Berkeley SafeTREC

SAFE TRANSPORTATION RESEARCH AND EDUCATION CENTER

PS22021

CITY OF CRESCENT CITY

COMPLETE STREETS SAFETY ASSESSMENT

Issues, Opportunities, and Suggested Strategies

Assessment Team

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October 2022

This report was produced in cooperation with the City of Crescent City. Funding for this program was provided by a grant from the California Office of Traffic Safety, through the National Highway Traffic Safety Administration. Opinions, findings, and conclusions are those of the authors and not necessarily those of the University of California and/or the agencies supporting or contributing to this report.

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FINAL REPORT

OCTOBER 2022

ASSESSMENT TEAM

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EXECUTIVE SUMMARY

The City of Crescent City requested that SafeTREC at the University of California, Berkeley conduct Complete Streets Safety Assessment (CSSA) study for various locations within the city.

A safety experts conducted the CSSA. He the City of Crescent City conducted a walking audit on March 30, 2022. The objectives of the CSSA are to improve pedestrian and bicycle safety and to enhance walkability and accessibility for all pedestrians and bicyclists in Crescent City.

This report is organized into the following chapters:

- Chapter 1 is an introduction to the Complete Streets Safety Assessment for the City of Crescent City.
- Chapter 2 presents background information on bicyclist and pedestrian safety in the city and crash history.
- Chapter 3 presents benchmarking analysis results and suggestions for potential improvement from the benchmarking analysis.
- Chapter 4 presents field walking audit results and suggestions for potential improvements from the audit.

Benchmarking Analysis of Policies, Programs, and Practices

To assess pedestrian safety conditions in Crescent City, the expert team conducted a benchmarking survey to understand how the city's existing conditions compared with current best practices. Through a pedestrian and bicycle safety assessment questionnaire conducted with city staff, the expert team identified the city's pedestrian and bicycle policies, programs, and practices and categorized them into three groups:

- Key strengths (areas where the city is exceeding national best practices)
- Enhancement areas (areas where the city is meeting national best practices)
- Opportunity areas (areas where the city appears not to meet national best practices)

While suggestions are provided for each category, cities have differing physical, demographic, and institutional characteristics that may make certain goals or policies more appropriate in some jurisdictions than others. Ultimately, city staff may determine where resources and efforts are best placed for meeting local development and infrastructure goals for pedestrians and bicyclists.

A discussion of the city's pedestrian and bicycle safety policies, programs, and practices, and suggestions for potential improvement or further enhancement to the city's existing programs and policies are presented in Chapter 3.

Walking Audit Focal Areas

Per city's request, the following focus areas were studied in this assessment:

Coastal Trail:

1. East of Howe Drive
2. South waterfront along Howe Drive and Public Works yard, to B Street
3. B Street — 2nd Street
4. 2nd Street — Pebble Beach Drive
5. Pebble Beach Drive
6. Brother Jonathan Vista Point and crosswalk

8th Street & H Street:

7. South leg crosswalk across H Street

Many of the strategies suggested in this report are appropriate for grant applications, including Office of Traffic Safety (OTS) or Active Transportation Program (ATP) funding. The strategies may also be incorporated into a bicycle or pedestrian master plan, documents that could set forth bicycle, pedestrian, and streetscape policies for the city, identify, and prioritize capital improvement projects.

The suggestions presented in this report are based on limited field observations and time spent in Crescent City by the CSSA evaluator. These suggestions, which are based on general knowledge of best practices in pedestrian and bicycle design and safety, are intended to guide city staff in making decisions for future safety improvement projects in the city, and they may not incorporate all factors which may be relevant to safety issues in the city.

As this report is conceptual in nature, conditions may exist in the focal areas that were not observed and may not be compatible with suggestions in this report. Before finalizing and implementing any physical changes, city staff may choose to conduct more detailed studies or further analysis to refine or discard the suggestions in this report, if they are found to be contextually inappropriate or appear not to improve bicycling safety or accessibility due to conditions including, but not limited to, high vehicular traffic volume or speeds, physical limitations on space or sight distance, or other potential safety concerns.

1. INTRODUCTION

1.1. OBJECTIVE OF THE ASSESSMENT

The City of Crescent City requested that the Safe Transportation Research and Education Center (SafeTREC) at University of California, Berkeley conduct a Complete Streets Safety Assessment (CSSA) for areas within the city. The objective of the CSSA is to improve safety and accessibility for all people walking and bicycling in and around the city. This assessment emphasizes safety and mobility issues associated with pedestrians and bicyclists.

1.2. ACKNOWLEDGEMENTS

The following individuals participated on the field audit or otherwise provided valuable input:

Name	Organization	Title
Jonathan Olson	Crescent City Public Works	Director
Andrew Leighton	Crescent City Public Works	Engineering Project Manager
Kim Smith	Crescent City Public Works	Senior Maintenance Worker

1.3. ASSESSMENT APPROACH

The SafeTREC Safety experts conducted a pre-visit telephone interview with city staff on February 03, 2022. One of the experts conducted a walking audit at various locations in Crescent City on March 30, 2022. Positive practices, as well as pedestrian and bicycle safety and accessibility issues were identified at the field audit.

1.4. DISCLOSURES

The benchmarking analysis aims to provide the city with information on current best practices and how the city compares. Cities have differing physical, demographic, and institutional characteristics that may make certain goals or policies more appropriate in some jurisdictions than others. Ultimately, city staff will determine where resources and efforts are best utilized to meet local development and infrastructure goals for people walking and biking.

The suggestions presented in this report are based on limited field observations and limited time spent in the City of Crescent City by the CSSA evaluator. These suggestions, which are based on general knowledge of best practices in pedestrian and bicycle design and safety, are intended to guide city staff in making decisions for future safety improvement projects in the city, and they may not incorporate all factors, which may be relevant to the pedestrian and bicycle safety issues in the city.

As this report is conceptual in nature, conditions may exist in the focal areas that were not observed and may not be compatible with suggestions in this report. Before finalizing and implementing any physical changes, city staff may conduct more detailed studies or further analysis to refine or discard the suggestions in this report if they are found to be contextually inappropriate or appear not to improve pedestrian and bicyclist safety or accessibility due to conditions including, but not limited to, high vehicular traffic volume or speeds, physical limitations on space or sight distance, or other potential safety concerns.

2. BACKGROUND AND CRASH HISTORY

The City of Crescent City is located in Del Norte County. Per Office of Traffic Safety, as of 2019, with a population of approximately 6,665, it is categorized as one of the 74 cities in Group F, population of 2,501-10,000, as shown in Table 2-1.

Table 2-1: City of Crescent City Summary Statistics

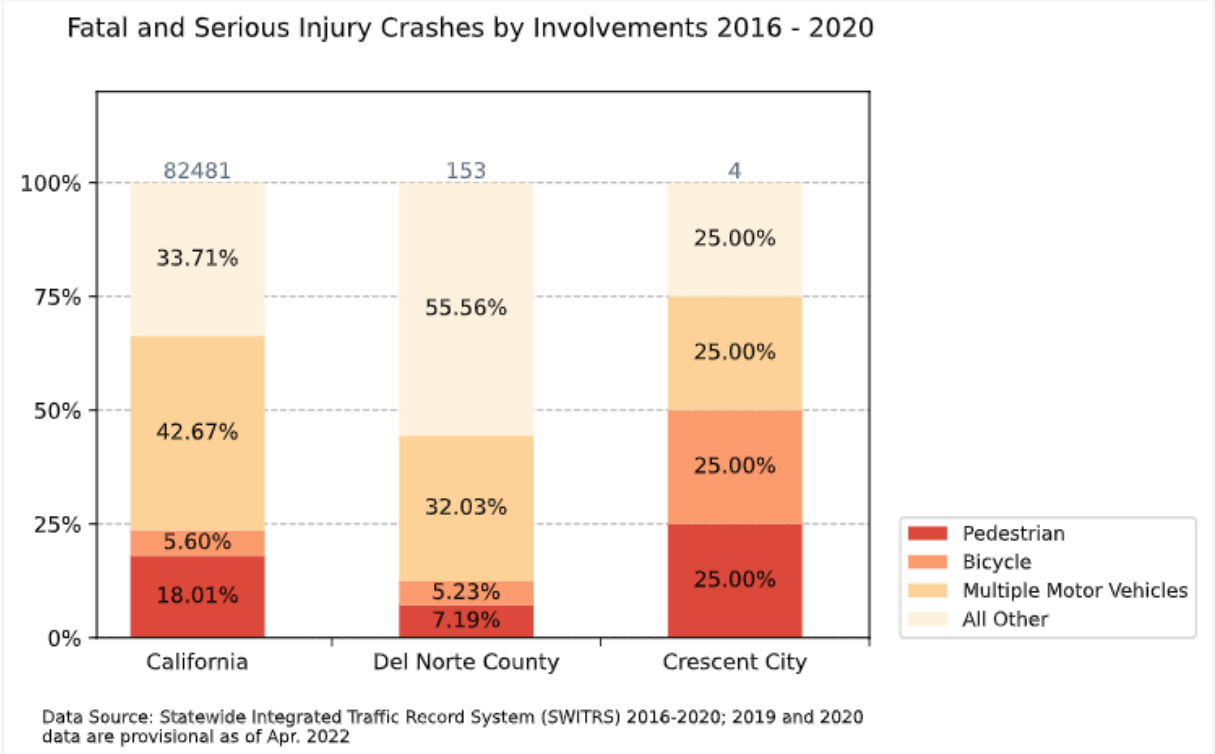
Year	County	Population	Population Group	Daily Vehicle Miles Traveled (DVMT)
2019	Del Norte	6,665	F	28,740

Source: California Office of Traffic Safety, https://www.ots.ca.gov/media-and-research/collision-rankings/

2.1. PEDESTRIAN AND BICYCLIST CRASH DATA

The crash data for City of Crescent City from January 2011 to the end of 2020 was taken from the SafeTREC Transportation Injury Mapping System (TIMS) database. During this ten-year period, 43 crashes occurred in Crescent City, including one fatality. There were 4 crashes involving pedestrians and 8 involving bicyclists.

The following chart depicts where City of Crescent City stands in number of crashes compared with Del Norte County and State of California.



Pedestrian Crashes

Within the 10-year period of January 2011 to the end of 2020 analyzed from TIMS data, 4 crashes involved pedestrians, one of which was fatal and one with severe injuries. The following chart depicts this data.

