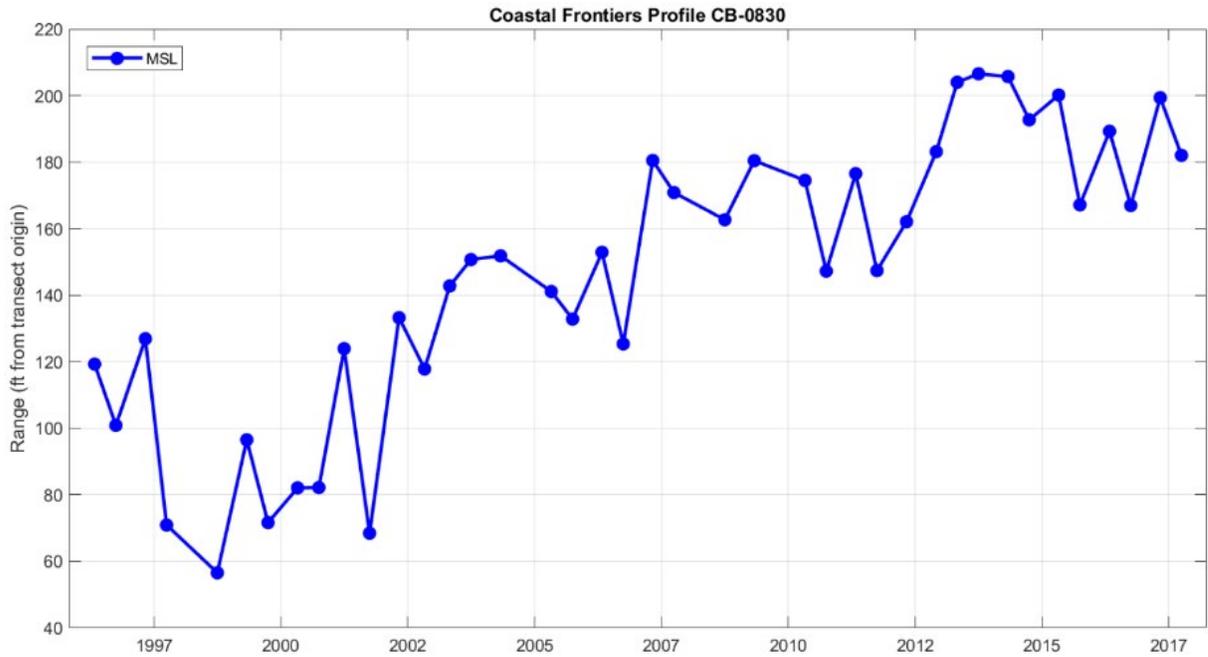


Figure 10. Tamarack Mean Sea Level Beach Width Change from 1997 to Present (CFC Profile CB-0830).



4. Oceanographic Data

The approach for this Wave Run-up Study is to analyze current and potential future site conditions relative to wave run-up. These elements are discussed in this section.

4.1 Water Level

Water level data for the Project Site were obtained from National Oceanic and Atmospheric Administration (NOAA) La Jolla gauge (Station 9410230). The station is located at (32° 52' N, 117° 15.4' W) and was established in 1924 (with an updated installation in 1988). The tide gauge location is shown in Figure 11. Water levels from this site are analyzed in this section.

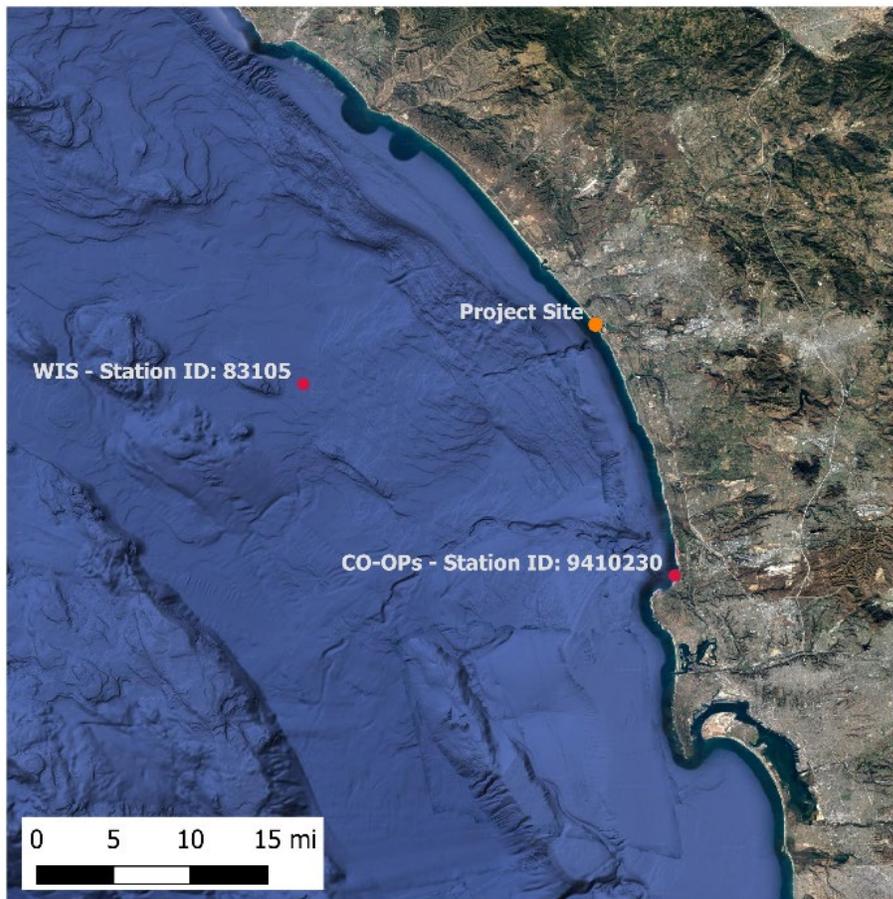


Figure 11. Water Level and Wave Data Locations near the Project Site.

4.1.1 Tidal Datums

Tidal datums in La Jolla are applicable to the San Diego region open-ocean coastline. The tidal datums are summarized in Table 1. Elevations in this report are described relative to the NAVD88 tidal datum.



Table 1. Tidal Datums from NOAA La Jolla Station 9410230.

Datum	Abbreviation	Elevation (ft NAVD88)
Highest Astronomical Tide	HAT	6.95
Mean Higher-High Water	MHHW	5.13
Mean High Water	MHW	4.41
Mean Tide Level	MTL	2.56
Mean Sea Level	MSL	2.54
Mean Diurnal Tide Level	DTL	2.47
Mean Low Water	MLW	0.71
Mean Lower-Low Water	MLLW	-0.19
Lowest Astronomical Tide	LAT	-2.07
North American Vertical Datum of 1988	NAVD88	0.00
Station Datum	STND	-4.56

4.1.2 Tides

Tides in Carlsbad are semidiurnal in nature, which refers to two highs and two lows occurring per day. Astronomical water levels were isolated from the tidal record by regressing known tidal frequencies onto the tidal record. Astronomical water levels for the Project site are shown in Table 2.

Table 2. Astronomical Water Level Exceedance for La Jolla.

Exceedance (%)	Water Level (ft)
1	3.40
2	3.09
5	2.58
10	2.06
25	1.08

4.1.3 Sea Level Anomaly

A mean sea level anomaly reveals the regional extent of anomalous water levels in the coastal ocean, which can indicate unusual water temperatures, salinities, average monthly winds, atmospheric pressures, and/or coastal currents. The sea level anomaly occurs over periods of months and demonstrates the interconnectedness of the ocean with atmospheric systems. Sea level anomalies are typical along the U.S. Pacific Coast with climatic events such as the El Niño Southern Oscillation (ENSO) (NOAA, 2013). The sea level anomaly exceedance curve for La Jolla is shown in Table 3.



Table 3. Sea Level Anomaly Exceedance for La Jolla.

Exceedance (%)	Water Level (ft)
1	0.49
2	0.40
5	0.28
10	0.21
25	0.10

4.1.4 Non-Tidal Residuals

Non-tidal residuals (NTR) consist of components of the recorded water level not linked to astronomical tide or seasonal water levels. NTRs include water level responses to regional effects such as storm surge and changes in atmospheric pressure and typically occur on the order of days. Storm surge is an abnormal rise of water over and above the predicted astronomical tide, typically generated by a storm, and is generally the result of wind-induced set up along a shoreline. Atmospheric pressure changes result in water column expansion or retraction due to low and high-pressure systems, respectively.

Return period NTR events within the La Jolla tidal record were identified through a statistical analysis of the tide gauge record. Results are summarized in Table 4 and shown in Figure 12. The data indicate the 50- and 100-year NTR events are 1.18 feet and 1.29 feet, respectively.

Table 4. Non-Tidal Residual Return Period for La Jolla.

Return Period (yr)	Water Level (ft)
5	0.88
10	0.96
25	1.08
50	1.18
100	1.29

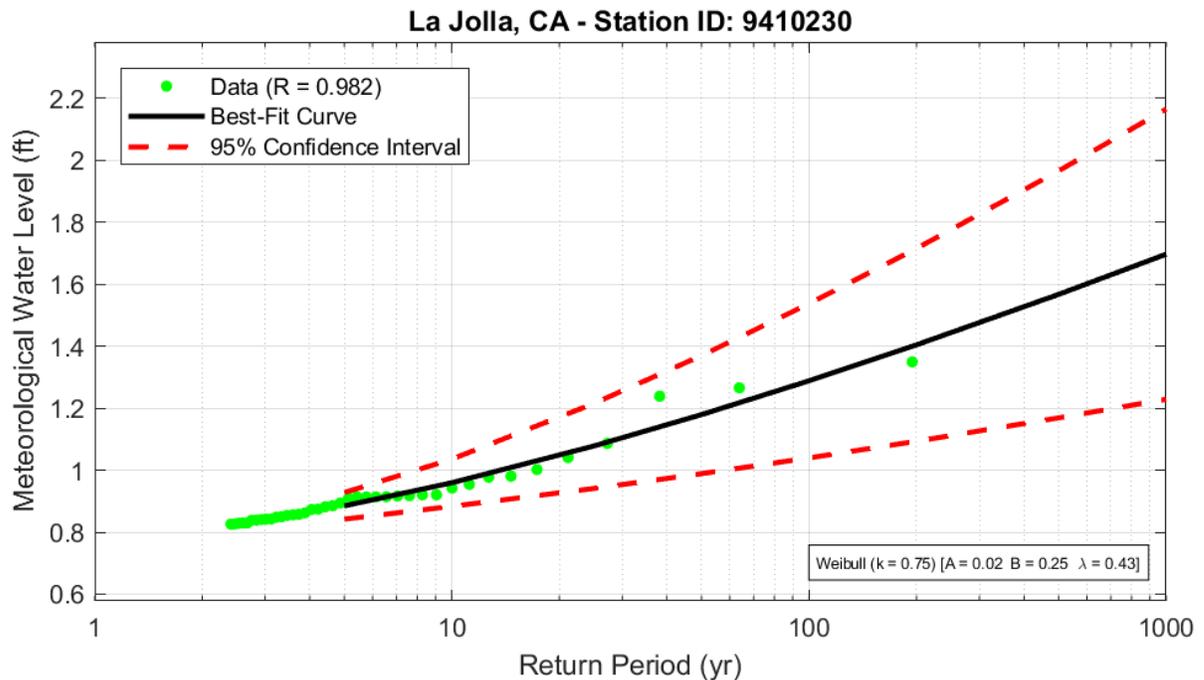


Figure 12. Non-Tidal Residual Hazard Curve for La Jolla.

4.1.5 Sea Level Rise

Sea level rise trends were taken from California Coastal Commission Sea Level Rise Policy Guidance, Table G-11 for the La Jolla tide gauge. The authors state that the table is adapted from the 2018 California Ocean Protection Council Sea Level Rise Guidance (Ocean Protection Council (OPC), 2018) to present only the three scenarios OPC recommends evaluating. While the OPC tables include low emissions scenarios, only high emissions scenarios, which represent RCP 8.5, are included in this study because global greenhouse gas emissions are currently tracking along this trajectory. The H++ projection is a single “worst-case” scenario and does not have an associated likelihood of occurrence. Projections are relative to a baseline year of 2000 (or more specifically, the average relative sea level over 1991-2009). Although all three SLR scenarios were assessed in the analysis, the Medium-High Risk Aversion projection is specifically discussed below.



Table 5. Sea Level Rise Trends for La Jolla

Projected Sea Level Rise (in feet): <i>La Jolla</i>			
	Probabilistic Projections (in feet) (based on Kopp et al. (2014))		H++ Scenario (Sweet et al., 2017)
Year	Low Risk Aversion	Medium-High Risk Aversion	Extreme Risk Aversion
	<i>Limit of "likely range"</i> (~17% probability SLR exceeds...)	<i>1-in-200 chance</i> (0.5% probability SLR exceeds...)	<i>Single scenario</i> (no associated probability)
2000	0.0	0.0	0.0
2030	0.6	0.9	1.1
2040	0.9	1.3	1.8
2050	1.2	2.0	2.8
2060	1.6	2.7	3.9
2068	1.9	3.4	4.9
2070	2.0	3.6	5.2
2080	2.5	4.6	6.7
2090	3.0	5.7	8.3
2100	3.6	7.1	10.2
2110	3.7	7.5	12.0
2120	4.3	8.8	14.3
2130	4.9	10.2	16.6
2140	5.4	11.7	19.2
2150	6.1	13.3	22.0

(Adapted from: California Coastal Commission Sea Level Rise Policy Guidance, Table G-11)

4.2 Wave Conditions

Water level data for the Project Site were obtained from United States Army Corps of Engineers (USACE) Wave Information Studies (WIS) Station 83105. The wave station location is shown in Figure 11. The objective of the WIS is to provide high-quality coastal wave hindcast model estimates, wave analyses products and decision tools nationwide (U.S. Army Corps of Engineers, 2010). Wave estimates were hindcast using high quality wind fields, ice fields where appropriate and the latest wave modeling technology. To satisfy the Corps requirement for risk-based designs, long records of continuous wave climatology data are required. Hindcast datasets provide hourly wave information for locations every few miles along the coast.

Return period significant wave height events at the WIS station were identified through a statistical analysis of the tide gauge record. Results are summarized in Table 6 and shown in Figure 13. The data indicate the 50- and 100-year return period wave events are 19.8 feet and 21.3 feet, respectively. Note that a 10 year return period event has a 10% chance of occurring in any given year and that a 100-year event has a 1% chance of occurrence in a year.



Table 6. Significant Wave Height Return Period for the Study Area (WIS 83105)

Return Period (yr)	Sig. Wave Height (ft)
5	14.5
10	16.1
25	18.2
50	19.8
100	21.3

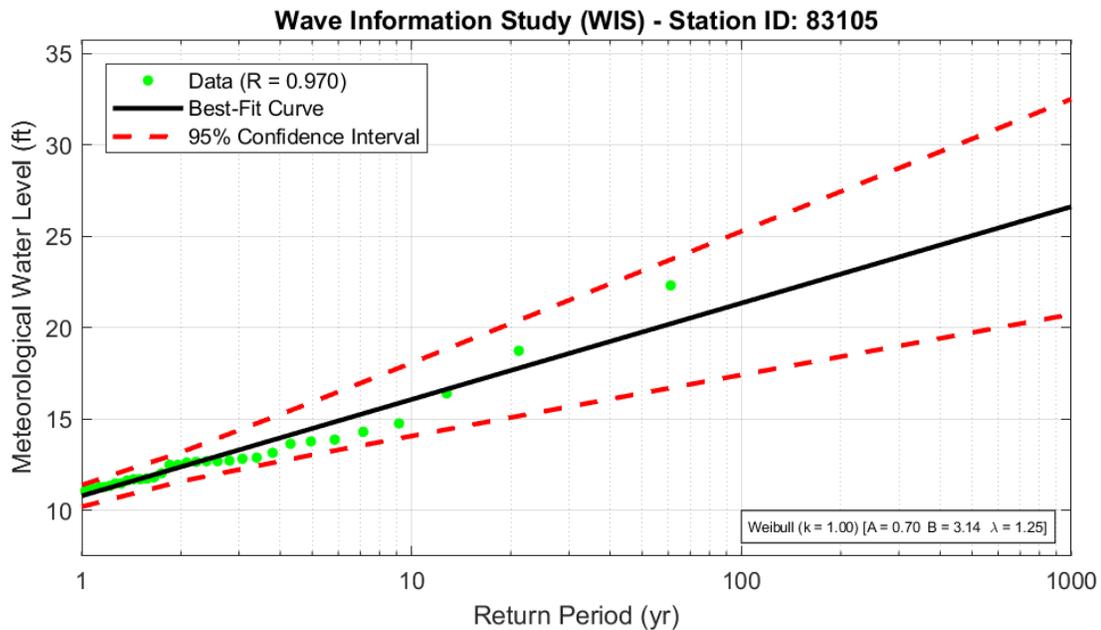


Figure 13. Significant Wave Height Return Periods for the Study Area

4.3 Beach Profile Analysis

Beach profiles were used to characterize local beach conditions at the Project site. SANDAG profiles (CB-0830) from Spring 2010 to Fall 2012 were selected and averaged to form a representative profile. Although there are more recent profiles, the most recent profiles seem strongly influenced by RBSP II project that have steepened the shoreface and do not appear representative of natural beach conditions. Since wave runup results are influenced by beach slope (i.e. steeper beach slope results in higher runup elevation), choosing a different representative beach profile would change the results.

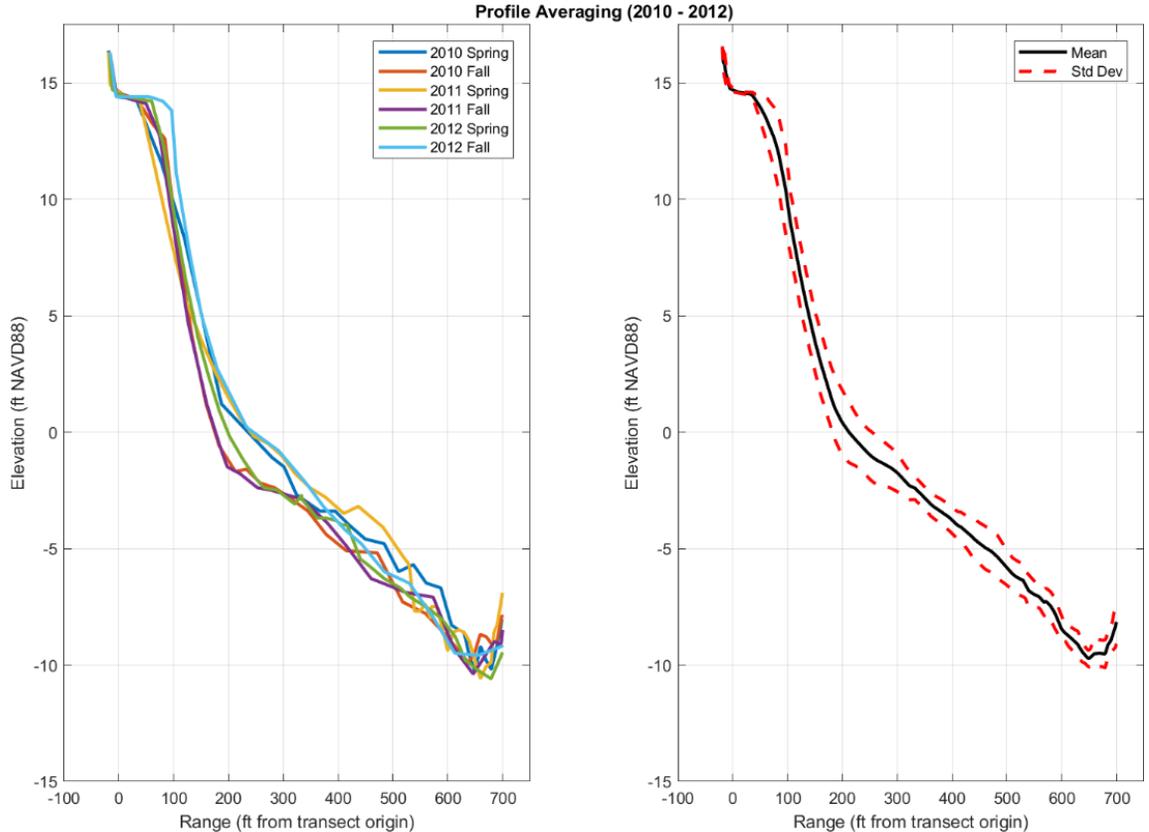


Figure 14. Seasonal CB-0830 Profiles from 2010 to 2012 (left) and Mean/Standard Deviation Profile (right).

5. Wave-Runup Results

Probabilistic hazard analysis provides a means to incorporate natural uncertainties, model uncertainties and errors into the hazard assessment. Probabilistic hazard analysis was extended to oceanographic problems [see Geist & Parsons (2006) & Geist & Lynett (2014)] by adapting a long-standing probabilistic method for determining ground motion exceedance caused by earthquake known as probabilistic seismic hazard analysis (Cornell, 1968).

Probabilistic hazard analysis is founded on the idea of separating input variable return periods (e.g. storm surge, significant wave height) from hazard recurrence periods. Using a Monte Carlo methodology, variables constrained by the prescribed probability density functions can be input to a given set of governing equations to generate realizations which define the hazard recurrence space. This methodology is ideal where the governing equations may be well known, but the independent variables of the input as well as the resisting design components may not be completely known. The process repeats hundreds or thousands of times to generate a statistical understanding of design parameters (e.g. still water level, runup elevation) which contains the uncertainty of the input parameters. Once the statistical parameters space is defined, the maximum envelope of all of these realizations is estimated which represents the best estimate of the design parameter hazard. This curve is what is known as the hazard curve.



For instance, for a given set of significant wave heights and water levels, it is possible that each parameter set can have the same recurrence period but that the individual components can have vastly different individual recurrences. When coupled with a set of governing equations, the difference in the input parameters can result in a wide array of possible solutions which define the parameter space by recurrence period. Therefore, by defining the maximum envelope or hazard curve for a given set of significant wave heights and water levels, it is possible to directly estimate which solution defines the upper bound of the recurrence hazard. This upper bound is what is defined as the hazard curve.

The run-up elevations (R_{Total}) for the Project site were estimated using a Monte Carlo methodology where the water level is a summation of individual components.

$$R_{Total} = \eta_{datum} + \eta_{tide} + \eta_{seasonal} + \eta_{NTR} + \eta_{SLR} + R_2$$

where η_{datum} is the data reference, η_{tide} is the tidal elevation, $\eta_{seasonal}$ is the seasonal water level elevation, η_{NTR} is the nontidal residual elevation, η_{SLR} is the sea level rise elevation at a given time period and R_2 is the run-up point reached or exceeded by only 2% of all waves.

Wave constituents are input into the Stockdon, Holman, Howd, & Sallenger (2006) empirical run-up equation. This equation is commonly used to estimate run-up on sandy beaches along the western U.S. shorelines. The equation is defined as follows:

$$R_2 = 1.1 \left(0.35 \beta_f (H_0 L_0)^{1/2} + \frac{[H_0 L_0 (0.563 \beta_f^2 + 0.004)]^{1/2}}{2} \right)$$

Where, H_0 is offshore significant wave height, L_0 is offshore significant wavelength and β_f is beach slope. The R_2 run-up level is a common metric for quantifying the maximum elevation inundated during a storm event.

Run-up elevations return periods for the Project site are given in Table 7 and shown in Figure 15. The 10- and 100-year return period events for the existing condition are 16.0 feet and 19.5 feet, respectively. The 10- and 100-year return period events increase to 19.4 feet and 22.9 feet, respectively under the year 2068 Medium-High Risk Aversion sea level rise scenario. Elevations are shown overlaid on an aerial image for 2018 and 2068 in Figure 16 and Figure 17, respectively. These results are comparable to the preliminary FIRM map elevations developed by FEMA. The migration of mean sea level landward with the various projections of sea level rise are also shown in these figures.



Table 7. Wave Runup Elevations for Project Site (ft, NAVD88).

Return Period (yr)	2018	Low Risk Aversion	2068 Medium-High Risk Aversion	Extreme Risk Aversion, H++
10	16.0	17.9	19.4	20.9
100	19.5	21.4	22.9	24.4

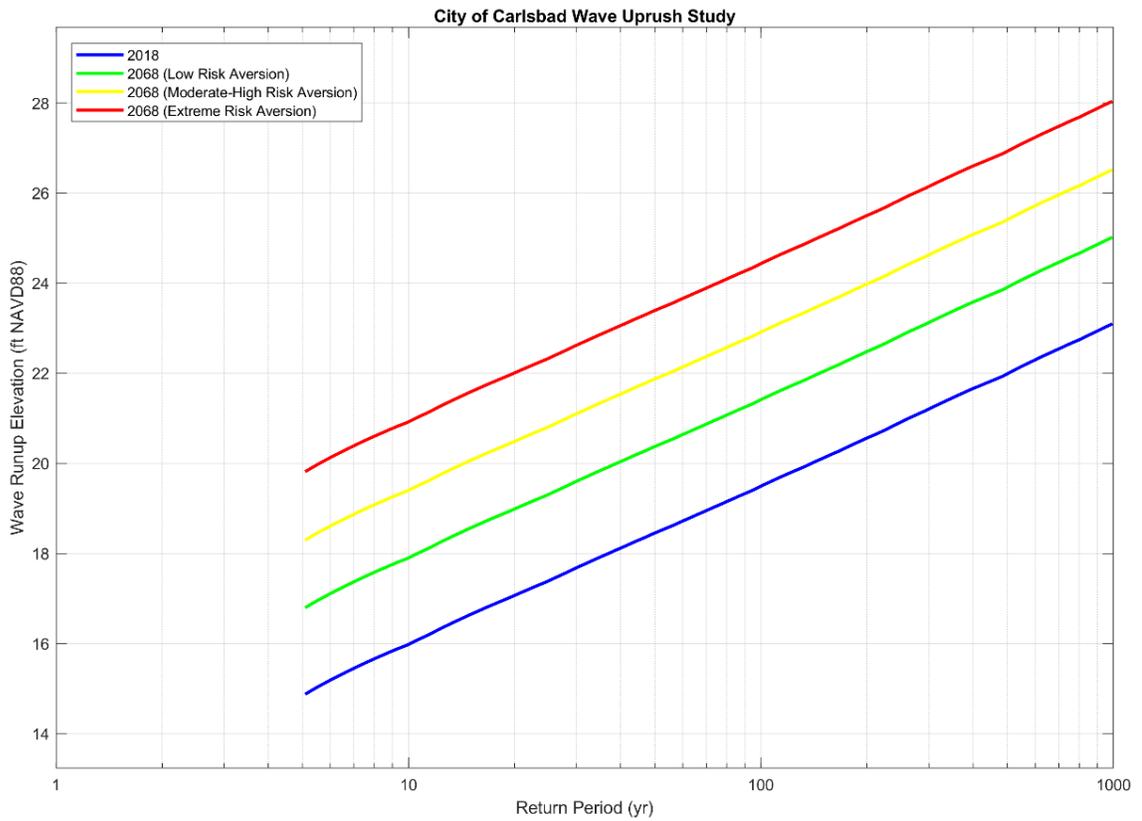


Figure 15. Wave Runup Hazard Curves for Project Site (ft NAVD88).

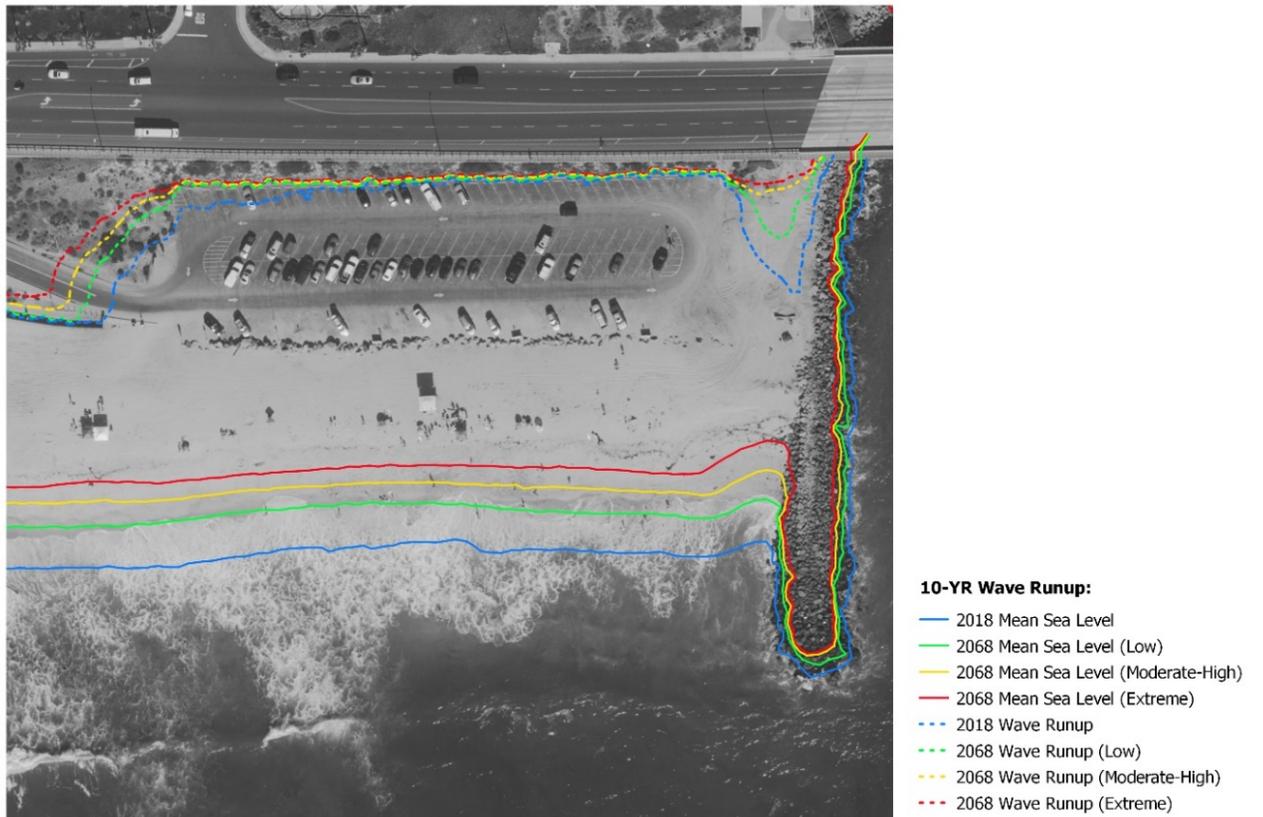


Figure 16. 10-yr Return Period Runup Elevations during Existing Conditions (2018) and Future Condition (2068).