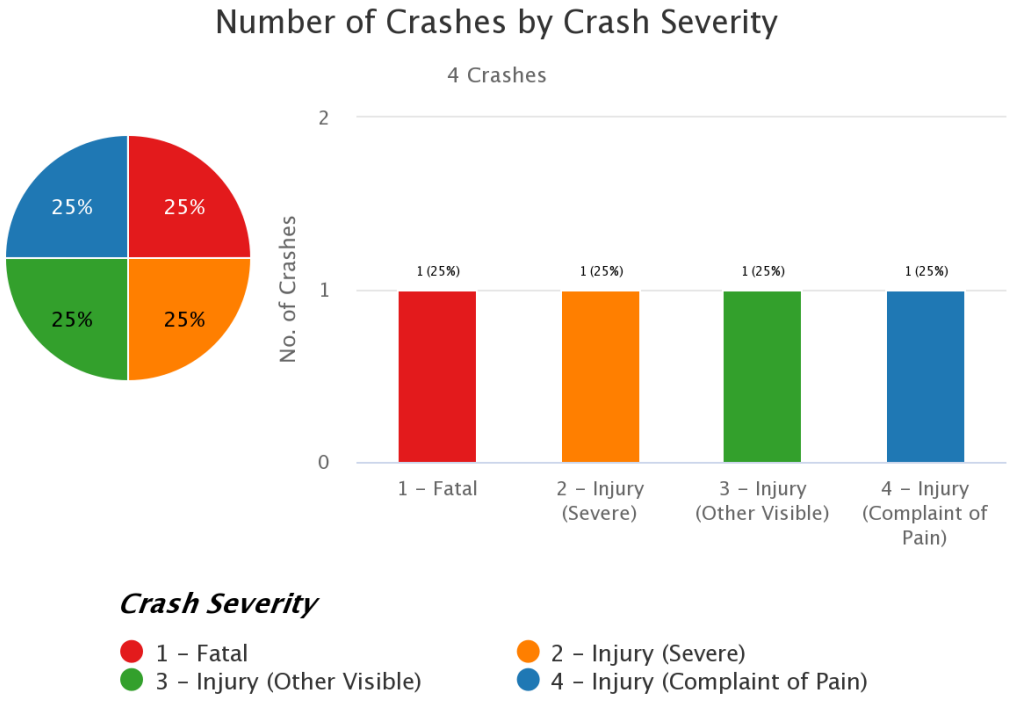


Figure 2-1: Number of Pedestrian Crashes by Crash Severity, City of Crescent City, January 2011 to December 2020

The following chart depicts that most pedestrian involved crashes happened on Wednesdays.

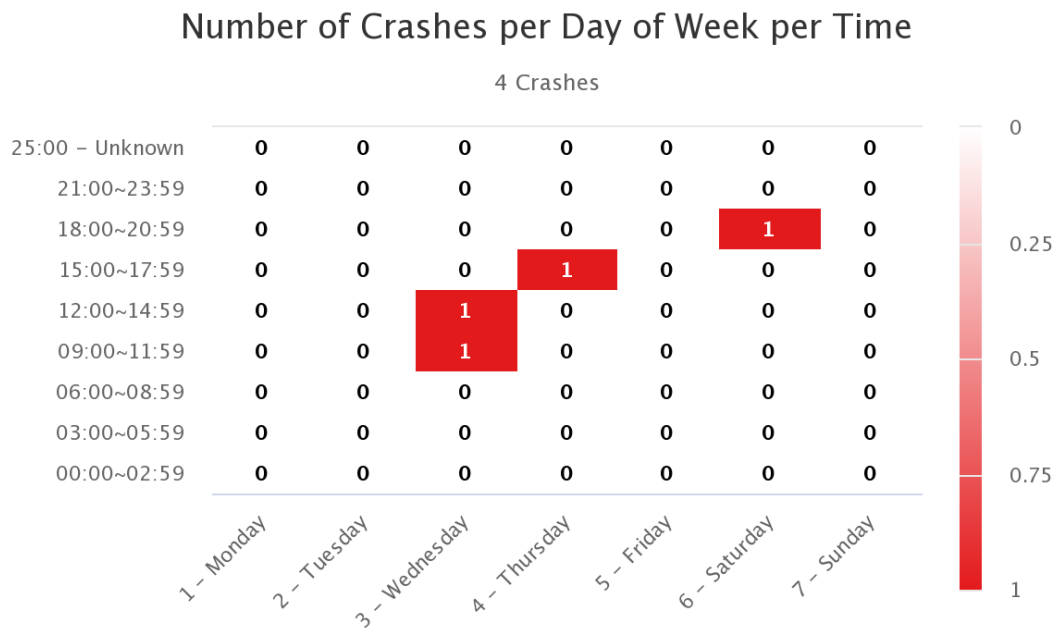
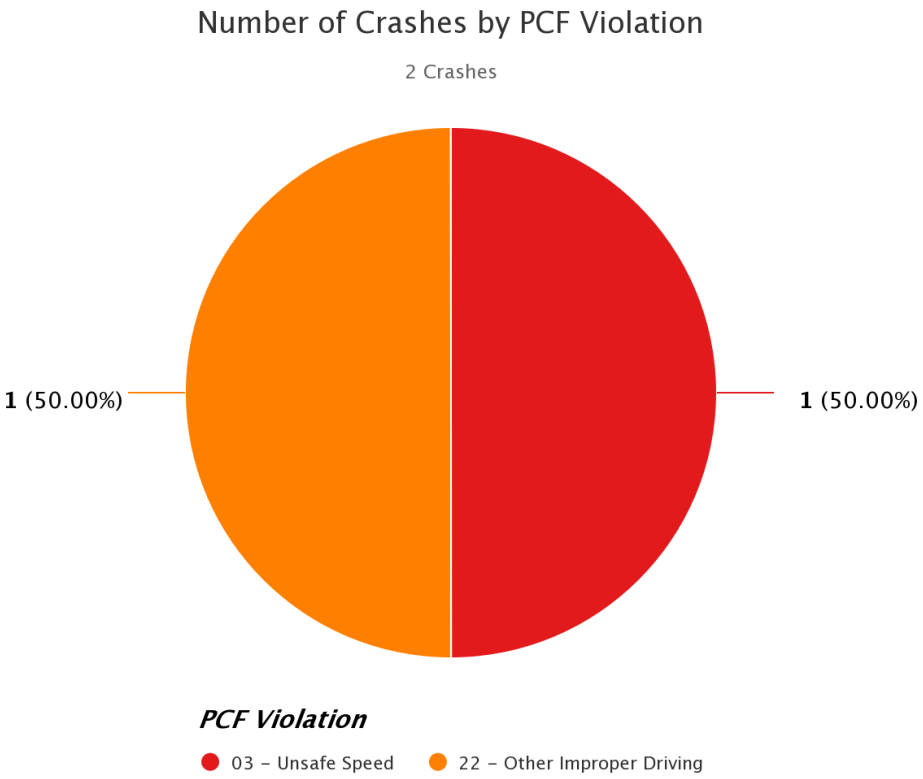


Figure 2-3: Number of Pedestrian Crashes per Day of Week, per Time, City of Crescent City, January 2011 to December 2020

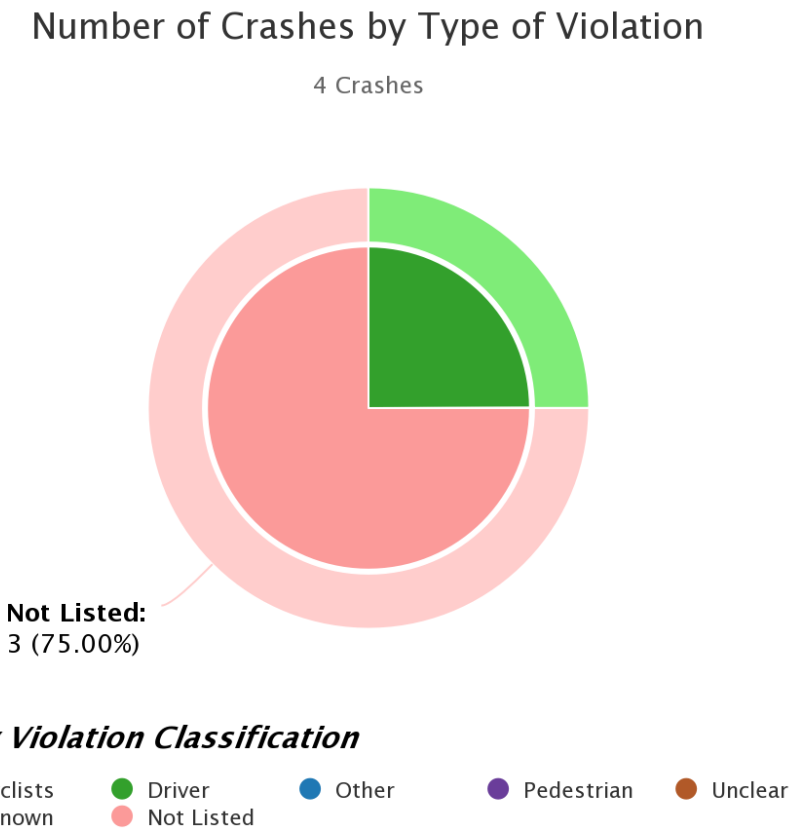
The following chart and table depict all the Primary Collision Factors (PCF). As shown here, one crash occurred due to unsafe speed.



PCF Violation	Count	%
03 - Unsafe Speed	1	50.00%
22 - Other Improper Driving	1	50.00%

Figure 2-4: Number of Pedestrian Crashes by PCF Violation, City of Crescent City, January 2011 to December 2020

The following chart and table show the types of violations in the 4 crashes. One crash occurred due to the driver of the motor vehicle speeding on the highway.



Party Violation Classification	Type of Violation	Description	Count	%
Not Listed	Not Listed	Violation code was not included in the crash	3	75.00%
Driver	22350	Speeding on the highway / Driving at a dangerously high speed given highway conditions like weather, visibility, traffic, and highway measurements, or driving at a speed that endangers people or property	1	25.00%

Figure 2-5: Type of Violations in Pedestrian Crashes, City of Crescent City, January 2011 to December 2020,

The following graph depicts the pedestrian crash trend in Crescent City from 2011 through 2020.

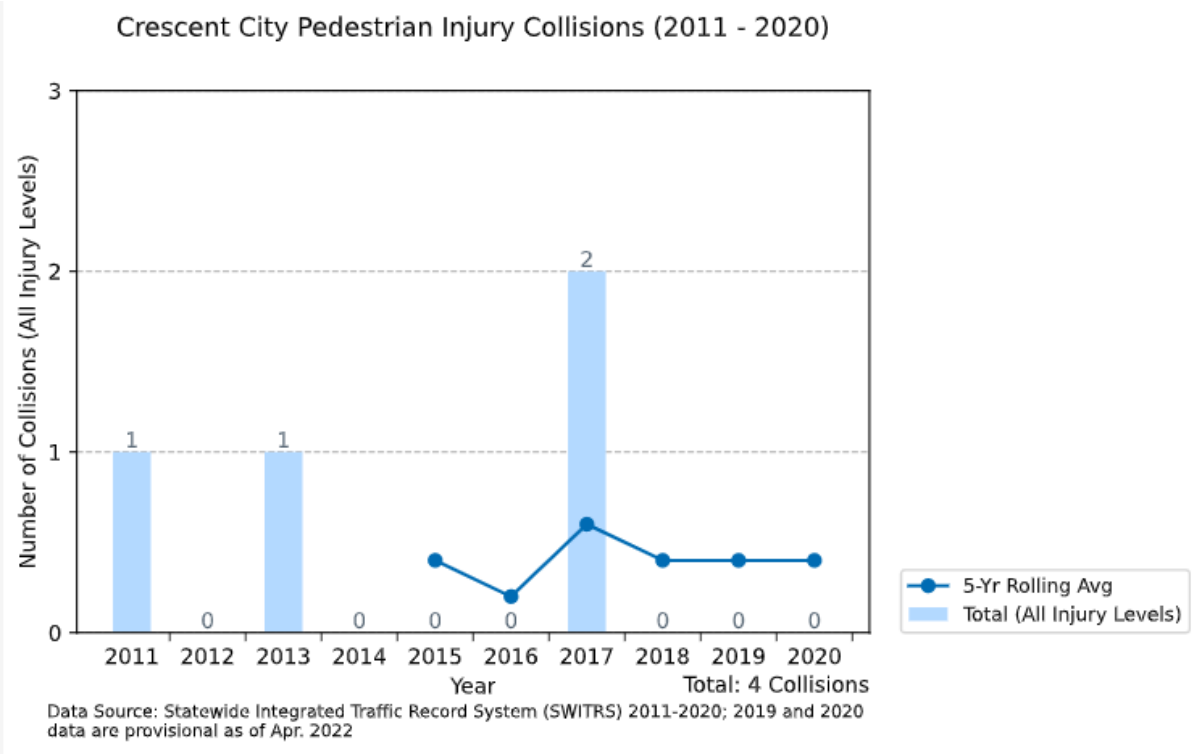


Figure 2-6: Pedestrian Injury Crashes, City of Crescent City, January 2011 to December 2020

Bicycle Crashes

Within the 10-year period analyzed from TIMS data, from January 2011 to the end of 2020, 8 crashes involved bicyclist, none of which was fatal. The following chart depicts this data.

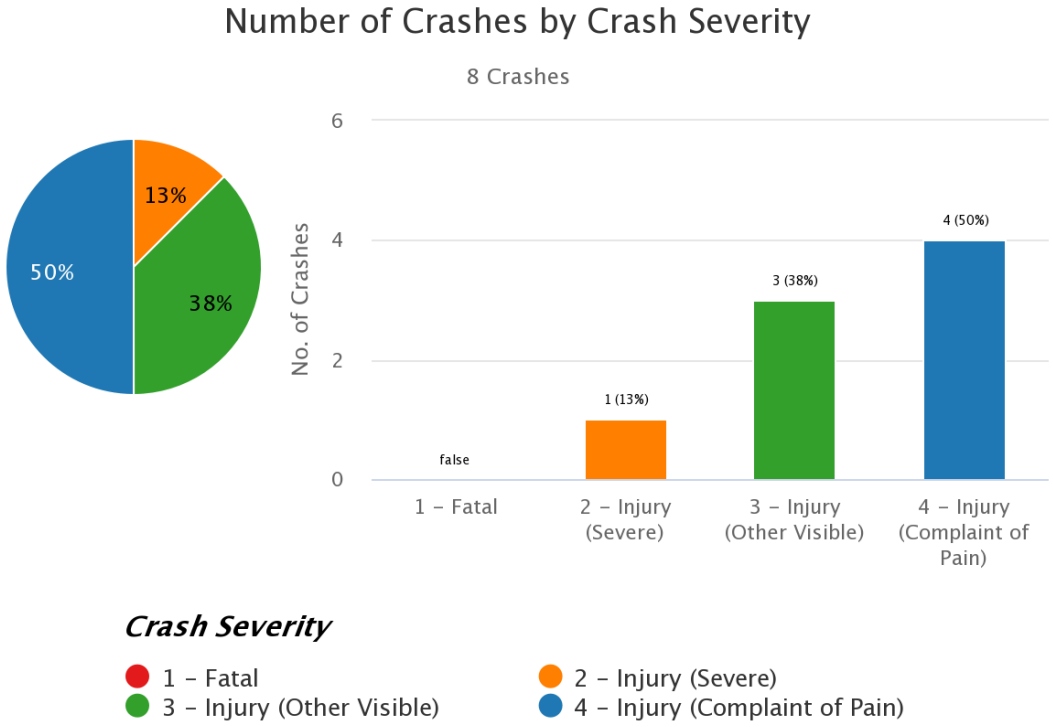


Figure 2-7: Number of Bicycle Crashes by Crash Severity, City of Crescent City, January 2011 to December 2020

According to the following chart, most of bicycle crashes happened on Saturdays.

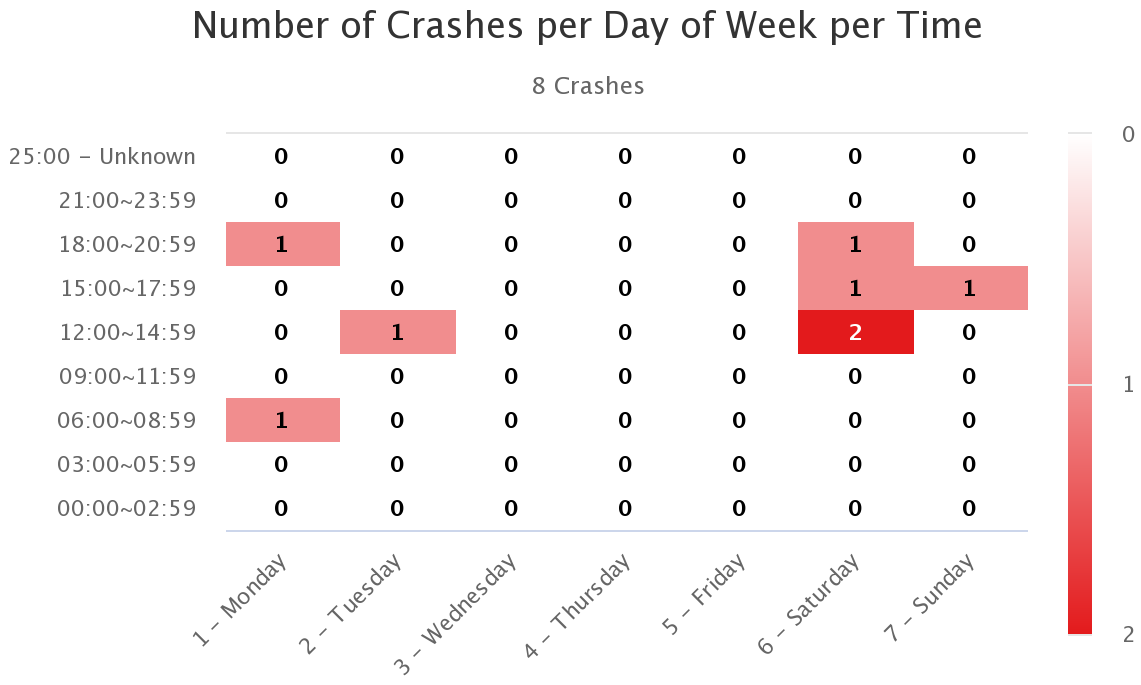
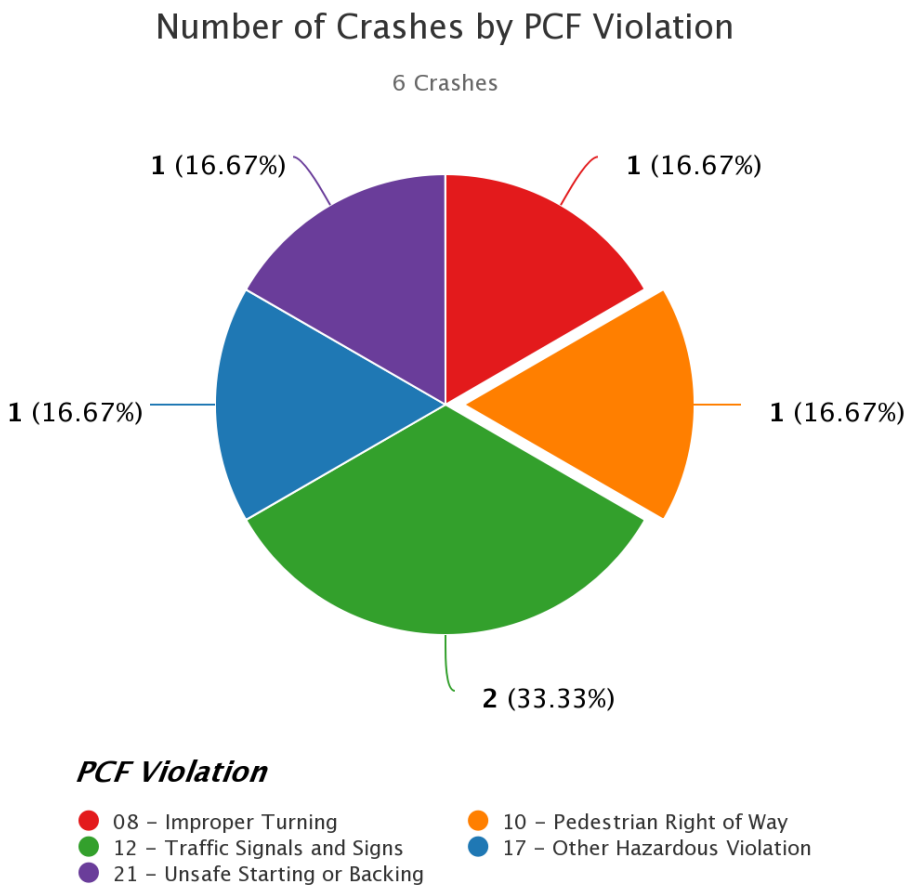


Figure 2-8: Number of Bicycle Crashes per Day of Week, per Time, City of Crescent City, January 2011 to December 2020

The following chart and table depict all the Primary Collision Factors (PCF).



PCF Violation	Count	%
08 - Improper Turning	1	16.67%
10 - Pedestrian Right of Way	1	16.67%
12 - Traffic Signals and Signs	2	33.33%
17 - Other Hazardous Violation	1	16.67%
21 - Unsafe Starting or Backing	1	16.67%

Figure 2-9: Number of Bicycle Crashes by PCF Violation, City of Crescent City, January 2011 to December 2020

The following graph depicts the bicyclists crash trend in Crescent City from 2011 through 2020.