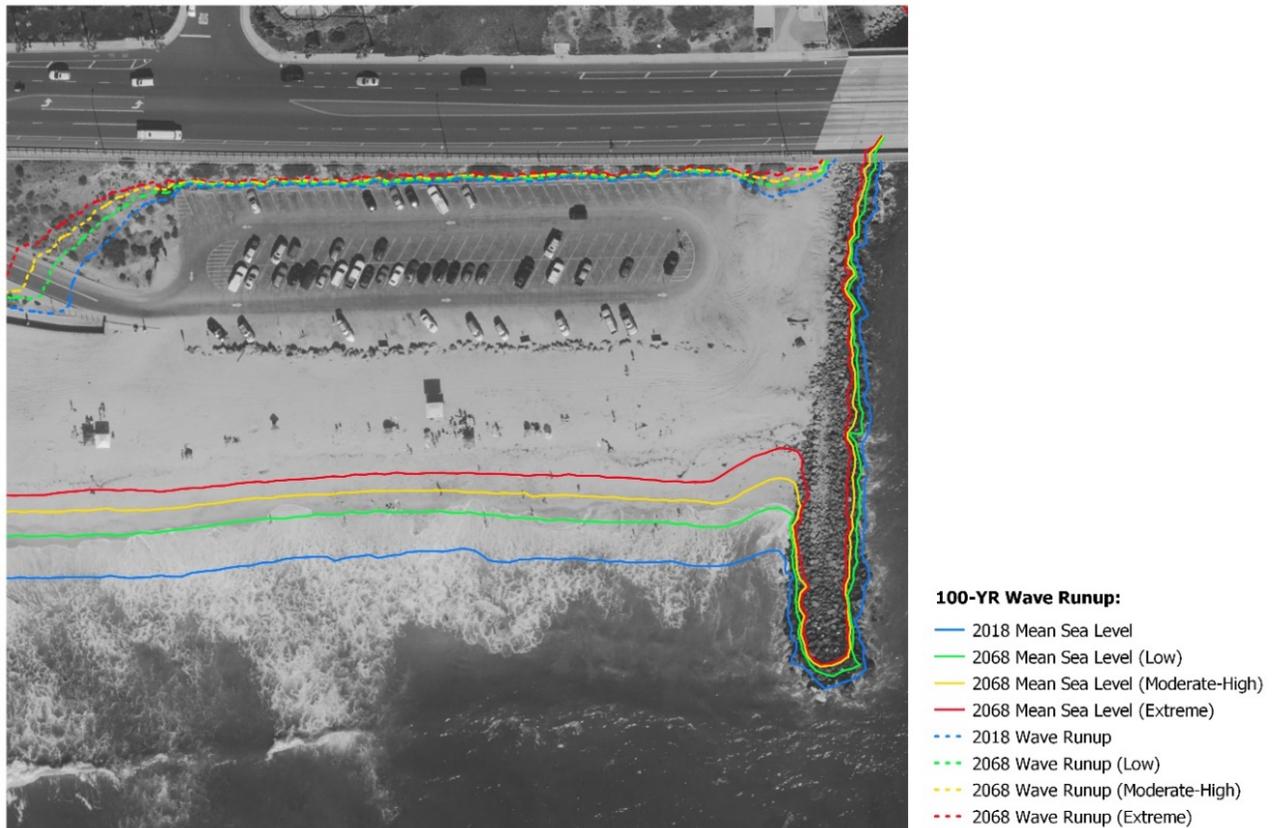


Figure 17. 100-yr Return Period Runup Elevations during Existing Conditions (2018) and Future Condition (2068).

6. Alternative Vulnerability Analysis

6.1 At-grade Walkway

Although the at-grade crosswalk on Carlsbad Boulevard concept has not been fully developed, the elevation of the crossing on the roadway would be outside the reach of coastal hazards in the existing and year 2068 condition. However, ramps and/or stairs down to the beach would likely be within the limits of wave runup during extreme events. Thus, design of the ramps and/or stairs to the beach should consider the coastal hazards described in this report.

6.2 Pedestrian Bridge

Specific elevations of this concept have yet to be developed. However, based on the vertical walkway clearance desired and the bridge's soffit elevation, it is likely that the under-bridge pedestrian bridge / walkway would be subject to frequent inundation (daily wetting and drying) associated with tides in the existing and year 2068 condition. The walkway would also be subject to flooding as waves commonly propagate between the cold water jetties in the existing condition. Design of this concept should consider frequent wetting and drying and wave forces acting on the structure.



6.3 Cut and Cover Structure

The vulnerability of the cut and cover walkway under Carlsbad Boulevard is at its connection to the Tamarack State Beach parking lot. Given the walkway's design that includes a 9' vertical clearance and three-foot cover thickness, the walkway enters the parking lot at an elevation of approximately +14'. Assuming this elevation, the walkway would be vulnerable to flooding during less than a 10-year return period wave event in the existing condition (without sea level rise). Under any sea level rise scenario (Low or Medium-High Risk Aversion) by year 2068, the frequency and severity of walkway flooding would increase.

Flooding events would expose the walkway to salt water, sand and debris during peak periods of the tidal cycle and wave event. Therefore, exposure of the walkway to flooding would be relatively short in duration (few hours during a day) and episodic in nature.

Adapting the walkway to accommodate impacts associated with flooding may include the following design concepts:

- Incorporate drainage features within the walkway that allow water to discharge or percolate.
- Protect the walkway's western terminus from flood waters entering with a controlling structure, such as a cutoff wall or dike.
- Improve shoreline protection at Tamarack State Beach parking lot to prohibit flooding. Concepts to prohibit flooding would require an engineered revetment of seawall on the seaward edge of the lot. Since the parking lot is owned by State Parks, coordination with the agency would be needed to progress this option.



7. Conclusions

An analysis of existing and future coastal hazards was conducted to support Chen Ryan Associates in the preparation of a feasibility study for this Project. The analysis included maximum wave run-up during storm conditions in combination with potential future sea level rise (SLR). The approach of the analysis was developed in general conformance with the California Coastal Commission (CCC) SLR Policy guidance including recommendations within the Science Update released November 2018.

The 10- and 100-year return period wave runup elevations in the existing condition are 16.0 feet and 19.5 feet, respectively. The 100-year runup result is comparable to that shown in the NFIP preliminary map elevations developed by FEMA. The 10- and 100-year return period events increase to 19.4 feet and 22.9 feet, respectively under the year 2068 Medium-High Risk Aversion sea level rise scenario.

Based on a review of available information for the alternatives being considered in this feasibility study, we offer the below coastal hazard vulnerability findings and recommendations:

- At-grade Walkway: This concept would not be exposed to coastal hazards in the existing or year 2068 condition. However, ramps and/or stairs down to the beach would likely be within the limits of wave runup during extreme events. Thus, design of the ramps and/or stairs to the beach should consider the coastal hazards described in this report.
- Pedestrian Bridge: Although elevations of the walkway deck and underdeck were not available at the time of this analysis, the structure would likely be subject to frequent inundation (daily wetting and drying) associated with tides in the existing and year 2068 condition. The walkway would also be subject to flooding and wave forces acting on the structure as ocean waves commonly propagate between the cold water jetties. A more detailed analysis would be needed to understand the extent of wave impacts on this structure. It is recommended that the design of this concept consider frequent wetting and drying and wave forces acting on the structure.
- Cut and Cover Walkway: The western terminus of the walkway would be vulnerable to flooding during a 100-year return period wave event without sea level rise. The walkway would be vulnerable to flooding during anything greater than a 10-year return period wave event with predictions for sea level rise by year 2068. This assumes that the walkway's western terminus elevation is +14' NAVD88. Incorporation of drainage controls within the walkway, installation of a water controlling structure fronting the terminus of the walkway, and protection of the parking lot from flooding with a coastal structure (such as a seawall) were presented as potential design options to lessen coastal vulnerabilities and accommodate sea level rise for this option.



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Appendix B

Cost Estimate and Structures Estimate

**CARLSBAD FEASIBILITY
CONCEPTUAL COST ESTIMATE**

Description	Measure	Quantity	Price	Total	Subtotals
Site Civil					
Clearing and Grubbing	LS	1	\$7,740.00	\$7,740	
Roadway Excavation	CY	227	\$70.00	\$15,890	
Embankment	CY	46	\$120.00	\$5,520	
Remove Concrete (Curb and Gutter)	LF	78	\$10.00	\$780	
Remove Concrete (Sidewalk)	SF	464	\$10.00	\$4,640	
Remove Asphalt Concrete Pavement	CY	83	\$30.00	\$2,480	
Remove Concrete (Curb)	CY	2	\$290.00	\$644	
Class II Aggregate Base	CY	82	\$50.00	\$4,100	
Hot Mix Asphalt (TYPE A)	TN	112	\$120.00	\$13,392	
Minor Concrete (Sidewalk)	CY	17	\$700.00	\$12,030	
Minor Concrete (6" Curb & Gutter)	CY	3	\$550.00	\$1,589	
Minor Concrete (6" Curb)	CY	5	\$800.00	\$4,296	
Install 18" RCP Storm Drain	LF	130	\$200.00	\$26,000	
Install 48" RCP Storm Drain	LF	135	\$500.00	\$67,500	
Type A-6 Cleanout	EA	1	\$7,000.00	\$7,000	
Type B-1 Inlet	EA	1	\$6,200.00	\$6,200	
18" D-4 Headwall	EA	1	\$6,000.00	\$6,000	
18" Automatic Drainage Gate	EA	2	\$4,500.00	\$9,000	
Catch Basin - Type G	EA	1	\$3,900.00	\$3,900	
Concrete Pipe Collar	EA	2	\$4,000.00	\$8,000	
Remove RCP Storm Drain	LF	104	\$200.00	\$20,800	
Remove Inlet	EA	1	\$2,000.00	\$2,000	
Remove Drainage Structure	EA	1	\$4,000.00	\$4,000	
Relocate Street Light	EA	2	\$4,000.00	\$8,000	
Midwest Guardrail System	LF	80	\$80.00	\$6,400	
Fence	LF	101	\$30.00	\$3,030	
SWPPP	LS	1	\$10,000.00	\$10,000	
Construction Area Traffic Control	LS	1	\$50,000.00	\$50,000	
				Civil Subtotal	\$310,931
Utilities					
Relocate 6" PVC Sewer Force Main	LS	1	\$65,000.00	\$65,000	
Relocate 12" CMLC Water	LS	1	\$100,000.00	\$100,000	
Relocate 4" HP Gas	LS	1	\$65,000.00	\$65,000	
				Utility Subtotal	\$230,000

**CARLSBAD FEASIBILITY
CONCEPTUAL COST ESTIMATE**

Description	Measure	Quantity	Price	Total	Subtotals
ADA Ramp					
Clearing and Grubbing	LS	1	\$23,712.92	\$23,713	
Roadway Excavation	CY	139	\$70.00	\$9,730	
Embankment	CY	290	\$120.00	\$34,800	
Minor Concrete (Sidewalk)	CY	157	\$700.00	\$109,900	
Concrete Ditch	SF	252	\$24.00	\$6,048	
Cast in Place - Retaining Wall	SF	1,724	\$150.00	\$258,600	
Handrail	LF	610	\$90.00	\$54,900	
				Ramp Subtotal	\$497,691
Structures					
Precast Box Culvert	LS	1	\$500,000.00	\$500,000	
				Structures Subtotal	\$500,000
Lighting					
Lighting	LS	1	\$100,000.00	\$100,000	
				Structures Subtotal	\$100,000
Landscape					
Relocate Interpretive Signage	EA	1	\$175.00	\$175	
Revegetation Areas	SF	3,500	\$2.50	\$8,750	
Temporary Irrigation	SF	3,500	\$1.50	\$5,250	
Irrigation trenching/wiring (Asphalt removal and rep	Allowance	1	\$2,500.00	\$2,500	
				Utility Subtotal	\$16,675
Construction Total					\$1,655,297
30% Contingency					\$496,589
Construction Grand Total					\$2,151,886
DESIGN COST					
Environmental and PE.	%	7	CCE	\$151,000.00	
Design - 30% Package	%	4	CCE	\$87,000.00	
Design - 60% and Permits	%	5	CCE	\$108,000.00	
Design - 90%, Final, Bid Support	%	5	CCE	\$108,000.00	
				Design Subtotal	\$454,000
Construction Management (20%)					\$430,377
COST TOTAL					\$3,036,300

July 21, 2020

1. ADA Beach Access at Cold Water
Structure Type: Cut and Cover- RC/ PC Box Culvert

Ramp Length=	92.5	LF	PC Box Length per Oldcastle
	6	ft	Based on estimate provided by Oldcastle and input from TYLI CM
Cost/ Box=	\$ 10,000		
No. Boxes=	16		
Structure Cost=	\$ 160,000		
Add'n costs=	\$ 200,000		Excavation, backfill, wing walls plus non standard box for skylight
Total=	\$ 360,000		
Add 25%			Contingency
Structure Cost=	\$ 360,000		

For Budget, Use \$ 400,000

Cost already included in the total estimate under Structures

Appendix C Environmental Constraints Table

Carlsbad Trail Connectivity to Tamarack State Beach Feasibility Study – Environmental Constraints Analysis Table

Alternative Summary

The preferred alternative for the Trail Connectivity to Tamarack State Beach project involves constructing a cut and cover tunnel beneath Carlsbad Boulevard and constructing ADA compliant ramps on both sides of the tunnel. The tunnel would be approximately 93-feet and the ramps would have a maximum incline of 7.9 percent. The tunnel/ramp system would connect to the existing North Shore Agua Hedionda Lagoon Trail and provide connectivity from the east side of Carlsbad Boulevard to the beach.