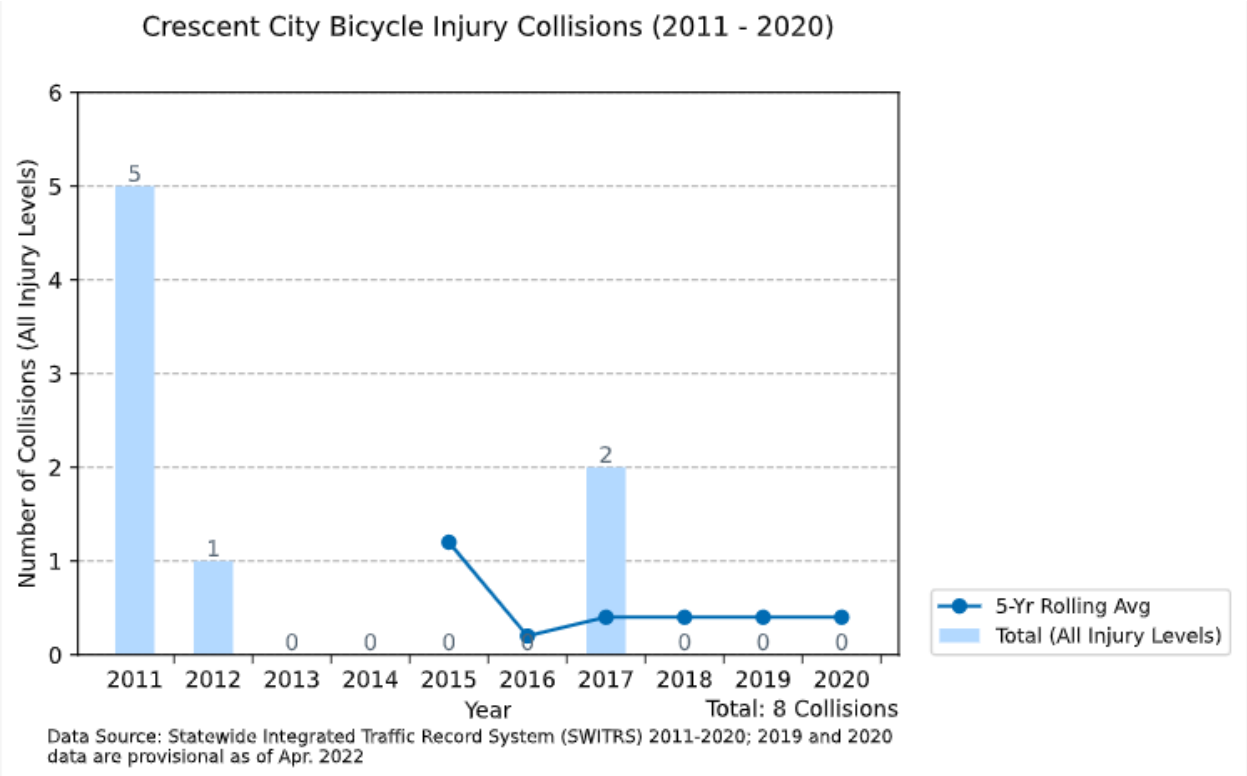


Figure 2-10: Bicyclists Injury Crashes**, City of Crescent City, January 2011 to December 2020**

The type of information provided above was obtained from SafeTREC's TIMS (https://tims.berkeley.edu/) can help the enforcement department in decision-making regarding their enforcement efforts.

2.2. STREET STORY

The Street Story program (https://streetstory.berkeley.edu/) is a relatively new tool developed by UC Berkeley's Safe Transportation Research and Education Center (SafeTREC) with OTS support. Street Story is a community engagement tool that allows residents, community groups and agencies to collect information about transportation crashes, near-misses, general hazards and safe locations to travel. To promote access to the tool, SafeTREC conducts technical assistance sessions with communities and organizations on using Street Story. Street Story is free to use and publicly accessible.

Street Story features a survey where people can record travel experiences. Once a record has been entered, the information is publicly accessible on the website with maps and tables that can be downloaded.

It is suggested that city staff use this free tool to collect information from their residents for local needs assessments, transportation safety planning efforts, safety programs and project proposals.

3. BENCHMARKING ANALYSIS RESULTS AND SUGGESTIONS

3.1. BENCHMARKING ANALYSIS OF POLICIES, PROGRAMS, AND PRACTICES

To assess pedestrian and bicycle safety conditions in Crescent City, the CSSA team first conducted a benchmarking Survey to understand how the city's existing conditions compared to current national best practices including consistency with the Safe System approach as shown here. Through a holistic view of first anticipating human mistakes and keeping impact energy levels on the human body at tolerable levels, the Safe System approach aims to eliminate fatal and serious injuries for all road users[1]. Responses were analyzed with a benchmarking matrix, as shown in Table 3-1, which lists the benchmarking topics that fall under the following categories:

The Safe System Approach
Source: Fehr & Peers for FHWA

- Enhancing Safety through Accessibility
- Policies and Programs
- Safety Implementation Plans and Policies
- Safety Data Collection and Assessment
- Pedestrian and Bicycle Network Planning and Design
- Pedestrian and Bicycle Support Programs

The CSSA team also reviewed the city's website and relevant documents. Through a pedestrian and bicycle safety assessment interview conducted with city staff, the CSSA team identified the city's pedestrian and bicycle policies, programs, and practices and categorized these into three groups:

- Key strengths (areas where the city is exceeding national best practices)
- Enhancement areas (areas where the city is meeting national best practices)
- Opportunity areas (areas where the city appears not to meet national best practices)

While suggestions are provided for each category, cities have differing physical, demographic, and institutional characteristics that may make certain goals or policies more appropriate in some jurisdictions than others. Ultimately, city staff may determine where resources and efforts are best placed for meeting local development and infrastructure goals for pedestrians and bicyclists.

Based on the city staff's responses to the questionnaire, each topic receives one of those three ratings, highlighted in green in the table below. This analysis shares information on current national best practices and how the city compares.

[1] https://safety.fhwa.dot.gov/zerodeaths/docs/FHWA_SafeSystem_Brochure_V9_508_200717.pdf

The items in Table 3-1 are further elaborated in the following sections, which provide a description for each benchmarking topic. The topics incorporate the Safe System elements (Safe Road Users, Safe Vehicles, Safe Speeds, Safe Roads, and Post-Crash Care) while also incorporating best practices related to access and comfort for people walking and biking. Suggestions for better aligning with best practice benchmarks are also noted; the city could consider implementing as they determine is appropriate.

Table 3-1: Summary of Programs, Policies, and Practices Benchmarking Analysis for the City of Crescent City

Benchmark Topic	Key Strength	Enhancement	Opportunity
Enhancing Safety through Accessibility			
Safe Road Users, Safe Roads			
Implementation of Americans with Disabilities Act (ADA) Improvements	Uses state-of-the- practice (PROWAG) ADA improvements with consistent installation practices Follow CALDAG recommendations. Hire consultant to review a portion of our sidewalks annually.	Has clear design guidelines but no regular practices for ADA compliance	Has minimal design guidelines and practices related to ADA requirements
ADA Transition Plan for Streets and Sidewalks	Has ADA transition plan in place and an ADA coordinator	Partial or outdated ADA transition plan or an ADA coordinator	No transition plan or ADA coordinator
Ensure Safety for All Users is Prioritized, and Accessibility Maintained, During Construction and Road Maintenance Projects	Has a policy in place that details how to maintain accessibility and provide designated space for people biking and walking through a Construction Management Plan (CMP) Have standard road & sidewalk closure plans.	Occasionally requires a CMP or has outdated CMP guidelines	No CMP guidelines
Policies and Programs			
Safe Road Users, Safe Roads, Safe Vehicles			
Roadway Safety Coordinator	Has a Roadway Safety Coordinator on staff who manages the agency's pedestrian and bicycle programs (e.g., Complete Streets Program and/or Vision Zero Program) and helps with capacity building of staff	Occasionally uses a part-time contract coordinator	Does not have a Roadway Safety Coordinator

Benchmark Topic	Key Strength	Enhancement	Opportunity
Formal Advisory Committee	Has a formal, active/on-going Transportation Advisory Committee guided by a charter or mission that includes the safety of vulnerable road users and whose activities focus on improving pedestrian and bicycle safety.	Has an ad-hoc Transportation Advisory Committee or one not guided by a charter or mission that specifically includes safety of vulnerable road users. Note: City's Planning Commission may act as Transportation Advisory Committee	Does not have a Transportation Advisory Committee
Equitable Community Engagement Strategy that Includes Community Based Organization (CBO) Involvement	Has an equity-focused public engagement strategy and, along with a local CBO, creates opportunities for public engagement on walking and biking topics through a variety of community-specific formats (e.g., venues, times of day, languages). Community engagement is an on-going process and does not only happen during the duration of the project, but also leading up to and after the project is completed (e.g., 311 app).	Has an equitable public outreach strategy, but formal community engagement events happen on a project-by project basis and/or without CBO partnerships.	Does not have a formal public involvement or feedback process for bicycle/pedestrian planning or safety
Traffic Calming or Speed Management Program	Has a speed management program that is reviewed annually alongside the CIP project list. Major arterials and neighborhood corridors include proactive speed management strategies and countermeasures are implemented to reach safe target speeds	Has a traffic calming program but funding and implementation of countermeasures are ad-hoc and reactive	Explores traffic calming features other than speed humps

Benchmark Topic	Key Strength	Enhancement	Opportunity
Speed Limit Setting	Regularly surveys speed and identifies locations with high deviation from target speeds. Agency uses best practices for speed management in combination with allowances from AB 43 to lower speed limits. Implementing lower speed limits is done using a consistent approach that prioritizes areas with historic under investment. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB43	Seeks to include 15 mph speed limits in school zones or commercial corridors.	Continues to use the 85th percentile to set speed limits. Set by municipal code. Most streets are not posted. Residential is 25mph
Safe Routes to Schools	Has an ongoing Safe Routes to Schools program that is included as part of the agency's safety monitoring and is integrated with other policies and programs	Has obtained funding for recent projects, but has no communitywide Safe Routes to Schools program	Does not have a Safe Routes to Schools program and has not obtained recent funding in the last 4 years.
Systemic Signalized Intersection Enhancements	Has a systemic signalized intersection enhancement program that follows a Safe System-based framework and proactively implements FHWA's Proven Safety Countermeasures to manage speed and crash angles and consider risk exposure.	Reactively implements Proven Safety Countermeasures at signalized intersections	Does not routinely implement proven safety countermeasures (LPIs, protected left turns, roundabouts, medians, countdown signals, etc.) at signalized intersections. Only signalized intersections are on state system or city/county interface.
Systemic Enhancements for Uncontrolled Crossings	Has a crosswalk enhancement program that proactively implements a Safe Transportation for Every Pedestrian (STEP)-consistent countermeasure at uncontrolled crossings.	Has a crosswalk policy that is STEP-consistent but is only reactively to implementing Proven Safety Countermeasures	Does not have a policy or set practices for addressing crosswalk installation or enhancements using Proven Safety Countermeasures

Benchmark Topic	Key Strength	Enhancement	Opportunity
Safety-focused Curbside Management	Has curbside management policy in place that prioritizes pedestrian and bicyclist safety, and provides driver education programs for fleet drivers	Has a curbside management program in place, but without a focus on safety	No curbside management program or policies in place
Policies Supporting Micromobility	Has micromobility policy in place that prioritizes low stress facilities in areas with micromobility use (e.g., downtown areas) and speed regulators in geofenced locations. Micromobility is built into network planning and design for all projects with retail or in urban space	Requirements for micromobility are noted on a project-by-project basis	No micromobility policies are in place
Connected and Automated Vehicle (CAV) Readiness	Has policy that strategizes preparation to meet and address oncoming challenges posed by CAV technology. As CAV technology is deployed, it is imperative to have strategies in place that discuss the interface between technology and human road users, the role of smart infrastructure, and the need for physical separation of AVs and vulnerable road users	Has EV charging policy and curbside management guidance, but not a full CAV readiness plan	No policy around CAV readiness
Heavy Vehicle Fleets and Truck Routing	Has policy that identifies various future fleet incorporation and funding (e.g., research on what type of fleet (Hydrogen Fuel Cell vs. Electric) best fits the agency) as well as identification of routes within city boundaries dedicated to buses, trucks, and other heavy vehicles. Identifying specific truck routes allows for parallel routes that can be identified as pedestrian and bicycle corridors	Has future fleet incorporation identified, but does not have a robust Heavy Vehicle and Truck Routing plan	No policy around future fleets and truck routing

Benchmark Topic	Key Strength	Enhancement	Opportunity
Public Advertisements Supporting Safety Culture	Regularly runs culturally relevant and accessible education campaigns and outreach through various communication tools (e.g., bus and bus shelter ads, radio, social media)	Culturally relevant and accessible education campaigns occur on a project-by-project basis	Does not implement culturally relevant and accessible education campaigns
Safety Implementation Plans and Policies			
Safe Road Users, Safe Roads, Safe Vehicles			
Adopted Safety Plan	Has an approved Local Road Safety Plan (LRSP) or other Caltrans-approved safety report that identifies funding sources and prioritization of projects within underserved communities. Safety upgrades are noted on the agency's High-Injury Network (HIN) and tied into repaving projects, CIP updates, etc.	Has received funding for a Safety Plan, which is underway and not yet adopted. Receives grant funding and/or developer fees, but projects are not tied to the High Injury Network or underserved communities	Does not have an LRSP or other Caltrans-approved Safety Plan. Moderately successful in obtaining grant funding or has trouble spending funds when given grants. Or unable to secure grants
Safe System Policy	Has a Safe System policy with redundancy built in for transportation projects with a checklist for the full set of incorporation of the Safe System elements. The policy includes all users and modes, affects new construction and maintenance, considers local context, and provides guidance for implementation	Has a Safe System policy, but does not identify how redundancy can be incorporated through the Safe System elements	Does not have a Safe System policy
Safety Data Collection and Assessment			
Safe Road Users			
Collection of Pedestrian and Bicyclist Volumes	Collects pedestrian and bicyclist volumes routinely with intersection counts and has a GIS database of counts. Database identifies key origin and destination locations that identifies patterns and needs in agencies policies and programs, especially in underserved communities	Collects pedestrian and bicyclist volumes on a project-by-project basis, but not routinely. Key origins and destinations are identified in a Bike, Pedestrian, or Active Transportation Plan, but need to be updated	Does not collect pedestrian and bicycle volumes

Benchmark Topic	Key Strength	Enhancement	Opportunity
Inventory of Bikeways, Parking, Informal Pathways, and Key Bicycle Opportunity Areas	Maintains and routinely updates an AI-based inventory of missing and existing bikeways in GIS and includes bikeway projects in the CIP	Has a partial, static inventory of missing facilities and opportunity areas through Bike, Pedestrian, or Active Transportation Plans	Does not have an inventory of missing/existing bikeways, parking, informal pathways, or key bicycle areas
Inventory of Sidewalks, Informal Pathways, and Key Pedestrian Opportunity Areas	Maintains and routinely updates an AI-based inventory of missing and existing sidewalks and crosswalks in GIS and includes sidewalk and crosswalk projects in the CIP	Maintains an inventory of missing sidewalks, crosswalks, informal pathways, or pedestrian opportunity areas	Does not have an inventory of missing sidewalks, crosswalks, informal pathways, or pedestrian opportunity areas
Traffic Control Audit (Signs, Markings, and Signals)	Maintains and updates an inventory of signs, markings, other countermeasures, and signals (including phasing) in GIS	Has some GIS-based inventories of signs, markings, other countermeasures, and signals	Does not have a GIS-based inventory of signs, markings, countermeasures and signals
Crash History and Crash Reporting Practices	Employs a data-driven systemic safety or Vision Zero approach to regularly analyze crash data. Crash reporting is shared to key stakeholders in real time and reporting details are consistent through the agency	Reviews data only following fatalities or other high-profile incidents	Does not have set practices for data review
Surrogate Safety Measures for Proactive Monitoring	To inform safety projects, agency uses community feedback tools such as Street Story and innovative data collection techniques such as hard breaking, speed, and near miss data	Uses surrogate safety measures on a project-by-project basis	Does not use surrogate safety measures as part of data collection and assessment process
Updated Safety Action Plan	Has an LRSP that identifies routine data collection and assessment. Prioritized project list is updated based on crash data assessment	Completes crash data assessment on a project-by-project basis. Does not have an action plan that identifies regularity of assessment	Crash data assessment is ad-hoc and dependent on grant funded projects

Benchmark Topic	Key Strength	Enhancement	Opportunity
Pedestrian and Bicycle Network Planning and Design			
Safe Road Users, Safe Roads			
Complete Streets Policy	Has a Complete Streets policy that includes all users and modes, affects new construction and maintenance, considers local context, and provides guidance for implementation	Has a Complete Streets policy that is narrow in scope or applies only to public works projects	Does not have a Complete Streets policy
Active Transportation Plans	Has a recently updated Active Transportation Plan (or similar) with strategic prioritized list of projects that reflects current best practices (e.g., Level of Traffic Stress analysis, inclusion of Class IV protected bicycle facilities)	Has a Pedestrian or Bicycle Master Plan but it may be outdated and/or no recent projects from the Plan have been completed	Does not have a Pedestrian or Bicycle Master Plan
Existing bike network	Existing bike network includes best practice low stress facilities such as protected bikeways, bike boulevards, and protected intersections citywide or countywide	Bike network primarily includes Class I, II, and III facilities. There are gaps within the bike network and facilities do not accommodate all users	Bike network is not regularly maintained or routes are unclear to users
Existing pedestrian facilities	Existing pedestrian facilities includes low stress facilities and frequent use of landscape strips, medians, frequent crosswalks, and roadways are primarily two-to-four lane roads	Narrow sidewalks or sidewalk gaps, crosswalks with few or no safety enhancements, crosswalks are minimal, and roadways are primarily arterials	Missing key marked crosswalks and sidewalks, with few ADA improvements and no safety enhancements, and no pedestrian countdown signals
Bike Network Implementation Practices	Age 8 to 80 bicyclist considerations are included in the agency's policies and level of traffic stress is considered. A Bike or Other Safety Plan identifies low stress networks and funding mechanisms to implement a low stress network city/countywide	Spot locations have been identified through safety plan(s) for a low stress network. Plan also identifies additional proven countermeasures to be implemented as part of the project	Treatments are implemented where they fit within the right-of-way and vehicle LOS is not affected

Benchmark Topic	Key Strength	Enhancement	Opportunity
Pedestrian Network Implementation Practices	Pedestrian priority areas (PPA) are identified in a safety plan and the agency has policies prioritizing PPAs, crosswalk spacing, and design enhancements.	Spot PPA locations have been identified through safety plan(s). Plan also identifies additional proven countermeasures to be implemented as part of the project	Treatments are implemented on a project-by-project basis
Design guidelines and standards	Uses national best practices focused on bicycle and pedestrian safety for roadway and facility design guidelines and standards	Local standards reference national best practices, but are static or out of date, with minimal customized design policies for pedestrian and bicycle accommodations	Does not have comprehensive design guidelines or standards for pedestrian or bicyclist treatments
Roadway Surfaces for Bicycle Facilities	Roadway resurfacing projects and debris removal are prioritized for bicycle routes.	Roadway surface is acceptable on bicycle routes and routine maintenance, including debris removal, occurs.	Roadway surface conditions are poor on some bicycle facilities and maintenance is not prioritized for bicycle facilities
Attention to Bicycle Crossing Barriers	Separated bikeways and other innovative treatments, including geometric enhancements, are provided at intersections and interchanges	Higher-stress bike treatments are installed at some intersections and interchanges	Bike treatments are rarely installed at intersections or through interchanges
Attention to Pedestrian Crossing Barriers	Has a recently updated policy and comprehensive inventory of barriers. Has design guidelines and funding in place for addressing barriers	Has no policy, but has identified some barriers and taken steps to improve pedestrian access	Does not have a policy or practices for addressing barriers to walking
Intersection Control Evaluations	Uses intersection control evaluations to assess alternative traffic control (e.g., roundabout, signal, stop signs) performance (safety, ped/bike, etc.) and select appropriate control based on desired performance.	Uses relaxed warrants for traffic signals and/or all-way stops. If asked to by community or stakeholder may consider a roundabout or neighborhood traffic circle.	Uses MUTCD Warrants and/or does not have a practice of using Intersection Control Evaluations
Sidewalk furniture or other sidewalk zone policies	Design standards require implementation of the sidewalk zone system. Does not allow apron parking or attached (unbuffered) sidewalks anywhere.	Design standards require implementation of the sidewalk zone system in some districts (e.g., CBD, neighborhood commercial, etc.).	There are no design standards requiring implementation of the sidewalk zone system.

Benchmark Topic	Key Strength	Enhancement	Opportunity
Pedestrian and Bicycle Support Program			
Safe Road Users, Safe Speeds, Safe Roads, Post-Crash Care			
Street Tree Requirements	Has a street tree ordinance that improves pedestrian safety and access. The ordinance includes details on debris maintenance and actions to take when sidewalk buckling occurs	Has a street tree ordinance, but it does not improve pedestrian safety or access	Does not have a street tree ordinance
Bicycling Supportive Amenities and Wayfinding	Bicycle supportive amenities (parking, routing/wayfinding, water fountains, repair stations) are found communitywide	Some bicycle supportive amenities are found in key areas	Bicyclist supportive amenities are not provided in the community
Bicycle Parking Requirements	A bicycle parking ordinance is enforced for all development and a program is in place to install and maintain public bike parking in existing development	A bicycle ordinance for off-street parking is in place but no requirement exists to install parking for existing development	No bike parking ordinance or program in place City has installed bike racks at some city facilities
Pedestrian and Bicycle Safety Education Program	Pedestrian and bicycle education programs are data-driven and focused on local safety context; education programs are customized for different groups. The program includes education for drivers/motorists.	Has some traffic safety education programs that address pedestrians and bicyclists	Does not have pedestrian and bicycle safety education programs
Enforcement	Police Department applies for annual OTS funding, and conducts sustained and data-driven enforcement efforts focused on education, behavior, and locations related to most severe bicycle and pedestrian crashes; enforcement is effective is KSI crashes decrease and there is lower racial disproportionality in traffic citations	Police Department conducts some data-driven enforcement activities related to bicyclist and pedestrian safety	Enforcement is not data-driven or Police Department does not have Traffic Safety Officer(s)
Pedestrian Walking Audit Program	Has significant and ongoing programs that include regular walking audits	Has no safety program, but has conducted walking audits sporadically	Does not have a pedestrian safety program and has not conducted a walking audit
Bicycling Safety Audit Program	Has significant and ongoing programs which include bicycling audits	Has some programs and may have conducted a bicycling audit	Does not have bicycling safety audit programs