Issue Area	Existing Conditions/Assumptions	Trail Connectivity to Tamarack State Beach	Constraints Summary
Aesthetics	<ul style="list-style-type: none"> Existing structures on the west side of Carlsbad Boulevard include a jetty armored with rock slope protection, and a parking lot with the open beach just west of these structures. On the east side of Carlsbad Boulevard, existing trails along with a small undisturbed hillside are below residential homes, which line the perimeter of the lagoon. No designated scenic resources are located in the area. 	<ul style="list-style-type: none"> Construction of the tunnel/ramp system would be primarily in a previously developed area or would coincide with existing trails. Extension of the trail system, including signage, would be consistent with existing design. Landscaping of native vegetation would be established adjacent to the proposed improvements. 	<ul style="list-style-type: none"> Aesthetic impacts are not anticipated, as the design of this alternative would be similar to the existing developed areas adjacent to this site. The portion of the ramp that would connect to eastward trails would be designed similarly to the existing trail. This option would not interfere with views of the coastline. The tunnel would not be highly visible to users as it is situated under an existing developed roadway/structure.
Air Quality	<ul style="list-style-type: none"> It is assumed that no operational sources are associated with this option, therefore only construction impacts are evaluated. No sensitive receptors are located in the vicinity of the proposed project. 	<ul style="list-style-type: none"> Potential impacts due to construction would be temporary. Standard construction equipment would be used. 	<ul style="list-style-type: none"> Air quality emissions associated with the proposed project include emissions from construction, including trenching under the roadway. However, operations associated with construction would minimize emissions through standard construction measures, storm water pollution prevention plan measures, and best management practices. Construction would be temporary; applicable measures would be implemented as necessary to minimize emissions.
Biological Resources	<ul style="list-style-type: none"> The majority of vegetation to the west and east of Carlsbad Boulevard is planted vegetation and/or bare ground or beach. The proposed tunnel would be connected to the existing State Parks parking lot west of Carlsbad Boulevard. East of Carlsbad Boulevard, the proposed ramp would impact the existing hillside, which mostly consists of sparse vegetation and existing trails. It should be noted that planted rare plant species may be present in the vegetation to the east of Carlsbad Boulevard; however, this habitat is not expected to be contiguous with existing habitat to the east within the larger Agua Hedionda Lagoon complex and a low number of species are expected in this footprint. Wildlife species in the proposed project site are not anticipated due to the disturbed footprint underneath and adjacent to Carlsbad Boulevard. However, habitat near the proposed project has potential eastward connection with Agua Hedionda Lagoon. North of the project site is coastal bluff, to the west is the Pacific Ocean, and to the south is the lagoon inlet. If feasible, project implementation would avoid the aquatic environment and potential jurisdictional resources to the south. This area is not located within the City of Carlsbad's Habitat Management Plan (HIMP) and is not designated as a significant wildlife corridor (City of Carlsbad 2004). 	<ul style="list-style-type: none"> Equipment staging during construction would most likely occur in existing developed or unvegetated areas (e.g., sewer lift station parking lot east of Carlsbad Boulevard, trails, State Parks parking lot). Impacts to vegetation may occur with installation of the ramp on the east side of Carlsbad Boulevard (e.g., vegetation removal). Revegetation of bare ground and the establishment of formal trails would occur after ground-disturbing activities in the proposed project footprint. 	<ul style="list-style-type: none"> The proposed improvements have the potential to impact vegetation near the site. However, the majority of the proposed project footprint is sparsely vegetated or consists of planted vegetation that has successfully established at the site, which indicates that plant establishment would most likely be successful post-construction. To the extent practicable, the design of the ramp/tunnel system uses existing infrastructure and trails, which would minimize impacts to vegetation. Best management practices would be implemented to ensure plant establishment adjacent to the ramp on the east side of Carlsbad Boulevard. The proposed project footprint does not function as a major terrestrial wildlife movement corridor. No impacts are anticipated to wildlife movement/corridors with implementation of this option. Measures would be implemented to avoid and/or minimize potential impacts to rare plant and/or wildlife species if found (e.g., plant salvage, clearance surveys for birds, and vegetation removal outside of the breeding season, if applicable). To the extent practicable, aquatic and jurisdictional resources would be avoided during construction of the proposed improvements. Temporary impacts to vegetation may occur; however, the proposed project site would be planted east of Carlsbad

Carlsbad Trail Connectivity to Tamarack State Beach Feasibility Study – Environmental Constraints Analysis Table

Issue Area	Existing Conditions/Assumptions	Trail Connectivity to Tamarack State Beach	Constraints Summary
Cultural/Tribal Cultural Resources	<ul style="list-style-type: none"> A previous records search was conducted in the vicinity of the proposed project for the Carlsbad Boulevard and Tamarack Avenue Improvement Project in 2017 and encompassed the proposed tunnel/ramp system footprint (AECOM 2018). The previous records search indicated 20 studies have been conducted, four cultural resources were previously recorded, and one cultural resource was identified during a pedestrian survey, all within a 0.5 mile vicinity of the proposed project. After consulting with the Native American Heritage Council, it was determined that no Native American places or sites were on file in the vicinity of the proposed project site. Two prehistoric sites were recorded within 1,500 feet of the proposed project, one of which consisted of a short-term camp with shell midden and cobble base artifacts, while the other site had primarily shell and lithic scatter (AECOM 2018). The proposed project is not anticipated to impact these sites as they are located outside of the direct project footprint. 	<ul style="list-style-type: none"> The proposed project would be located on previously undisturbed areas east of and under Carlsbad Boulevard. Potential for impacts could occur if a previously unknown resource was discovered during ground-disturbing activities. 	<p>Boulevard, and vegetation would be reestablished in this area post-construction.</p> <ul style="list-style-type: none"> Standard surveys, analysis, and mitigation measures (e.g., consulting a qualified archaeologist and a Native American representative, if applicable) would be implemented prior to and during construction, as required.
Geotechnical/Geology	<ul style="list-style-type: none"> There are no active faults identified through Carlsbad, and the California Geologic Survey does not include Carlsbad on list of cities affected by the Alquist-Priolo Earthquake Fault Zones. However, Carlsbad is in a seismically active region and is subject to ground-shaking during an earthquake. Geotechnical stability analyses were performed, indicating that the coastal bluffs in the project area currently have adequate factors of safety against deep instability and would not be located on an unstable geologic unit or on expansive soils (AECOM 2016). As stated in the General Plan, the city of Carlsbad is located in the coastal portion of the Peninsular Ranges Geomorphic Province; a region characterized by northwest-trending structural blocks and intervening fault zones (City of Carlsbad 2015a). The proposed project areas consist of fill material and terrace deposits where the base of the bluffs is characterized by the Santiago Formation and relatively resistant sandstone forms the lower portion of the bluff (AECOM 2016). Pleistocene terrace deposits compose the upper portion of the bluff, above an elevation of approximately 8 to 12 feet above mean sea level (AECOM 2016). 	<ul style="list-style-type: none"> The majority of the proposed project would be constructed on a previously developed site and have generally the same footprint as the existing trail system. However, potential impacts could occur associated with the soil removal and tunneling required to construct the tunnel. 	<ul style="list-style-type: none"> Although loss of topsoil from project implementation is not anticipated to be substantial, measures would be adopted in order to minimize the potential impacts to topsoil with implementation (e.g., erosion control and revegetation/planting plan, City review of site grading plan to ensure compliance with code requirements). The proposed project would adhere to all applicable building and seismic codes and regulations, and would therefore not expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death due to severe ground shaking. Due to the nature of the site as described under existing conditions, impacts related to increased slope instability, landslides, or other adverse seismic-induced geologic hazards are not anticipated. Impacts to unique geologic or physical features are not anticipated with construction of the proposed improvements.
Greenhouse Gas Emissions	<ul style="list-style-type: none"> It is assumed that no operational sources are associated with the proposed improvements, therefore only construction impacts are evaluated. The City of Carlsbad adopted a Climate Action Plan (CAP) that outlines actions that the city will undertake to achieve its proportional share of the state Greenhouse gas (GHG) emissions reductions. The CAP is a plan for the reduction of GHG emissions in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15183.5. Pursuant to CEQA 	<ul style="list-style-type: none"> Standard construction equipment would be used and standard emissions controls would be implemented. 	<ul style="list-style-type: none"> The proposed project is expected to be in compliance with the Carlsbad CAP and would not emit at or above the CAP screening threshold of 900 metric tons of CO2 equivalent, as outlined in the CAP Consistency Checklist. Additionally, the project's incremental contribution to a cumulative GHG emissions effect would not be considered cumulatively considerable, because it would comply with the requirements of the CAP.

Carlsbad Trail Connectivity to Tamarack State Beach Feasibility Study – Environmental Constraints Analysis Table

Issue Area	Existing Conditions/Assumptions	Trail Connectivity to Tamarack State Beach	Constraints Summary
Land Use	<p>Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP.</p> <ul style="list-style-type: none"> The proposed project is surrounded by residential development to the northeast, the inlet of Agua Hedionda to the south, and the Pacific Ocean to the west. The proposed project is in the coastal zone and subject to regulations per the California Coastal Act. The proposed project footprint extends to an existing California State Parks parking lot and is located at Tamarack State Beach, which is under State Parks jurisdiction. 	<ul style="list-style-type: none"> The proposed project would comply with applicable land use policies and guidelines. 	<ul style="list-style-type: none"> The proposed project would conform to applicable land use policies and guidelines (e.g. Coastal Act) and appropriate resource agencies would be involved during the permitting process (i.e. California Coastal Commission, California State Parks). The proposed tunnel/ramp system would establish trail connectivity from the North Shore Agua Hedionda Lagoon Trail to Tamarack State Beach. The proposed project would not only enhance east to west connectivity but would also establish ADA compliant ramps at this access location. The proposed improvements would be consistent with existing land use and recreation for the area.
Noise	<ul style="list-style-type: none"> It is assumed that no operational sources are associated with this option, therefore only construction impacts are evaluated. The closest noise sensitive receptors to the proposed project are residential structures 50 feet from the nearest construction boundary. Given the open space and recreational nature of the proposed project site, the public using the beach could be considered a sensitive noise receptor during construction. Carlsbad Boulevard may be closed temporarily to complete construction of the proposed project. It is anticipated this work would be completed at night to avoid peak commute and recreation times during the day. 	<ul style="list-style-type: none"> Noise impacts associated with construction would be temporary, and standard construction equipment would be used. 	<ul style="list-style-type: none"> During construction, noise minimization measures would be implemented and the project would follow the local noise ordinance as detailed in Chapter 8.48, Section 8.48.010, Noise of the City of Carlsbad Municipal Code to the extent possible. If construction work is performed at night to avoid peak commute and recreation times, an exception from the City of Carlsbad would be obtained to complete this work per Section 4.48.020 of the municipal code. While the public using the beach during construction hours may experience higher noise levels anticipated with construction, other portions of the beach where temporary construction noise could be avoided will remain open for use. Residents adjacent to the proposed project area may experience construction noise at night; however, this work would be temporary and limited to short durations. Sound attenuation structures may be implemented to reduce noise as feasible.
Recreation	<ul style="list-style-type: none"> The North Shore Agua Hedionda Lagoon Trail is located east of the proposed project footprint. There are multiple existing access points along this portion of coastline, none of which are currently ADA compliant. Recreational opportunities exist on both sides of Carlsbad Boulevard without connecting access, currently, due to the roadway. 	<ul style="list-style-type: none"> Construction would temporarily interrupt use at the western end of the existing trail system within the lagoon (e.g. the existing steep dirt path on the east side of Carlsbad Boulevard may be closed temporarily during construction). The remainder of the trail system east of the proposed project site would remain open during construction for use. Currently, there is no east-to-west access across Carlsbad Boulevard; the only option is to travel a substantial distance north of the site to cross at the crosswalk at the intersection of Tamarack Avenue and Carlsbad Boulevard. A portion of the State Parks parking lot may be temporarily unavailable during construction including the existing staircase and the end of the trail system to the east would be 	<ul style="list-style-type: none"> Recreation and public access would be temporarily interrupted during construction. Portions of the State Parks parking lot may be temporarily closed to stage equipment; however, a portion of the parking lot would be left open for recreational users. If feasible, proposed project work would be conducted outside of the busy summer season. Post-construction, recreation and access would be enhanced via ADA compliant ramps with access beneath Carlsbad Boulevard, connecting trails and the beach, as well as establishing direct coastal pedestrian access from residential areas located east along the perimeter of the lagoon.

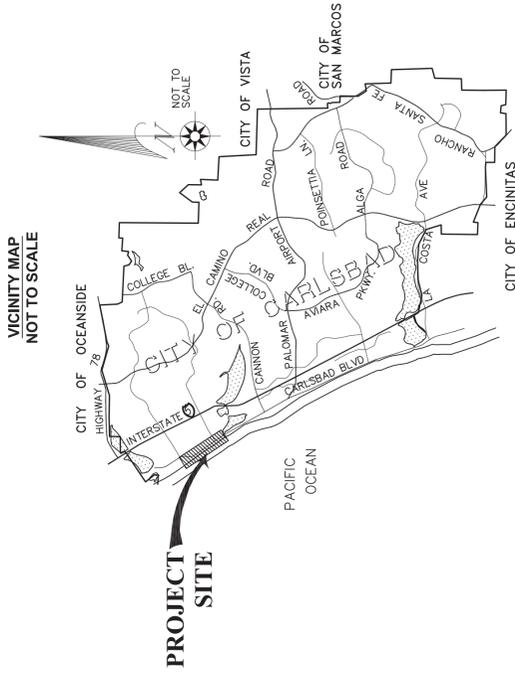
Carlsbad Trail Connectivity to Tamarack State Beach Feasibility Study – Environmental Constraints Analysis Table

Issue Area	Existing Conditions/Assumptions	Trail Connectivity to Tamarack State Beach	Constraints Summary
Sea Level Rise /Storm Damage Vulnerability	<ul style="list-style-type: none"> The proposed improvements are subject to influences from sea level rise and increased wave action from more extreme storm events. The proposed project's vulnerability to coastal hazards, such as flooding and inundation, were evaluated assuming 10-year and 100-year return period wave events over 50 years (GHD 2019). The point of vulnerability would be at the connection between the tunnel and the existing State Parks parking lot, which would be constructed at an elevation of approximately +14' NAVD88, making the western part of the structure vulnerable during: <ul style="list-style-type: none"> 1) a 100-year return period wave event without sea level rise, and; 2) anything greater than a 10-year return period wave event with predictions for sea level rise by year 2068 (GHD 2019). 	<p>temporarily closed, but other access points along the beach and parking lots would remain open.</p> <ul style="list-style-type: none"> To the extent practicable, structures have been designed to provide resilience to coastal hazards, such as flooding and inundation, with the consideration of sea level rise in 50 years. 	<ul style="list-style-type: none"> Due to the vulnerability of the connection point between the tunnel/ramp system and the existing parking lot, infrastructure may be subject to flooding events and/or impacts from large storm events most likely during the winter months. To minimize potential impacts from sea level rise, the City would monitor conditions of the access point and would use gates to close the tunnel if necessary under extreme events when flooding may occur. Closing the tunnel would minimize risk to the public using this access route. Closures would be short in duration and episodic, as flooding events would impact the tunnel during peak periods of the tidal cycle and wave event(s) (GHD 2019).
Transportation/Traffic	<ul style="list-style-type: none"> It is assumed that no operational sources are associated with this option, therefore only construction impacts are evaluated. Increased traffic to the site due to improved access is assumed to be minimal and most likely by existing users or residents using this improved route to access the beach, because the proposed project would create an ADA compliant ramp and safer/more direct pedestrian access. Carlsbad Boulevard may be closed temporarily to complete construction of the proposed project. It is anticipated this work would be completed at night to avoid peak commute and recreation times during the day. 	<ul style="list-style-type: none"> Traffic may be temporarily interrupted during construction. 	<ul style="list-style-type: none"> Measures would be implemented during construction to avoid and/or minimize temporary traffic impacts (e.g., timing of project work, traffic control plan). Temporary closures to Carlsbad Boulevard are not anticipated to increase traffic, as they are designed to avoid the busiest times of the day.

References

AECOM
2016 Geotechnical Investigations Carlsbad Boulevard and Tamarack Avenue Pedestrian Improvements Project.
2018 Cultural Resources Phase I Survey Report for the Carlsbad Boulevard and Tamarack Avenue Improvement Project.
City of Carlsbad
2004 Habitat Management Plan for the Natural Communities in the City of Carlsbad. Available at: <http://www.carlsbadca.gov/civicax/filebank/blobdload.aspx?BlobID=27193>. Accessed August 2016.
2015a General Plan. Available at: <http://www.carlsbadca.gov/services/depts/planning/general.asp>. Accessed July 2019.
2015b General Plan and Climate Action Plan Final Environmental Impact Report. Available at: <http://www.carlsbadca.gov/civicax/filebank/blobdload.aspx?BlobID=28464>. Accessed August 2016.
GHD
2019 Wave Run-up Study, City of Carlsbad ADA Beach and Lagoon Access Feasibility Study.