Benchmark Topic	Key Strength	Enhancement	Opportunity
General Plan: Provision for Pedestrian and Bicycle Nodes	Pedestrian and bicycle nodes are identified, and pedestrian-oriented policies are in place for these nodes	Pedestrian and bicycle nodes are identified, but pedestrian and bicycle accommodations are not	Pedestrian and bicycle nodes are not identified
General Plan: Safety Element	On safety evacuation routes, agencies should identify creative solutions on how to evacuate residents safely and efficiently while maintaining and implementing low stress pedestrian and bicycle facilities	Safety Element does not identify the need to maintain low stress facilities and come up with creative solutions that does not prohibit the implementation of low-stress facilities on evacuation routes	Safety Element does not mention pedestrian and bicycle facilities on evacuation routes
Bike Ordinances (Sidewalk Riding)	Local ordinances allow for context-specific flexibility in sidewalk riding policies and enforcement (e.g., is there an adjacent bike facility?)	Local ordinance does not include section on sidewalk riding	Ordinances mandate that bikes are not allowed on sidewalks under any circumstances
Vehicle Miles Traveled (VMT) Mitigation Strategies	Has a VMT Mitigation Strategy that uses the most recent guidance from CAPCOA to measure potential impacts of pedestrian and bicycle facilities	Mitigation measures identified in CAPCOA are used independently on a project-by-project basis	Does not use CAPCOA mitigation strategies
General Plan: Densities and Mixed-Use Zones	Has moderate to high densities in the CBD and mixed-use zones and progressive parking policies, and transportation impact analysis for new development prioritizes safety	Has moderate densities with separate uses; transportation impact analysis considers safety	Has low densities with separate uses; transportation impact analysis relies on LOS
Specific Plans, Overlay Zones, and Other Area Plans	Bicyclist and pedestrian-oriented design, walkability, or placemaking is stressed in the plans	Plans require bicycle and pedestrian accommodations, and placemaking	Plans do not address bicyclist or pedestrian needs or do not exist
Historic Sites	Cultural and historic preservation plans include a wayfinding, bicycle, and walkability focus	Historic areas have been identified, and pedestrian and bicycle access is addressed	No plan is in place, and little consideration is given for pedestrian and bicycle access in historic areas
Economic Vitality	Has several business improvement districts, an established façade improvement program, and progressive downtown parking policies	Has a business improvement district, façade improvement program, or downtown parking policies	Does not have business improvement districts, a façade improvement program, or downtown parking policies

Benchmark Topic	Key Strength	Enhancement	Opportunity
Post-Crash Care	Agency has an adopted LRSP or Caltrans-approved Safety Plan that identifies the importance of post-crash care and how the agency will implement identified countermeasures; this includes resources for medical rehabilitation, on-going advocacy group engagement (i.e., Mothers Against Drunk Driving, Families for Safe Streets), and resources for the adjudication process to ensure offenders receive proper sentencing and treatment	The adopted LRSP or Caltrans-approved Safety Plan is vague or does not include an Action Plan that identifies countermeasure implementation	The adopted LRSP or Caltrans-approved Safety Plan does not include action items and implementation strategies surrounding post-crash care
Proactive Approach to Institutional Coordination	Has identified obstacles and proactive coordination with advocacy groups and public health services where multiple facility owners (such as Caltrans or school districts) are involved, and has implemented efforts to overcome barriers	Has reactive coordination with advocacy groups and public health services with facility owners	Projects requiring cross-jurisdictional coordination are rarely coordinated and implemented
Coordination with Emergency Response	Emergency response is involved in all aspects of bicycle/pedestrian facility planning and design (including pilot testing), and they balance response times with bicyclist/pedestrian safety. Agency also works with emergency response to implement policies providing information on traffic incident management	Emergency response is involved in some aspects of bicycle/pedestrian facility planning and design	Emergency response is not involved in bicycle/pedestrian facility planning and design
Coordination with Health Agencies	Coordinates regularly with health agencies in the planning of bicycle and pedestrian facilities and/or programs and collection of crash data	Health agencies have programs to promote healthy lifestyles through active transportation	Health agencies are not involved in bicycle/pedestrian safety or active transportation

Benchmark Topic	Key Strength	Enhancement	Opportunity
Coordination with Transit Agencies	Bicycles are accommodated on all transit vehicles with overflow capacity available. The agency partners with transit providers to ensure safe and comfortable routes for biking and walking to transit stops and stations, including on roadways with both frequent bus service and bicycle facilities	Bicycles are accommodated on buses only, with accommodation limited to rack capacity. Some transit stops and stations safe and comfortable routes for biking and walking access	Bicycles are not accommodated on transit. There are few bicycle and pedestrian accommodations for accessing transit stops and stations

Implementation of Americans with Disabilities Act (ADA) Improvements (Key Strength)

Implementation of ADA improvements is key to making walking accessible and safe for everyone, regardless of ability or age.

The city follows CALDAG recommendations and hires a consultant to review a portion of our sidewalks annually. The city uses high-contrast truncated domes.

Suggestions for Potential Improvement

- Continue adding ADA ramps at intersections that currently lack them and upgrade non-complaint ramps
- Develop an ADA improvement program for items such as dual curb ramps, truncated domes, and audible pedestrian signals that applies consistent treatments. The program may provide an inventory, prioritization plan, and funding source for such improvements.

ADA Transition Plan for Streets and Sidewalks (Enhancement)

ADA Transition Plans identify gaps and issues in the city/county's current ADA infrastructure, prioritize projects for implementation, and set forth the process for bringing public facilities into compliance with ADA regulations. Transition Plans typically a range of locations, such as public buildings, sidewalks, ramps, and other pedestrian facilities. Some cities also have ADA Coordinators, who are responsible for administering the Plan and reviewing projects for accessibility considerations.

Crescent City has a partial ADA transition plan and ADA coordinator.

Suggestions for Potential Improvement

- Consider prioritizing sub-areas within the city/county that exhibit greatest pedestrian activity.
- Expand the ADA Transition Plan to include the public right-of-way, particularly the downtown area, other priority development areas, bus stops, and schools.
- Consider having a part-time, trained ADA coordinator to review projects for accessibility and implement the ADA Transition Plan.
- Provide ADA standards and best practice training for engineering staff at all levels.

Ensure Safety for All Users is Prioritized, and Accessibility Maintained, During Construction and Road Maintenance Projects (Key Strength)

It is vital to ensure that dedicated space is maintained for vulnerable users during construction and road maintenance projects.

The city has standard road and sidewalk closure plans. City has a safety officer that provides oversight on public and private construction projects.

Suggestions for Potential Improvement

- Create a policy that details how to maintain accessibility and provide designated space for pedestrians and bicyclists through a Construction Management Plan (CMP)
- Cities that have created a CMP include:
    - http://www2.oaklandnet.com/oakca1/groups/pwa/documents/memorandum/oak062315.pdf

Roadway Safety Coordinator (Opportunity)

A roadway safety coordinator provides guidance for pedestrian/bicycle planning efforts and oversees implementation of programs and helps with capacity building of staff. In a sampling of pedestrian-oriented California cities, a common denominator among cities (with a population over 100,000) is a full-time pedestrian/bicycle coordinator.

City safety committee reviews facilities annually. But the city does not have a Roadway Safety Coordinator.

Suggestion for Potential Improvement

- Include dedicated time for the pedestrian and bicycle staff person to write grants for both capital projects and ongoing funding for walking and biking related programs and optics as well as to liaison with local non-profit, advocacy groups, and schools.

Formal Advisory Committee (Key Strength)

Advisory committees serve as important sounding boards for new policies, programs, and practices. Responding to public concerns through public feedback mechanisms represents a more proactive and inclusive approach to bicycle and pedestrian safety compared to a conventional approach of reacting to crashes.

The city has a formal, active/on-going Transportation Advisory Committee which advises the local transportation commission.

Equitable Community Engagement Strategy that Includes Community Based Organization (CBO) Involvement (Enhancement)

Having multiple touch points with the community creates transparency and open lines of communication between the city staff, residents, and businesses. Different kinds of formats and venues for public involvement and feedback allows for broader participation from the community. Consideration of local demographics (e.g., languages spoken) and the easiest formats for people to participate (e.g., online, in person but in the course of their daily activities, or at city-organized meetings) are important for meaningful and productive community dialogue.

Community engagement is an on-going process and does not only happen during the duration of the project, but also leading up to and after the project is completed.

The city has an equitable public outreach strategy, but formal community engagement events happen on a project-by project basis and/or without CBO partnerships.

Suggestion for Potential Improvement

- Add "safety" or bicycle and pedestrian specific issues as the "work type" when people place a pin in 311 for easy coding and understanding of issues.
- Provide quarterly or annual updates to the community on the "state of walking and biking", including recently completed projects, anticipated timeline for upcoming projects, and what the city plans to fund.
- Provide notices and interpretation in the most commonly spoken languages.
- Agencies that have an equitable community engagement strategy:
    - LA DOT Livable Streets: https://ladotlivablestreets.org/content-detail/Dignity-Infused-Community-Engagement-Strategy#:~:text=The%20Vision%20Zero%20Dignity%2DInfused,into%20the%20technical%20planning%20process

Traffic Calming or Speed Management Program

Traffic calming programs and policies set forth a consensus threshold on neighborhood requests and approvals, as well as standard treatments and criteria.

The city does not have traffic calming or speed management program, and their investigations are driven by complaints from public.

Suggestion for Potential Improvement

- Increase the amount of dedicated funding available for traffic calming each year.
- Expand the city's traffic calming toolbox to include other tools, such as raised crosswalks, raised intersections, chicanes, and traffic diverters. The city should review their speed management program annually alongside the CIP project list to identify major arterials and neighborhood corridors to include proactive speed management.

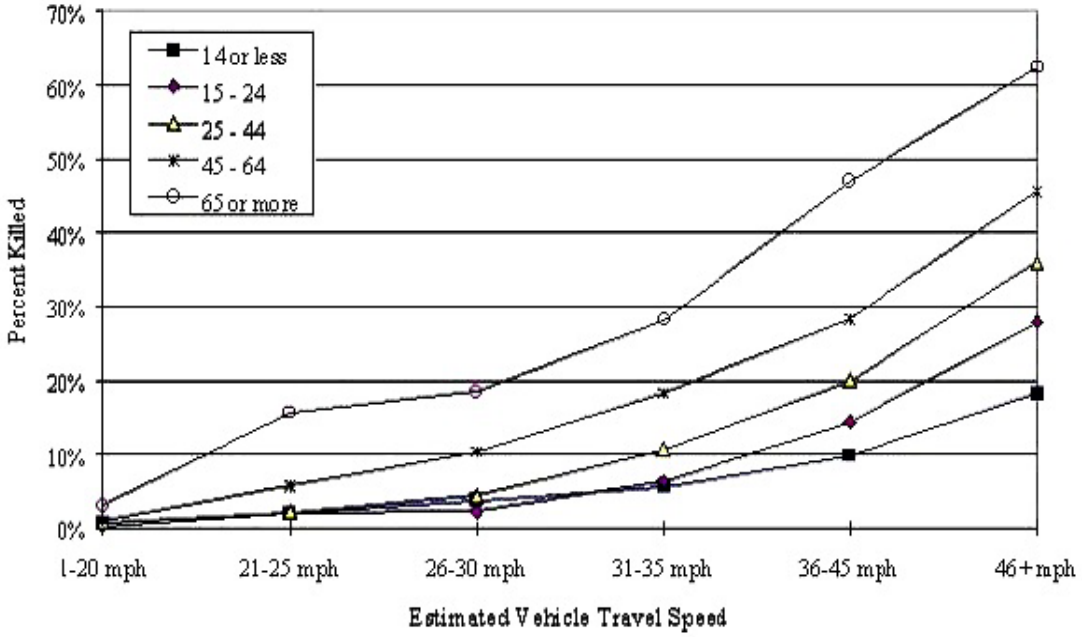
- Expand the city's practices to include proactive traffic calming measures instead of only responding to community requests. The city could consider allocating a portion of funding to proactive traffic calming, such as on bicycle boulevard streets or safe routes to schools, and then allocate the remaining funding to react to specific community requests.
- Refer to the following resources for traffic calming best practices:
    - www.trafficcalming.org
    - Traffic Calming Guidelines from the City of Danville (https://www.danville.ca.gov/DocumentCenter/View/139/NTMP-Guidelines-Booklet-PDF)
    - Neighborhood Traffic Management Program from the City of Anaheim (https://www.anaheim.net/2841/NTMP3)
    - ITE Technical Resources — Traffic Calming Measures: (https://www.ite.org/technical-resources/traffic-calming/traffic-calming-measures/)

Speed Limit Settings (Opportunity)

Agencies should regularly survey speeds and identify locations with high deviation from target speeds. Local municipalities use best practices for speed management from AB 43 to lower speed limits. Implementing lower speed limits is done using a consistent approach that prioritizes areas with historic under investment.

The city reviews data only in response to reported concerns. Speed limits are set by municipal code. Most streets are not posted. Residential is 25 mph.

Figure 3-1. Relationship between Vehicle Speed, Victim Age, and Fatalities



Suggestions for Potential Improvement

- Install traffic calming measures, signal coordination, and similar tools to maintain slower speeds appropriate for an urban community, particularly on streets that will be reviewed in the next speed survey.
- After complete streets improvement and other safety improvements are installed, conduct off-cycle speed surveys to review the speed limit and see if it needs to be reduced based on the improvements.
- Consider pedestrian volumes and known complete streets safety issues when setting speed limits and employ traffic calming strategies in locations where speed surveys suggest traffic speeds are too high for pedestrian and bicyclist safety.
- Ensure complete streets design standards have appropriate target design speeds for urban areas and do not contribute to a routine need for traffic calming.
- Consider the use of 15 MPH school zones.
- Additional information on AB 43 can be found here:
    - https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB43
    - San Francisco's Speed Limit Setting in Business Districts: https://sfmayor.org/article/san-francisco-lowers-speed-limits-targeted-business-districts-under-new-state-law

Safe Routes to Schools (Opportunity)

Safe Routes to School (SRTS) programs encourage children to safely walk or bicycle to school. The Marin County Bicycle Coalition was an early champion of the concept, which has spread nationally (refer to best practices at www.saferoutestoschools.org). SRTS programs are important both for increasing physical activity (and reducing childhood obesity) and for reducing morning traffic associated with school drop-off (as much as 30% of morning peak hour traffic).

The city does not have a Safe Routes to Schools program and has not obtained recent funding in the last 4 years.

Suggestion for Potential Improvement

- Form an ongoing steering committee for the program (or each school) comprised of city staff, school district staff, PTA leaders, and other stakeholders that meets regularly to monitor efforts and identify new opportunities.
- Consider a safe route to school plan for all schools that is integrated with other policies and programs to conduct walk audits, identify recommended safety improvements, and secure funding for those improvements.

Systemic Signalized and Unsignalized Intersection Enhancements

Has a formal policy for systemic signalized intersection enhancements that follows a Safe System-based framework and proactively implements FHWA's Proven Safety Countermeasures to manage speed and crash angles and considers risk exposure.

In Crescent City, only signalized intersections are on state system or city/county interface.

Suggestion for Potential Improvement

- Develop a city or countywide crosswalk policy for the installation, removal, and enhancement of crosswalks at controlled and uncontrolled location. Ensure that it is consistent with best practices and recent research. This includes removing crosswalks only as a last resort and providing midblock crossings where they serve pedestrian desire lines.
- Consider developing a treatment selection "tool" to assist staff with the identification of applicable treatments in a given context.
- When crosswalk enhancements are identified, add them to a prioritized list that will be upgraded over time as funding is available.

FHWA resources include:

- Federal Highway Administration Safe System-Based Framework and Analytical Methodology for Assessing Intersections: https://safety.fhwa.dot.gov/intersection/ssi/fhwasa21008.pdf

- Federal Highway Administration Proven Safety Countermeasures https://safety.fhwa.dot.gov/provencountermeasures/

- Federal Highway Administration STEP Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations: https://safety.fhwa.dot.gov/ped_bike/step/docs/STEP_Guide_for_Improving_Ped_Safety_at_Unsig_Loc_3-2018_07_17-508compliant.pdf

- National Cooperative Highway Research Program Application of Pedestrian Crossing Treatments for Streets and Highways: http://www.trb.org/Publications/Blurbs/175419.aspx

Safety-focused Curbside Management (Opportunity)

Shared mobility services are transportation services — typically offered by private companies — that offer ride-hail services (e.g., Lyft or Uber) for both solo and pooled trips, bike share, and scooter share. Policies for shared mobility services can allow agencies to encourage, prohibit, or direct how they want shared mobility to work in their agency. They can allow for curb space management, clear organization of sidewalk space, and encourage (or discourage) private vendors to come to the city/county. Curb space management is a practice that requires curb access to be planned, designed, operated, and maintained to enable curb utilization with safe, convenient, and multimodal access for all transportation users and provides driver education programs for fleet drivers.

Crescent City has no curbside management program or policies in place.

Suggestion for Potential Improvement

- Adopt a curb management plan to designate how the city will prioritize and proactive plan for curb uses (e.g., parking, passenger loading, commercial loading, ADA loading and parking, bicycle parking, bus-only lanes) and to make sure that the curb has the highest and best use of space.
- Consider micro-mobility policies (e.g., permitting, enforcement) in place to prioritize pedestrian and bicyclist safety and keep the sidewalk organized and usable for people of all abilities.
- Curbside management policy and education resources:
    - NYC Vision Zero Education: https://www1.nyc.gov/content/visionzero/pages/education
    - NYC Vision Zero Outreach: https://www1.nyc.gov/site/tlc/about/tlc-vision-zero-outreach.page
    - NYC Vision Zero Safety Toolkit for Trucks: https://www1.nyc.gov/content/visionzero/pages/trucks

Policies Supporting Micromobility (Opportunity)

Micromobility should prioritize low-stress facilities in areas with high micromobility use and built into network planning and design for all projects with retail or in urban space.

The city has no shared micromobility policies are in place.

Suggestions for Potential Improvement

- Create a micromobility policy and implement speed regulators in geofenced locations
- NACTO Resources include:
- https://nacto.org/wp-content/uploads/2019/09/NACTO_Shared_Micromobility_Guidelines_Web.pdf

Connected and Automated Vehicle (CAV) Readiness (Opportunity)

As CAV technology is deployed, strategies and readiness to discuss the interface between technology and human road users, the role of smart infrastructure, and the need for physical separation of AVs and vulnerable road users.

The city has no policy around C/AV readiness.

Suggestions for Potential Improvement

- Create a policy that strategizes the oncoming challenges posed by CAV technology
- FHWA Resources include:
    - https://www.fhwa.dot.gov/policy/otps/policyanalysis.cfm

Heavy Vehicle Fleets and Truck Routing (Opportunity)

As the conversation around heavy vehicle fleets and truck routings are changing, local jurisdictions must be prepared to identify incorporation of these fleets along with funding. Identifying dedicated routes or boundaries within city/county boundaries allows for parallel routes of pedestrian and bicycle corridors.

The city has no policy around future fleets and truck routing.

Suggestions for Potential Improvement

- Create a policy that identifies future fleet incorporating, funding, and dedicated routes for daily use

Public Advertisements Supporting Safety Culture (Opportunity)

Culturally relevant and accessible education campaigns and outreach should occur regularly and on various platforms

Crescent City does not implement culturally relevant and accessible education campaigns.

Suggestions for Potential Improvement

Additional resources on successful safety culture campaigns can be found below:

- Stick to the Limits San Francisco: https://www.sticktothelimitsf.org/

Adopted Safety Plan (Key Strength)

A Local Road Safety Plan (LRSP) or Caltrans-approved safety report identifies dedicated, annual funding stream for bicycle and pedestrian projects within underserved communities. Bicycle and pedestrian projects can also be integrated in the other work that the city does, including repaving and other routine maintenance of the roadway network.

The city has an approved LRSP or other Caltrans-approved safety report that identifies funding sources.

The dedicated annual funding stream that the city uses for bicycle and pedestrian projects are:

- General City Funds
- Local tax measure funds

The city also applies for the following grants:

- Surface Transportation Program Funding
- Highway Safety Improvement Program (HSIP)
- Active Transportation Program (ATP)
- Safe Routes to School Grant (SRTS)

Suggestion for Potential Improvement

- Partner with other agencies and continue applying for grant funding for both infrastructure and non-infrastructure projects.
- Integrate bicycle and pedestrian projects into the site plan review process for new development.
- Secure additional funding for repaving projects to allow for "quick build" projects and other bicycle and pedestrian safety improvements to be integrated into those projects.
- Establish a dedicated funding source for pedestrian and bicycle projects.

Safe System Policy (Opportunity)

A Safe System policy with redundancy built in for transportation projects includes all users and modes, affects new construction and maintenance, considers local context, and provides guidance for implementation.

The city does not have a safe system policy.

Collection of Pedestrian and Bicyclist Volumes (Enhancement)

Pedestrian and bicyclist volume data, along with a GIS database, is important for understand where people walk and bike. This establishes baseline data prior to project implementation and can help prioritize projects, develop crash rates, and determine appropriate bicycle and pedestrian infrastructure. The database helps to identify patterns and needs of underserved communities in local jurisdictions policies and programs.

The city collects pedestrian and bicyclist volumes on a project-by-project basis, when required by grants, but not routinely.

Suggestions for Potential Improvement

- Routinely collect pedestrian and bicycle volumes by requiring them to be counted in conjunction with manual intersection turning movement counts. https://mtc.ca.gov/sites/default/files/4_AOC_Tech_Transfer_Seminar_Banner_06032013.pdf
- Geocode pedestrian volume data with GIS software along with other data such as pedestrian control devices and crashes to analyze data for trends or hotspots related to pedestrian safety.

Inventory of Bikeways, Parking, Informal Pathways, and Key Bicycle Opportunity Areas (Enhancement)

- Migrate the inventory of bikeways, bike parking, and future bike improvements into a GIS format for quick mapping and sharing.
- Identify a staff person responsible for maintaining the GIS data set.

The city has a partial, static inventory through Bike, Pedestrian, or Active Transportation Plans.

Inventory of Sidewalks, Informal Pathways, and Key Pedestrian Opportunity Areas (Key Strength)

A GIS-based sidewalk inventory enables project identification and prioritization, as well as project coordination with new development, roadway resurfacing, and so on. This data set can be available on the city's website for knowledge sharing with the public as well as agencies.