CONCEPTUAL PLANS FOR: ADA BEACH ACCESS AND TRAIL CONNECTIVITY FEASIBILITY STUDY CITY OF CARLSBAD, CALIFORNIA



CITY COUNCIL
MATT HALL - MAYOR KEITH BLACKBURN - MAYOR PRO-TEM PRIYA BHAT-PATEL - COUNCIL MEMBER CORI SCHUMACHER - COUNCIL MEMBER
PAZ GOMEZ DEPUTY CITY MANAGER, PUBLIC WORKS
GARY BARBERIO DEPUTY CITY MANAGER, COMMUNITY SERVICES

LOCATION MAP
NOT TO SCALE



- SHEET 1 TITLE SHEET
- SHEET 2 KEY MAP
- SHEET 3 PINE AVENUE
- SHEET 4 PHOTO SIMULATION - PINE AVENUE
- SHEET 5 TAMARACK AVENUE
- SHEET 6 PHOTO SIMULATION - TAMARACK AVENUE
- SHEET 7 TAMARACK PARKING ACCESS
- SHEET 8 COLD WATER TUNNEL
- SHEET 9 PHOTO SIMULATION - COLD WATER TUNNEL
- SHEET 10 DESIGN CHARACTER
- SHEET 11 PLANT MATERIAL

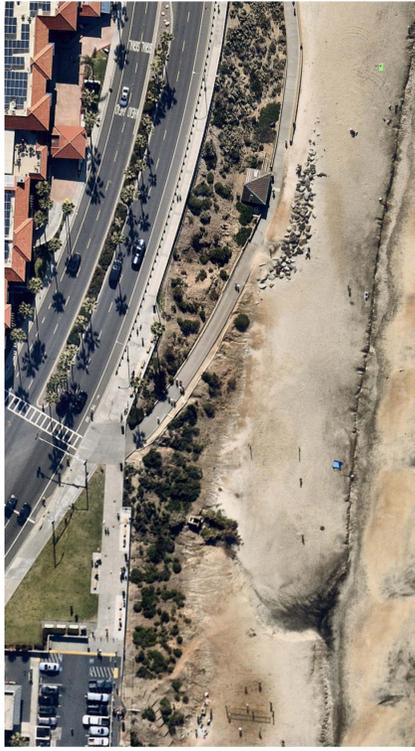
ADA BEACH & TRAIL CONNECTIVITY

Feasibility Study
Carlsbad, California

SDG Project Number: 18-106
Date: January 23, 2020



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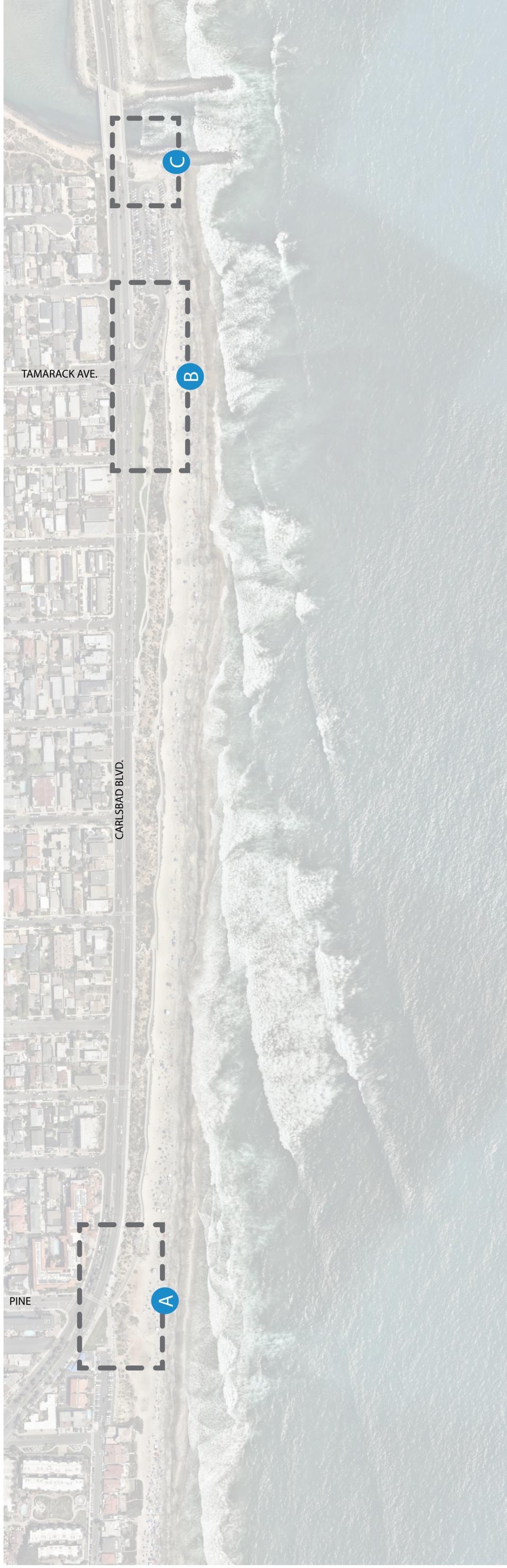
A PINE AVENUE



B TAMARACK STATE BEACH



C COLD WATER TUNNEL



ADA BEACH & TRAIL CONNECTIVITY

Feasibility Study
Carlsbad, California
SDG Project Number: 18-106
Date: January 23, 2020

Key Map



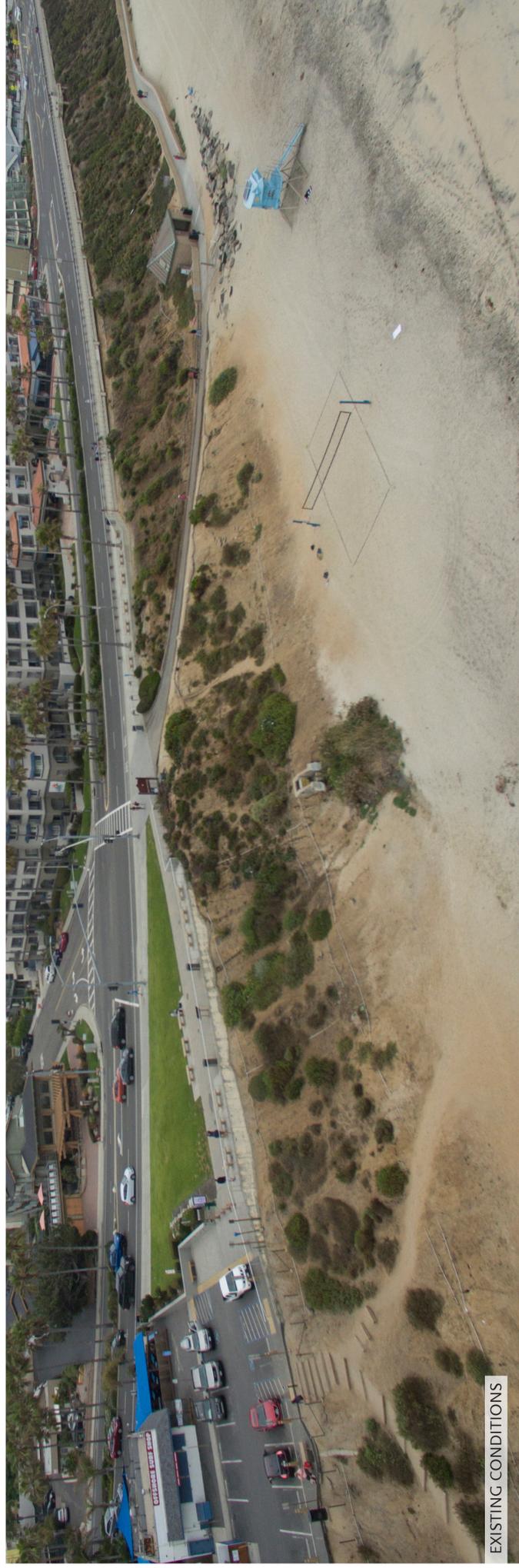
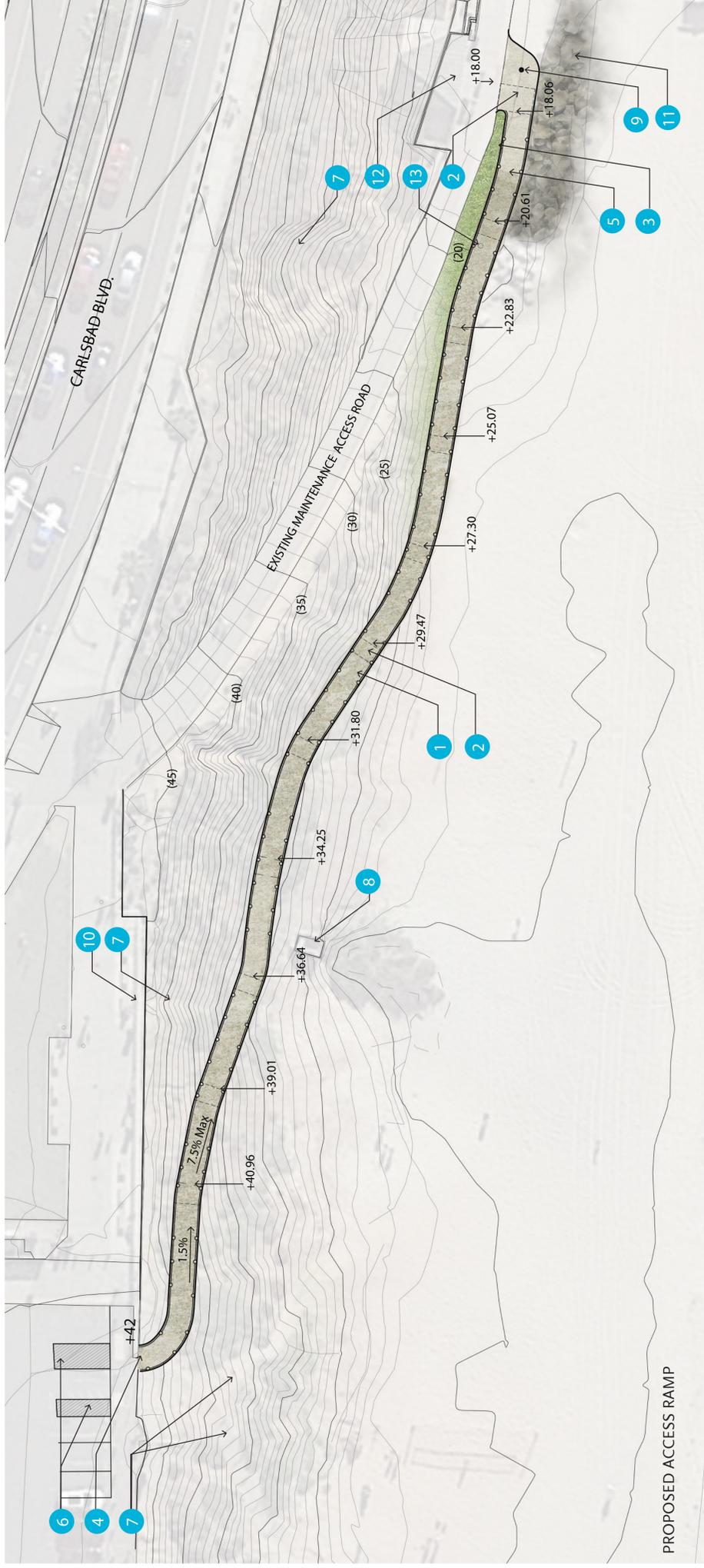
NTS

CHEN + RYAN



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GROUP**

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ADA BEACH & TRAIL CONNECTIVITY

Feasibility Study
 Carlsbad, California
 SDG Project Number: 18-106
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Pine Avenue

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KEY

- 1 PROPOSED 8'-0" RAMP WITH HANDRAILING
- 2 2% MAX. LANDINGS; TYPICAL
- 3 PROPOSED PLANTING AREA; TYPICAL
- 4 START OF ELEVATED ACCESSIBLE PATH ON STRUCTURAL COLUMNS
- 5 END OF ELEVATED ACCESSIBLE PATH ON STRUCTURAL COLUMNS. PATH CONTINUES AT GRADE TO THE SOUTH
- 6 EXISTING ADA ACCESSIBLE PARKING
- 7 EXISTING BLUFF & TRAILS TO REMAIN; REPAIR AS NEEDED
- 8 EXISTING STORM DRAIN
- 9 PROPOSED LOCATION FOR RELOCATED SHOWER
- 10 EXISTING SIDEWALK
- 11 EXISTING RIP RAP
- 12 EXISTING RESTROOM
- 13 EXISTING SHOWER TO BE RELOCATED



ADA BEACH & TRAIL CONNECTIVITY

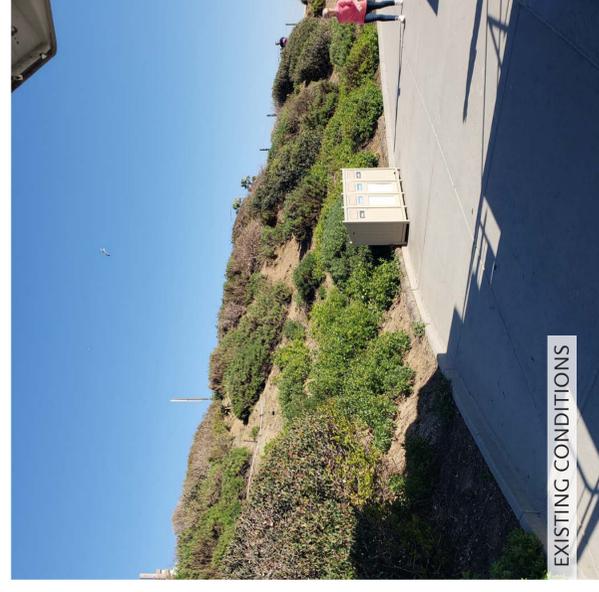
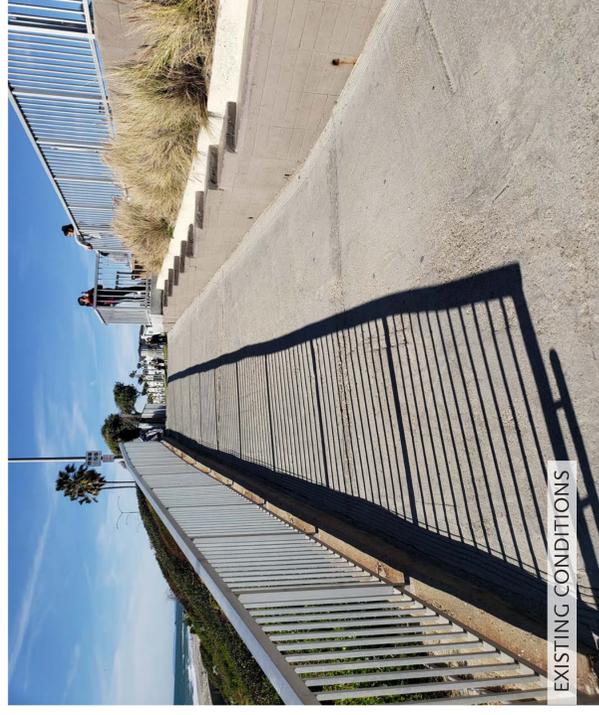
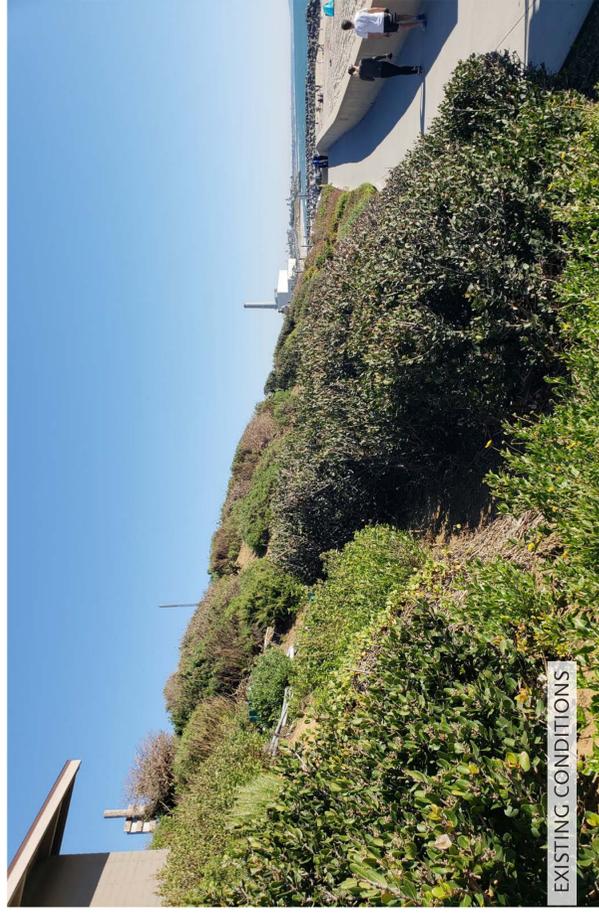
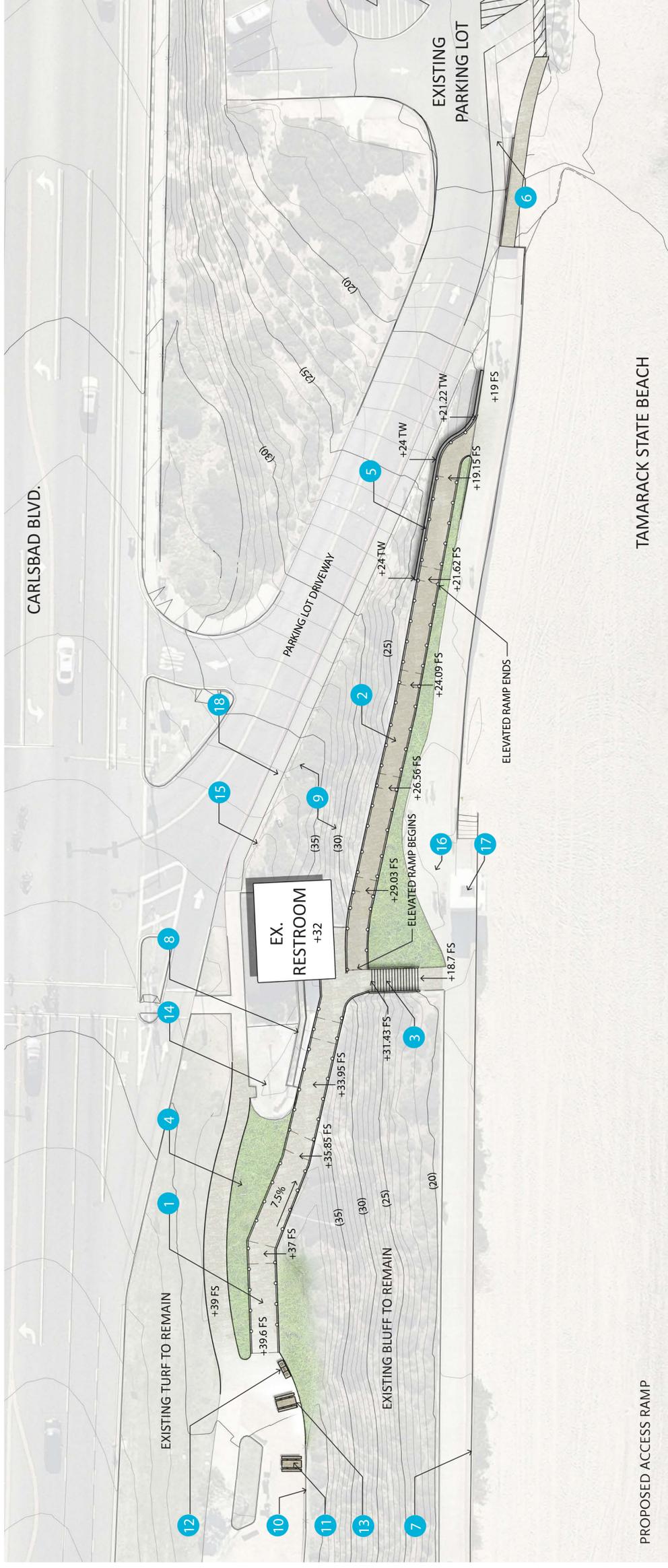
Feasibility Study
Carlsbad, California

SDG Project Number: 18-106
Date: January 23, 2020

Photo Simulation
Pine Avenue Access



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KEY

- 1 PROPOSED 8'-0" WIDE CONCRETE RAMP WITH HANDRAILING
- 2 PROPOSED 8' ELEVATED WOOD RAMP ON STRUCTURAL COLUMNS
- 3 PROPOSED STAIRCASE
- 4 PROPOSED PLANTING AREA; TYPICAL
- 5 PROPOSED RETAINING WALL
- 6 PROPOSED ACCESSIBLE PATH TO PARKING LOT
- 7 EXISTING SEAWALL
- 8 EXISTING RETAINING WALL
- 9 EXISTING PLANTING AREA
- 10 EXISTING GUARDRAILING
- 11 RELOCATE EXISTING PICNIC TABLE
- 12 RELOCATE EXISTING TRASH RECEPTACLES
- 13 EXISTING PICNIC TABLE
- 14 EXISTING SHOWERS AND PLAZA
- 15 EXISTING FENCE
- 16 EXISTING PAVING
- 17 EXISTING LIFEGUARD TOWER
- 18 EXISTING AC SIDEWALK

ADA BEACH & TRAIL CONNECTIVITY

Feasibility Study

Carlsbad, California

SDG Project Number: 18-106

Date: January 23, 2020

Tamarack Beach Access

SCALE: 1" = 20'-0"

CHEN + RYAN

City of Carlsbad



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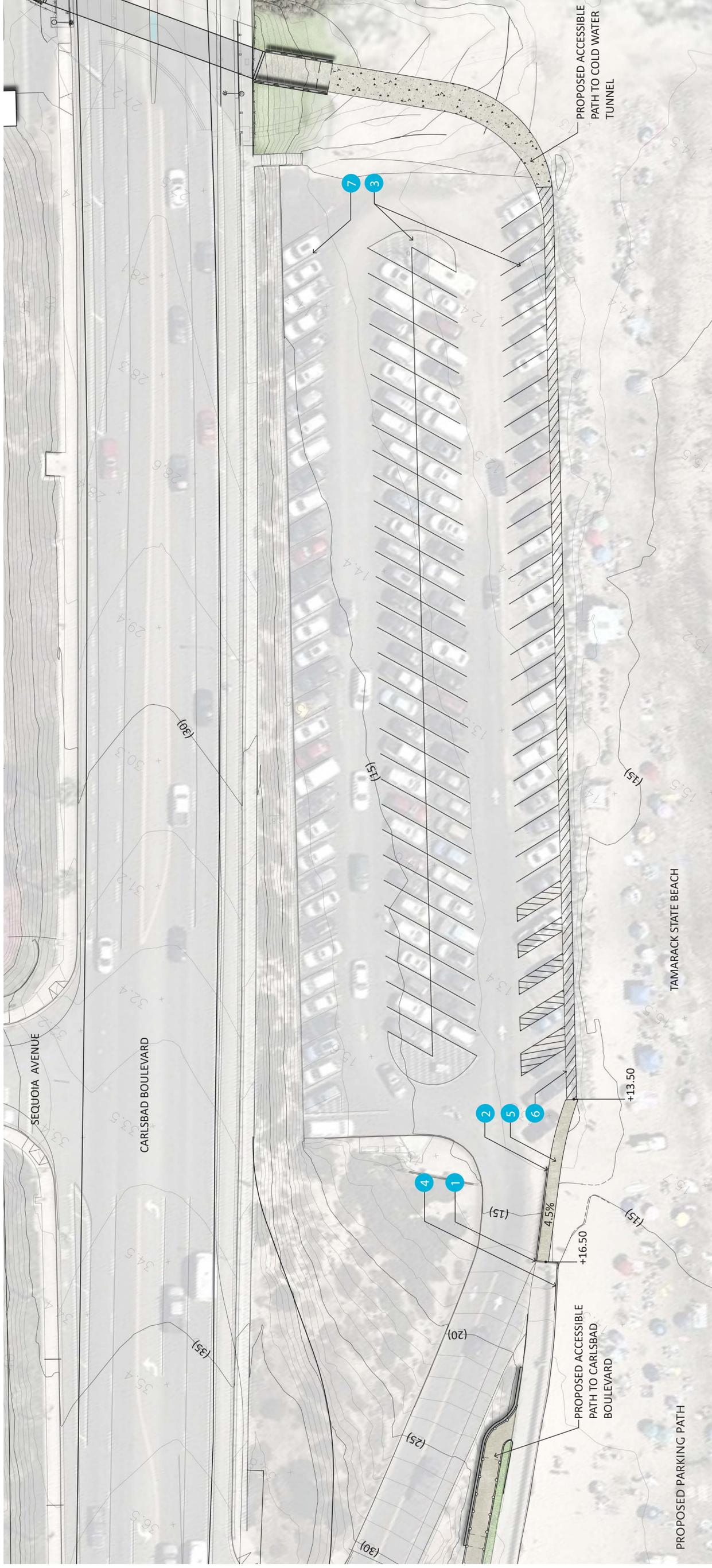


ADA BEACH & TRAIL CONNECTIVITY

Feasibility Study
Carlsbad, California
SDG Project Number: 18-106
Date: January 23, 2020

Photo Simulation
Tamarack Beach Access





KEY

- 1 DEMO 5'-0" OF EXISTING SEA WALL
- 2 EXISTING CURB TO REMAIN
- 3 RESTRIPE EXISTING PARKING STALLS
- 4 EXISTING SEA WALL
- 5 PROPOSED 5'-0" CONCRETE WALKWAY
- 6 PROPOSED ACCESSIBLE STRIPING
- 7 EXISTING PARKING STRIPING TO REMAIN
- 8 EXISTING SAND TO BE REMOVED AT NEW WALKWAY

ADA BEACH & TRAIL CONNECTIVITY

Feasibility Study
Carlsbad, California
SDG Project Number: 18-106
Date: January 23, 2020

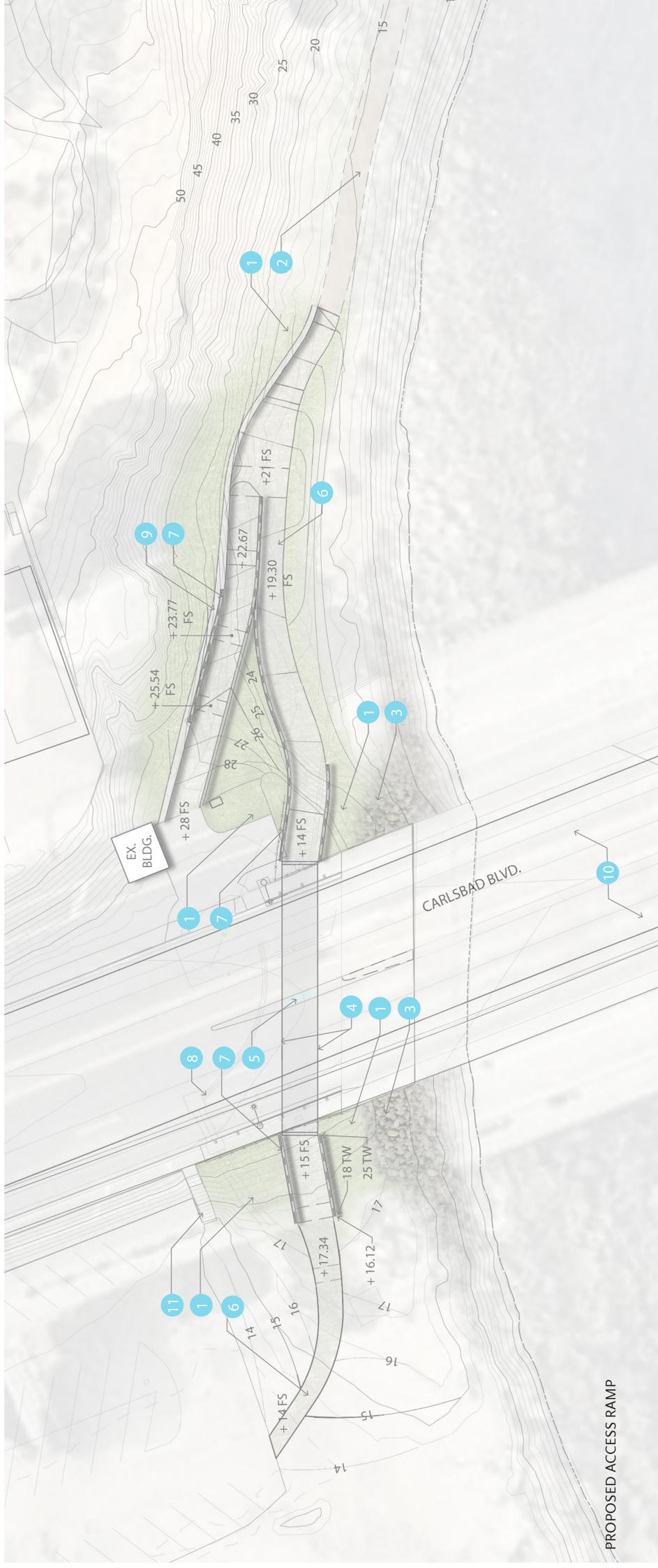
Tamarack Parking Access



CHEN RYAN



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KEY

- 1 PROPOSED PLANTING AREA; TYPICAL
- 2 EXISTING AGUA HEDIONDA TRAIL - REPAIR AS NEEDED
- 3 EXISTING RIP RAP
- 4 LIMITS OF PROPOSED BOX CULVERT UNDER ROAD
- 5 PROPOSED SKYLIGHT OPENING IN MEDIAN
- 6 PROPOSED 8'-0" INTEGRAL COLOR CONCRETE ADA RAMP
- 7 PROPOSED RETAINING WALLS & HANDRAILS
- 8 PROPOSED 18" RCP STORM DRAIN
- 9 PROPOSED CONCRETE "V" GUTTER
- 10 EXISTING BRIDGE
- 11 EXISTING STAIRCASE



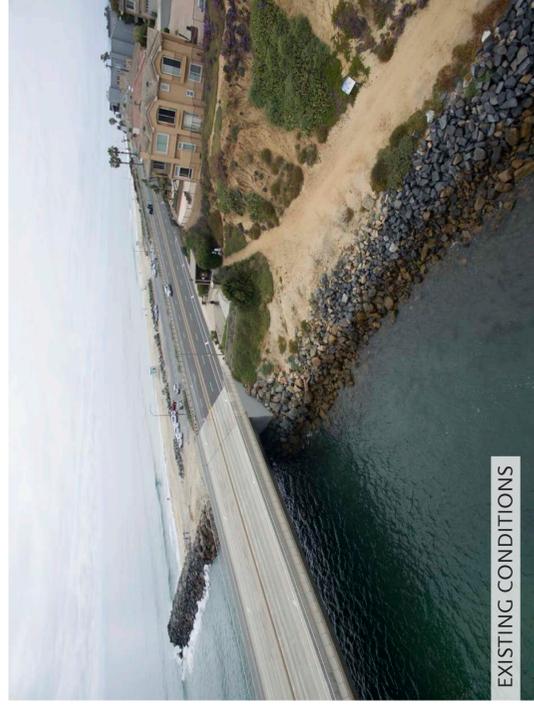
EXISTING CONDITIONS



EXISTING CONDITIONS



EXISTING CONDITIONS



EXISTING CONDITIONS

ADA BEACH & TRAIL CONNECTIVITY

Feasibility Study

Carlsbad, California

SDG Project Number: 18-106

Date: January 23, 2020

Cold Water Tunnel



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ADA BEACH & TRAIL CONNECTIVITY

Feasibility Study
Carlsbad, California

SDG Project Number: 18-106
Date: January 23, 2020

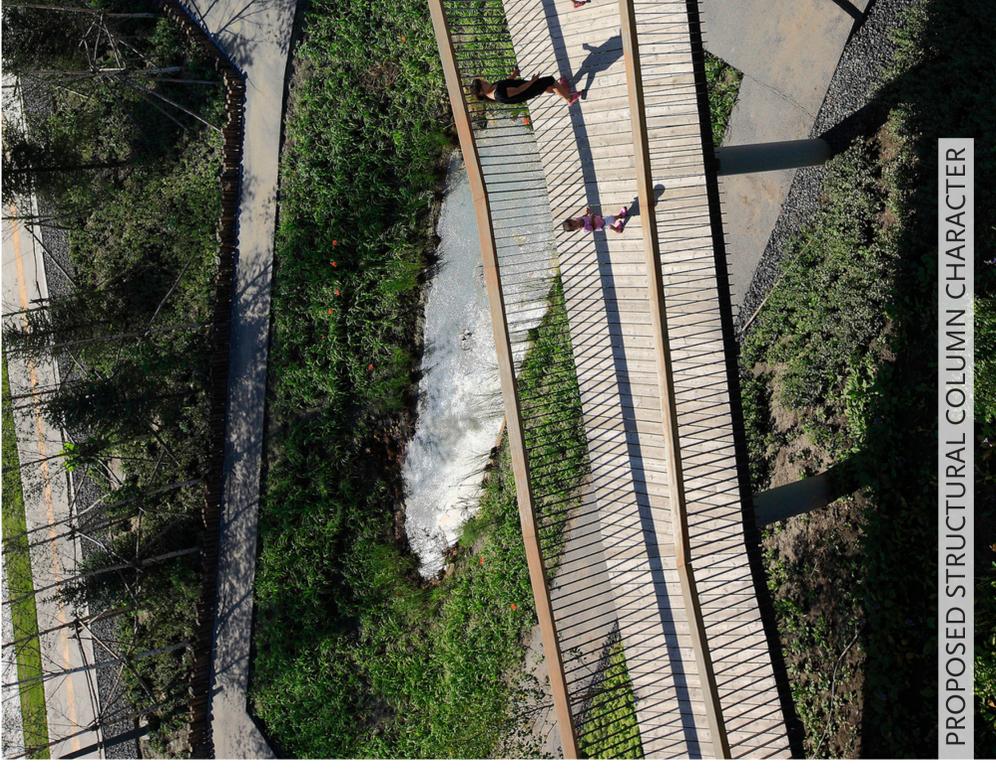
Photo Simulation
Cold Water Tunnel Access



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PROPOSED ELEVATED CONCRETE PLANK SURFACE WITH GUARDRAILING CHARACTER



PROPOSED STRUCTURAL COLUMN CHARACTER



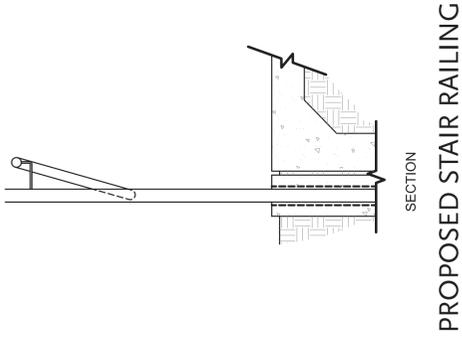
PROPOSED HANDRAIL CHARACTER



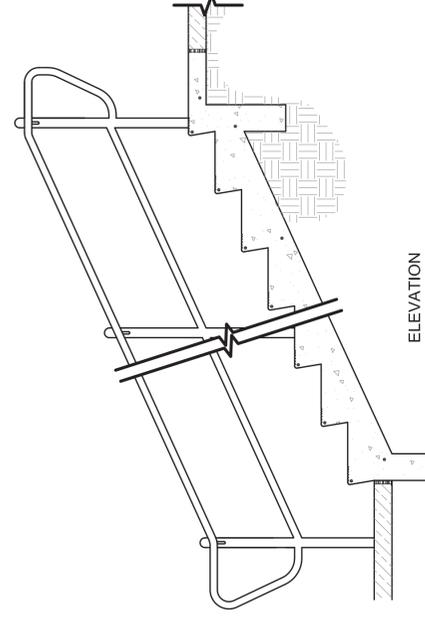
PROPOSED CONCRETE PLANK CHARACTER



PROPOSED RETAINING WALL TEXTURE



SECTION PROPOSED STAIR RAILING



ELEVATION

PROPOSED STAIR RAILING



PROPOSED LIGHTING INTEGRATED WITH HANDRAIL



PROPOSED WALL LIGHTING CHARACTER

ADA BEACH & TRAIL CONNECTIVITY

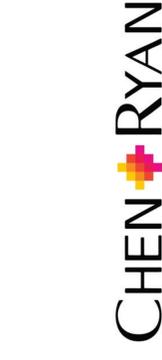
Feasibility Study

Carlsbad, California

SDG Project Number: 18-106

Date: January 23, 2020

Design Character



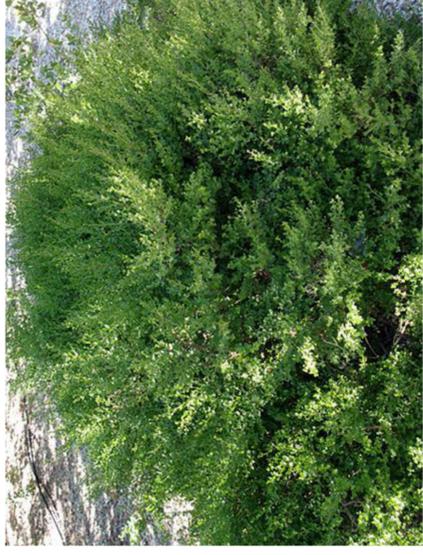
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COASTAL AGAVE
Agave shawii



MANZANITA
Arctostaphylos x 'Howard McMinn'



DWARF COYOTE BUSH
Baccharis p. 'Pigeon Point'



WILD LILAC
Ceanothus maritimus



SEA DAHLIA
Coreopsis maritima



CHALK LIVEFOREVER
Dudleya pulverulenta



SEASIDE DAISY
Erigeron g. 'Wayne Roderick'



SANTA CRUZ ISLAND BUCKWHEAT
Erigeronum arborescens



RED BUCKWHEAT
Erigeronum grande rubescens



BEACH STRAWBERRY
Fragaria chiloensis



ISLAND SNAPDRAGON
Galvezia speciosa



COASTAL GUM PLANT
Grindelia stricta



ARTEMISIA CALIFORNICA
California Sagebrush



ISLAND SHRUB MALLOW
Lavatera assurgentiflora



COASTAL ENCELIA
Encelia californica

ADA BEACH & TRAIL CONNECTIVITY

Feasibility Study

Carlsbad, California

SDG Project Number: 18-106

Date: January 23, 2020

Plant Material



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CITY COUNCIL
Staff Report

Meeting Date: July 24, 2018

To: Mayor and City Council

From: Kevin Crawford, City Manager

Staff Contact: Craig Williams, Senior Engineer
craig.williams@carlsbadca.gov or 760-826-9523

Subject: Professional Services Agreement with Chen Ryan Associates, Inc. for the preparation of a feasibility study in an amount not to exceed \$199,836 for the Trail Connectivity to Tamarack State Beach and the Americans with Disabilities Act (ADA) Beach Access Study Projects.

Recommended Action

Adopt a Resolution authorizing the execution of a Professional Services Agreement with Chen Ryan Associates, Inc. for the preparation of a feasibility study in an amount not to exceed \$199,836 for the Trail Connectivity to Tamarack State Beach, Project No. 4063, and the ADA Beach Access Study, Project No. 6065 (Projects).

Executive Summary

Staff recommends that the City Council authorize the execution of a Professional Services Agreement (Agreement) for the preparation of a feasibility study (Study) for the Projects. The Study will examine the feasibility of constructing ADA accessible ramps from Carlsbad Boulevard down to the beach, as well as the feasibility of a trail connection from the Agua Hedionda North Shore Hubbs Trail along Agua Hedionda Lagoon to the beach. Carlsbad Municipal Code Section 3.28.060 requires that the City Council shall be the awarding authority for procurement of professional services when the value exceeds \$100,000. This Agreement is subject to this requirement.

Discussion

One of the Project sites is located along Carlsbad Boulevard and the coastline, from Pine Avenue to the Cold Water Inlet Bridge (Bridge) south of Tamarack Avenue. The consultant will study the feasibility of constructing ADA accessible pedestrian walkways and ramps at one or more locations along this segment, connecting the walkway along Carlsbad Boulevard down to the seawall and beach. In addition, the consultant will study the feasibility of constructing a trail connection from the Agua Hedionda North Shore Hubbs Trail (Trail) along the north side of the Agua Hedionda Lagoon under or across Carlsbad Boulevard to the beach. The study will evaluate the feasibility of both undercrossing and at-grade solutions. Aesthetics, functionality, environmental impact and cost will all be factors in the consideration of the potential options.

On Dec. 28, 2017, the city issued a request for Statements of Qualifications (SOQ) for professional services to prepare the study for the Projects. On Feb. 1, 2018, three SOQ's were received and a selection committee composed of city staff reviewed and evaluated the

submittals. The SOQ's were evaluated on the quality of each consultant's experience, performance of similar work, ability to provide the services, project approach and cost.

Based on a review of the SOQ's and the negotiation of an acceptable scope of work and fee, in accordance with the city's Purchasing Policies and Procedures Manual and Carlsbad Municipal Code Section 3.28.060(A), staff recommends executing the Agreement with Chen Ryan Associates, Inc. in an amount not to exceed \$199,836.

Fiscal Analysis

The Study will examine the feasibility of both Projects and will therefore be utilizing the General Capital Construction funds previously appropriated for Project Nos. 4063 and 6065. The available funds and estimated costs for the Study are shown in the following table:

TRAIL CONNECTIVITY TO TAMARACK STATE BEACH AND THE ADA BEACH ACCESS STUDY PROJECT NOS. 4063 AND 6065	
Current Appropriation– General Capital Construction Fund No. 40631	\$200,000
Current Expenditures/Encumbrances	\$47,824
TOTAL AVAILABLE FUNDS, PROJECT NO. 4063	\$152,176
Current Appropriation -- General Capital Construction Fund No. 60651	\$75,000
Current Expenditures/Encumbrances	\$0
TOTAL AVAILABLE FUNDS, PROJECT NO. 6065	\$75,000
TOTAL AVAILABLE FUNDS, PROJECT NOS. 4063 + 6065	\$227,176
Professional Services Agreement – Chen Ryan Associates, Inc.	\$199,836
Project Management – City Staff (estimated)	\$20,000
ESTIMATED PROJECT COST	\$219,836
REMAINING BALANCE AFTER PROJECT NOS. 4063 AND 6065	\$7,340
ADDITIONAL APPROPRIATION NEEDED	\$0

Next Steps

Staff will work with Chen Ryan Associates, Inc. to prepare the Study over the next 12 months. Staff will return to the City Council for approval of the Study, which will then be used to develop specific Project requests for inclusion in the city's Capital Improvement Program.

Environmental Evaluation (CEQA)

Approving an agreement for the preparation of a feasibility study for possible future actions, which the city has not yet approved, is statutorily exempt from the California Environmental Quality Act (CEQA) under CEQA Guidelines 15262 (Feasibility and Planning Studies).

Public Notification

This item was noticed in accordance with the Ralph M. Brown act and was available for public viewing and review at least 72 hours prior to the scheduled meeting date.

Exhibits

1. City Council Resolution.
2. Location Map.

RESOLUTION NO. 2018-144

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CARLSBAD, CALIFORNIA, AUTHORIZING THE EXECUTION OF A PROFESSIONAL SERVICES AGREEMENT WITH CHEN RYAN ASSOCIATES, INC. FOR THE PREPARATION OF A FEASIBILITY STUDY IN AN AMOUNT NOT TO EXCEED \$199,836 FOR THE TRAIL CONNECTIVITY TO TAMARACK STATE BEACH, PROJECT NO. 4063, AND THE ADA BEACH ACCESS STUDY, PROJECT NO. 6065.

WHEREAS, the City Council of the City of Carlsbad, California has determined that it is necessary and in the public interest to prepare the Feasibility Study for the Trail Connectivity to Tamarack State Beach, Project No. 4063, and the ADA Beach Access Study, Project No. 6065 (Projects); and

WHEREAS, under Carlsbad Municipal Code Section 3.28.060, the Public Works Department solicited Statements of Qualifications (SOQs) from consultants for the preparation of a Feasibility Study for the Project and received a total of three submittals from qualified consulting firms; and

WHEREAS, subsequent to a review of the SOQs, Chen Ryan Associates, Inc. has been identified as the most qualified consultant for the preparation of the Feasibility Study for the Projects; and

WHEREAS, city staff and Chen Ryan Associates, Inc. have negotiated the scope of work and fee not to exceed \$199,836 to provide the professional services; and

WHEREAS, funding for the Projects is available in the General Capital Construction Funds.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Carlsbad, California, as follows:

1. That the above recitations are true and correct.
2. That the mayor is authorized and directed to execute the Professional Services Agreement with Chen Ryan Associates, Inc. in an amount not to exceed \$199,836 to prepare the Feasibility Study for the Trail Connectivity to Tamarack State Beach, Project No. 4063, and the ADA Beach Access Study, Project No. 6065, which is attached hereto as Attachment A.

PASSED, APPROVED AND ADOPTED at a Regular Meeting of the City Council of the City of Carlsbad on the 24th day of July, 2018, by the following vote, to wit:

AYES: M. Hall, K. Blackburn, M. Schumacher, C. Schumacher, M. Packard.

NOES: None.

ABSENT: None.



MATT HALL, Mayor



BARBARA ENGLESON, City Clerk

(SEAL)



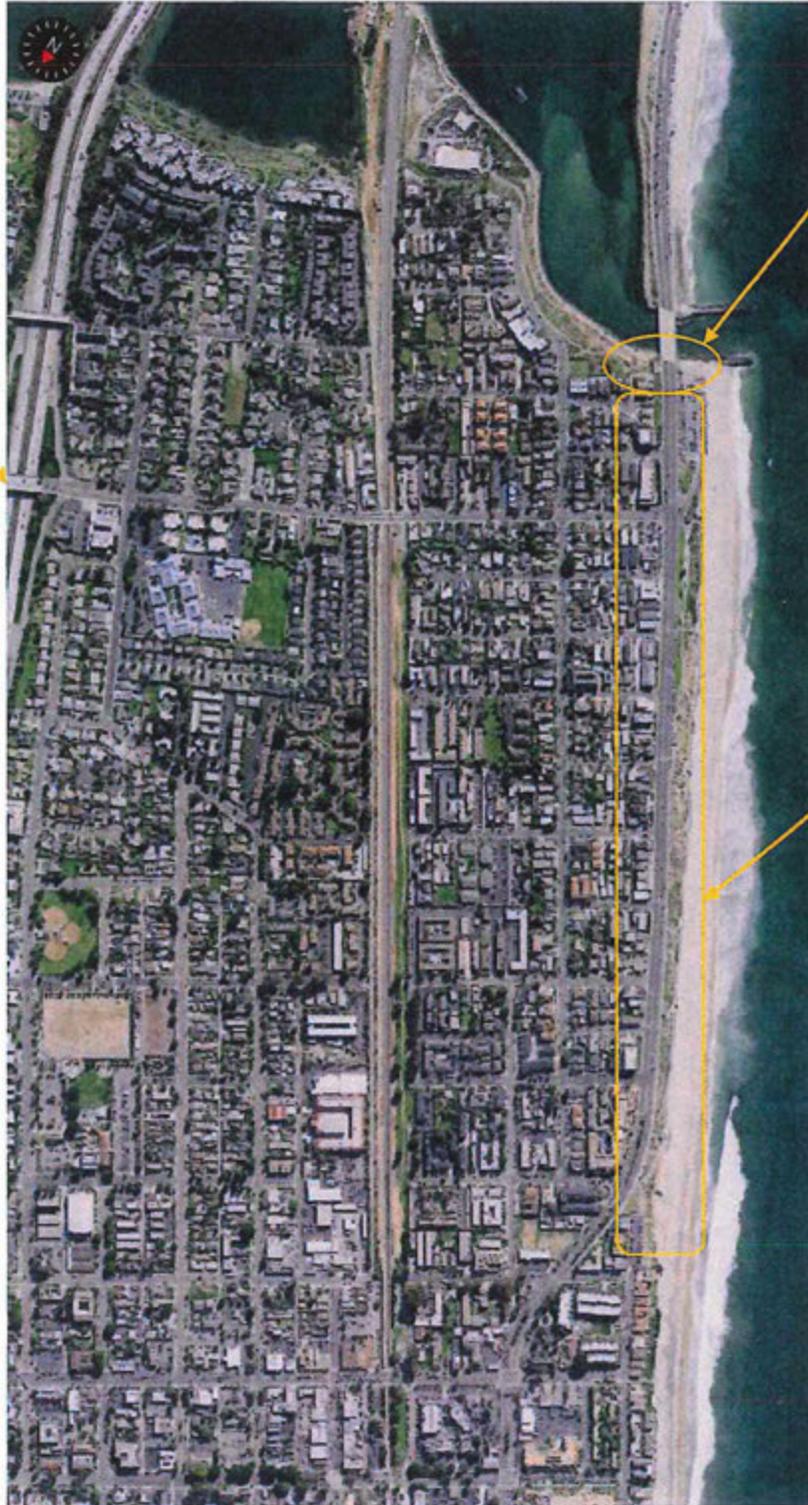


ADA Beach Access Project #6065

Trail Connectivity to Tamarack State Beach Project #4063

Exhibit 2a

Tamarack



I-5

Coaster

Carlsbad
Blvd

ADA Beach Access Project #6065

Trail Connectivity to Tamarack State Beach Project #4063

Exhibit 2b

January 20, 2020

City of Carlsbad ADA Beach & Lagoon Access Feasibility Study – Conceptual Plans

- [Responses to Comments Received from CA Coastal Commission Staff on Nov. 8, 2019](#)

Pine Avenue Ramp:

- This ramp raises significant questions about vulnerability to coastal hazards. How long until the ramp is subject to wave action and then what happens once it is threatened?
 - **The proposed ramp is designed to go over the top of the existing rip-rap. This design approach will help to mitigate vulnerability to coastal hazards.**
- Given that this ramp seems to be located in a more exposed location than the Tamarack ramp, is it necessary? Why not just the Tamarack ramp? Will this ramp require any change to the existing rip rap at the end of the seawall/promenade?
 - **As part of the feasibility evaluation, a stakeholder group was developed consisting of wheelchair bound Carlsbad residents. Most of these residents live in Carlsbad's Village area because the neighborhood is relatively flat and various services are available (i.e. drugstores, grocery stores, etc.) This stakeholder group unanimously selected the Pine Avenue location as their highest priority location due to proximity to where they live. In addition, as part of the feasibility study a pedestrian activity analysis was performed for this project and the results showed that the existing Pine Avenue Access Ramp had a total daily pedestrian volume of 5,720, with a peak hour volume of 536 counts. This represented the highest pedestrian volume compared to the other access points along the bluff. These two factors make the Pine Avenue ramp location the highest priority location for the city.**

The proposed ramp may require minor changes to the existing rip rap adjacent to the existing shower. This will be determined during final design with a focus on minimizing the changes to the existing rip rap. The project does not intend to add any new rip rap and will only re-position pieces that are absolutely necessary. Based on the current design, approximately two pieces would need to be repositioned. The proposed ramp is designed to go over the top of the existing rip-rap. This may allow the project to protect all existing rip rap in place.

- Could the ramp be shorter? I see that it starts adjacent to the accessible parking stall in the Oak Street parking lot, but could it be shortened and connect to the bluff top walkway farther downcoast?
 - **Per the U.S. Access Board, the maximum rise for any ramp with a slope greater than 5% shall be 30-inches (2.5-feet). For ramps with rises greater than 30-inches, a 5' x 5' flat landing is required after each 30-inch rise. The elevation difference between the beach and the top of the bluffs is approximately 24-feet. Based on ADA standards, this difference in height requires approximately 9 landings. In order to meet ADA requirements, the ramp cannot become shorter.**
- Can the Viewing Deck be eliminated? There are already benches on either side of the proposed viewing deck/entrance to the ramp.

- **Yes, we will revise the conceptual design to remove the viewing deck at Pine Avenue. We will also reflect this change in the associated text of the feasibility report.**
- Why is 10ft the appropriate width? The proposed wood ramp down to Tamarack State Beach is 8ft wide. Why the difference? Does a narrower ramp change the footprint necessary for the support columns? What is the minimum width required for ADA access?
 - **We are willing to revise the width of the ramp to be 8 feet wide. This change will mean a smaller footprint for the support columns. Per the U.S. Access Board, the minimum passing space for an accessible route is 60-inches (5-feet). However, based on the pedestrian volumes (nearly 5,000/day) and the fact that users will have wheelchairs, strollers, surfboards, coolers, beach umbrellas, etc., we feel that 8 feet should be the minimum width for this ramp.**
- It's hard to see on the visual simulation, but it looks like the ramp extends out onto flat sand area – does it? If so, how much (sq. ft.) of existing sandy beach area would be impacted?
 - **Yes, the ramp does extend onto the flat sand area. Approximately 200 SF of sand will be impacted. The proposed ramp is designed to go over the top of the existing rip-rap to minimize the amount of sand that would be impacted.**
- Is the path beyond the end of the ramp (see 5 on sheet 3) concrete? Just sand? Will there be any curb, railing, etc. along that portion?
 - **Yes, the conceptual design proposes concrete for the at-grade path beyond the end of the ramp to tie-in to the concrete adjacent to the existing restroom. There is no curb, railing, etc. currently proposed for this at-grade concrete path. The proposed ramp is designed to go over the top of the existing rip-rap to minimize the amount of sand that would be impacted.**
- How does the ramp affect vegetation on the slope? If native habitat requiring mitigation would be impacted, can the mitigation requirement be met onsite? Will loss of existing vegetation affect stability of the slope at all?
 - **The proposed ramp will affect some native vegetation on the slope. As part of the feasibility evaluation, a habitat value assessment was completed along the bluffs and was mapped from the north end of the parking lot (north of Pine Avenue) to the Cold-Water Inlet (south of Tamarack Avenue). The area where the Pine Avenue ramp is proposed is approximately 75% unvegetated and would be less impactful than locating the ramp in other vegetated areas within the study area.**

The vegetation that will be affected is the native vegetation located directly beneath the ramp footprint and its shade footprint (to a lesser degree). Impacted native vegetation will be mitigated on-site, adjacent to the proposed ramp. There will be no net loss of native vegetation resulting from the project.

The loss of vegetation is not anticipated to affect the stability of the slope. The ramp has been designed to have the piers pile driven into the bluff. This reduces the footprint of soil disturbance while maintaining structural integrity of the bluff. As part of the feasibility evaluation, a geotechnical engineer reviewed the proposed design and concluded that “since the proposed pile supports are entirely in the bluffs, putting it in formational soil (Terrace Deposits), liquefaction would not be an issue.”

- Where would existing showers be relocated to? (see 9 on Sheet 3) What is the extent of work required to achieve that (additional paved area, relocation of water line, new drainage)?
 - **The showers would be relocated approximately 55 feet to the south. The extent of work would include removal of existing paved area, replacement with new paved area, waterline relocation, and potentially a new sewer connection.**

Tamarack Beach Ramp:

- How wide is the existing ramp to the restroom? Would the proposed concrete ramp be moving any further seaward on the bluff than what is out there now?
 - **The existing ramp width to the restroom is 10-feet. The proposed design of this ramp will have no change to the location of the western edge of the ramp. The ramp would only be replacing / improving what is currently there today, and not extend seaward.**
- Why is 10ft the appropriate width for the concrete ramp (see 1 on sheet 5)? The wooden portion of the ramp is only 8ft wide. What is the minimum width required for an ADA ramp?
 - **The 10-foot ramp is the existing ramp width; the proposed design makes the ramp ADA compliant (the existing ramp is too steep) but does not change the existing ramp alignment or width and intends to keep the 10-foot width. See above for minimum ADA requirements. The ramp that extends south of the restroom is proposed to be 8 feet wide.**
- Is there any change in the footprint of the stairs (see 3 on sheet 5)?
 - **The proposed design will require no change to the footprint of the stairs.**
- How does the ramp affect vegetation on the slope? If native habitat requiring mitigation would be impacted, can the mitigation requirement be met onsite? Will loss of existing vegetation affect stability of the slope at all?
 - **The proposed ramp will affect native vegetation on the slope. As part of the feasibility evaluation, a habitat value assessment was completed along the bluffs was mapped from the north end of the parking lot (north of Pine Avenue) to the Cold-Water Inlet (south of Tamarack Avenue). The area where the Tamarack Avenue ramp is proposed was considered to be of high value.**

The native vegetation that will be affected is the vegetation located directly beneath the ramp footprint and its shade footprint (to a lesser degree). Impacted native vegetation will be mitigated in the area on the east side of the access drive into the Tamarack State Beach parking lot.

As stated above, the loss of vegetation is not anticipated to affect the stability of the slope. The ramp has been designed to have the piers pile driven into the bluff. This reduces the footprint of soil disturbance while maintain structural integrity of the bluff. As part of the feasibility evaluation, a geotechnical engineer reviewed the proposed design and concluded that “since the proposed pile supports are entirely in the bluffs, putting it in formational soil (Terrace Deposits), liquefaction would not be an issue.”

- Does the proposed accessible path to the parking lot (see 6 on sheet 5) extend concrete seaward of the existing limits of the parking lot? If so, why is it necessary? How much (sq. ft.) of sand area would be impacted? Can that be accommodated within the existing parking lot? Will there be any curb or railing along that portion?
 - **This accessible path is actually part of the Cold-Water Tunnel project, not the Tamarack ADA ramp project. The accessible path would extend some concrete seaward (approximately 350 SF). This path is necessary to allow for ADA access from the bottom of the ramp/end of the lower sea wall to the sand. Currently, there is no ADA accessible path of travel from the end of the lower sea wall to the sand. A railing may be appropriate for this short ramp. The idea is to extend an ADA path of travel to the proposed Cold-Water Tunnel (see sheet 7 of the conceptual plan set).**

Cold Water Tunnel:

- Why is ADA access to the lagoon trail necessary? The lagoon trail is not currently paved, and these conceptual plans do not improve the entire length of the lagoon trail. Is the lagoon trail currently ADA accessible? Any plans to improve the lagoon trail for ADA access?
 - **The primary goal of this project is to provide trail connectivity between the lagoon trail and the beach, not for ADA access. However, any new connection should be built to meet ADA requirements. The proposed tunnel allows for a direct connection (under Carlsbad Boulevard) between the beach and the lagoon trail. This will create new access for the many beach users to the lagoon, enhancing the value of the lagoon as a natural resource. The lagoon trail is not currently ADA accessible. The lagoon trail is maintained by the Agua Hedionda Lagoon Foundation. Any future improvements to the lagoon trail would be carried out by the Foundation.**
- If ADA access is required from the beach lot to the lagoon trail, why isn't the Tamarack ramp to Carlsbad Blvd and then crossing at the proposed crosswalk sufficient?
 - **The suggested connection is circuitous and would require a pedestrian to walk 1600 feet from the middle of the Tamarack State Beach parking lot, compared to 600 feet utilizing the proposed tunnel. The suggested connection includes some large grade changes, making it difficult for the certain segments of the population. The suggested connection also requires two street crossings at high vehicular traffic volume locations. The suggested connection will not allow for ADA access to the trail unless the ramp from Carlsbad Boulevard, down to the trail is constructed. The proposed tunnel provides vehicle-free access to and from the beach and the lagoon trail. The proposed crosswalk is actually part of a separate City project (Tamarack and Carlsbad Boulevard Pedestrian and Bicycle Enhancements project). Ultimately, this pedestrian crossing may or may not be built by that project. We will remove this crosswalk from the conceptual plans. If this proposed crosswalk is constructed it will provide a more convenient way for people on the west side of Carlsbad Boulevard to access the trail, but it will not help the mobility challenged population who are at the beach get up to the west side of Carlsbad Boulevard or get down from Carlsbad Boulevard to the trail.**

- Would the proposed crosswalk be signalized?
 - **As stated above, the proposed crosswalk is actually part of a separate City project (Tamarack and Carlsbad Boulevard Pedestrian and Bicycle Enhancements project). Ultimately, this pedestrian crossing may or may not be built by that project. We will remove this crosswalk from the conceptual plans.**
- On the lagoon side, are two ramps necessary? Why not leave the access up to Carlsbad Blvd in its current condition (no stairs, no paving)?
 - **The two ramps allow ADA access for crossing under the boulevard. One ramp allows access under the boulevard and the other ramp provides access from Carlsbad Boulevard. Although not the focus of the project, the project team felt it was appropriate to provide ADA access from Carlsbad Boulevard to the trail to give the mobility challenged population an alternative for trail access.**
- How wide is the proposed box culvert (see 4 on sheet 7) and the proposed concrete ADA ramp (see 6 on sheet 7)? What is the minimum width required for ADA access?
 - **The width of the proposed box culvert is 12-feet. This is a typical minimum width for this type of undercrossing (i.e. Coaster undercrossing in Encinitas) The width for the proposed concrete ADA ramp will be 8-feet. The minimum passing space clear width for the proposed ramp design is 60-inches (5-feet) per the U.S. Access Board.**
- Could the access path leading from the parking lot to the underpass be realigned to minimize concrete on sand area – can it connect from the base of the stairs directly to the entrance of the underpass?
 - **The proposed alignment is designed to create a berm near the tunnel, preventing flooding inside the tunnel. It is also designed to be ADA compliant. The suggested alignment would not provide the length needed to meet ADA and incorporate a berm to minimize vulnerability to coastal hazards.**

Permit Jurisdiction:

- Do you have a MHTL survey for the Pine Avenue and Tamarack ramp areas? It appears that the City and CCC probably share permit authority over both projects. The entire Cold Water Tunnel/crosswalk project is located within the Agua Hedionda segment, and so is located within CCC permit authority. Have you considered how you want to process the CDP for these projects? It seems appropriate to process them all together, and CCC could do that through a consolidated permit. Let's discuss.
 - **The city will issue a CDP for project components located within the Mello II Segment of the city's LCP (north of Tamarack Avenue and above the MHTL) and will apply for a CDP from the CCC for project components located within the Agua Hedionda Lagoon Segment (south of Tamarack Avenue and below the MHTL), where the CCC has retained permitting authority.**