The city maintains inventory of existing sidewalks and crosswalks in GIS and includes sidewalk and crosswalk projects in the CIP.

Suggestion for Potential Improvement

- Create a citywide inventory of existing and missing sidewalks, informal pathways and key pedestrian opportunity areas in GIS.
- Consider establishing a program to work with property owners to repair damaged sidewalks outside their property. This can be a condition for the sale of the property.

Traffic Control Audit (Signs, Markings, and Signals) (Enhancement)

Cities have a wide variety of traffic control devices that regulate how bicyclist and pedestrians should use the street and interact safely with drivers. However, some cities do not have inventories how, when, and where this is installed. Creating a database of this information allows the city's staff to know where infrastructure may be out of date or in needed of updates. For example, countdown signals are important pedestrian safety countermeasure. The 2012 California *Manual of Uniform Traffic Control Devices* (MUTCD) requires the installation of countdown pedestrian signals for all new signals. Likewise, the CA MUTCD also requires installation of bike detection at all actuated signals. Bike detection is a basic building block of the bike network to make sure that bikes can trigger the traffic signal. Inventorying bike detection and countdown signals allows the city's staff to approach safety from a systems perspective and develop projects to close gaps in biking and walking infrastructure over time.

The city has some GIS-based inventories of signs, markings, other countermeasures, and signals.

Suggestion for Potential Improvement

- Develop a city or countywide crosswalk inventory in GIS and maintain it over time. This would allow for a systemic safety approach to enhancing crosswalks and allow the city to prioritize all crosswalk enhancement projects city or countywide for implementation over time and as money is available.
- Ensure that locations with pedestrian desire lines have safe crosswalks. An updated crosswalk policy can help determine the appropriate crossing treatment at uncontrolled locations without marked crosswalks.
- Include maintenance records within the GIS database inventory of signs, markings and signals.
- Develop a proactive monitoring program for ensuring the quality and proper functioning of traffic control devices.

Crash History and Crash Reporting Practices (Enhancement)

Safety is typically approach through both proactive and reactive measures. Identifying and responding to crash patterns on a regular basis and in real time is an important reactive approach to bicycle and pedestrian safety, which may be combined with other proactive measures. This is the traditional way most cities have approached safety. However, many are now looking to proactive safety to address safety issues on a system wide basis. This is often paired with a policy goal of getting to zero fatality or severe injury crash (commonly referred to as "Vision Zero").

The city does not have set practices for data review and uses local data from Police Services or similar (not TIMS/SWITRS).

Suggestion for Potential Improvement

- Adopt a data driven systemic safety approach, which would include a systems approach to identifying, prioritizing, and ultimately implementing safety countermeasure and/or a formal commitment to Vision Zero.
- Work with elected officials and department heads to adopt a Vision Zero policy formally stating the city's commitment to reducing the number of traffic-related fatalities and severe injuries to zero.
- Additionally, with sufficient pedestrian volume data, the city could prioritize crash locations based on crash rates (i.e., crashes/daily pedestrian volume), a practice that results in a more complete safety needs assessment. Treatments could then be identified for each location and programmatic funding allocated in the city's Capital Improvements Program (CIP).
    - The City of Sacramento's Pedestrian Master Plan includes a section on how to prioritize locations based on crash rates: http://www.cityofsacramento.org/transportation/engineering/publications.html

Surrogate Safety Measures for Proactive Monitoring

Innovative data collection techniques such as hard breaking, speed, and near miss data can provide additional insights into crashes. Community feedback tools such as Street Story can assist local jurisdictions to collect data: https://safetrec.berkeley.edu/tools/street-story-platform-community-engagement

Complete Streets Policy (Opportunity)

Complete Streets Policies are formal statements showing a city's commitment to planning and designing for all modes of travel and travelers of all ages and abilities.

The city does not have a Complete Streets policy.

Suggestion for Potential Improvement

- The following jurisdictions have established practices for complete streets, including implementation of these policies through multimodal level of service thresholds, and may serve as models:
    - Boston, Massachusetts, Boston's Complete Streets: http://bostoncompletestreets.org/about/
    - Philadelphia, Pennsylvania, Philly Free Streets: http://www.phillyfreestreets.com/
    - Baltimore, Maryland, Complete Streets Ordinance: https://transportation.baltimorecity.gov/completestreets
    - South Bend, Indiana, Complete Streets Policy: https://www.smartgrowthamerica.org/app/legacy/documents/cs/policy/cs-in-south-bend-resolution.pdf
    - Town of Ashland, Massachusetts, Complete Streets Policy: https://www.smartgrowthamerica.org/app/legacy/documents/cs/policy/cs-ma-ashland-policy.pdf

Active Transportation Plan (Enhancement)

This type of plan includes a large menu of policy, program, and practice suggestions, as well as site-specific (and prototypical) engineering treatment suggestions. Bicycle and Pedestrian Master Plan(s) documents a jurisdiction's vision for improving walkability, bikeability, and bicycle and pedestrian safety; establish policies, programs, and practices; and outline the prioritization and budgeting process for project implementation.

The city has a Pedestrian and/or Bicycle Master Plan but it may be outdated and/or no recent projects from the Plan have been completed.

Suggestion for Potential Improvement:

- Implement the low-hanging projects in the Bicycle and Pedestrian Master Plan and seek grant funding for major projects
- Pursue additional funding opportunities for programs identified by the Plan.
- Provide regular updates to the Plan, including bicycle and pedestrian facilities and design guidelines that address the needs of bicyclists and pedestrians of all ages and abilities
- Develop high injury networks for walking and biking to identify routes with the highest incidences of fatal and severe injuries for pedestrians and bicyclists. This will create a systematic safety analysis that can help in prioritizing limited resources.
- Consider identifying existing and missing bicycle and pedestrian infrastructure for safety improvement.

Existing Bike Network (Enhancement)

Innovative features such as protected bikeways, bike boulevards, and protected intersections citywide or countywide can decrease the level of traffic stress experienced by bicyclists, make biking more comfortable, and — in so doing — appeal to a wide range of bicyclists. Level of traffic stress refers to the level of comfort or discomfort a bicyclist might experience. Research conducted by the Mineta Institute in San Jose establishes levels of traffic stress on a scale for 1 to 4 with LTS 1 at the level that most children can tolerate and LTS 4 at the level characterized by "strong and fearless" cyclists (see: http://transweb.sjsu.edu/project/1005.html). A bicycle network that is attractive to the majority of the population would have low stress and high connectivity.

City's existing bike network primarily includes Class I, II, and III facilities. There are gaps within the bike network and facilities do not accommodate all users.

Suggestion for Potential Improvement:

- Continue to identify funding sources and implement the proposed projects identified in the Bicycle and Pedestrian Master Plan.
- Develop design standards for bike boulevards, trails, paths, and landscaping for bicycle network.
- Create a GIS data for existing bike network to identify gaps and opportunities for improvements.

Existing Pedestrian Facilities (Opportunity)

City has sidewalk gaps and missing key marked crosswalks and sidewalks.

Suggestion for Potential Improvement:

- Continue to identify funding sources and implement the proposed projects identified in the Bicycle and Pedestrian Master Plan.
- Create a GIS database for existing pedestrian infrastructure to identify gaps, inventory assets, and create opportunities for systemic safety analysis of all crosswalks.

Bike and Pedestrian Network Implementation Practices (Opportunity)

Considering the safety and comfort of people walking and biking leads to better projects that can encourage new walking and biking trips and enhance safety for active transportation users today and in the future.

Bicycle Level of Traffic Stress (LTS) was originally developed by researchers at the Mineta Transportation Institute. LTS assesses the comfort and connectivity of bicycle networks.

Treatments are implemented where they fit within the right-of-way and on a project-by-project basis.

Suggestion for Potential Improvement:

- Prioritize bicycle projects to align with roadway resurfacing and projects that are near school sites.
- Identify pedestrian priority areas and have a policy in place around crosswalk spacing and design enhancements
- Secure enough funding for repaving and other complete streets projects to allow for installation of protected bike and pedestrian facilities and intersection improvements.
- Prioritize Use LTS to strategically implement bikeways and traffic calming treatments that would improve LTS of existing bikeways.

Design Guidelines and Standards (Opportunity)

Design guidelines and development standards create a clear set of documents that guide how all transportation improvements should be installed in the city. As a result, they can create a consistent, high-quality biking and walking experience.

City's local standards reference national best practices, with minimal customized design policies for pedestrian and bicycle accommodations.

The city considers reducing the number of vehicle travel lanes and narrowing vehicle travel lanes when designing bicycle facilities.

The city uses CA MUTCD and the Highway Design Manual when making design decisions.

Suggestion for Potential Improvement

- Consider adopting national bicycle and pedestrian safety best practices for roadway and facility design guidelines and standards:
    - NACTO Urban Street Design Guide: http://www.nyc.gov/html/dot/downloads/pdf/2012-nacto-urban-street-design-guide.pdf
    - CROW Design Manual for Bicycle Traffic
    - FHWA Separated Bike Lane Planning and Design Guide https://nacto.org/wp-content/uploads/2016/05/2-4_FHWA-Separated-Bike-Lane-Guide-ch-5_2014.pdf
    - MassDOT Separated Bike Lane Planning & Design Guide https://www.mass.gov/lists/separated-bike-lane-planning-design-guide
    - ITE Recommended Practice for Accommodating Pedestrians and Bicyclists at Interchanges
    - AASHTO Guide for the Development of Bicycle Facilities https://nacto.org/wp-content/uploads/2015/04/AASHTO_Bicycle-Facilities-Guide_2012-toc.pdf

AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
https://transops.s3.amazonaws.com/uploaded_files/Update%20of%20the%20AASHTO%20Guide%20for%20the%20Planning%2C%20Design%2C%20and%20Operation%20of%20Pedestrian%20Facilities.pdf

Roadway Surfaces for Bicycle Facilities (Opportunity)

The quality of a roadway surface along bikeways is an important consideration when choosing to bike. Rough surface in a bike lane creates an uncomfortable bicycling experience and may also pose safety hazards.

Crescent City's roadway surface conditions are poor on some bicycle facilities and maintenance is not prioritized for bicycle facilities.

Suggestion for Potential Improvement:

- Prioritize maintenance of roadways where bicycle facilities are present, particularly for closing gaps in the bikeway network or where improved pavement quality is needed on popular bicycle routes.
- Prioritize debris removal on roadways where bicycle facilities are present.
- Assess the needs for new and enhanced crosswalks and curb ramps with each repaving project. Include consideration of lane reductions and quick build projects such as paint and plastic median refuges and bulb outs; high-visibility crosswalks; and advanced yield markings.

Attention to Bicycle and Pedestrian Crossing Barriers (Opportunity)

Crossing barriers — such as railroads, freeways, and major arterials — may discourage or even prohibit bicycle access and are often associated with vehicle-bicycle crashes. Large intersections and interchanges and uncontrolled crossings can often deter bicyclists due to high speeds, high number of conflict points with vehicles, and high level of exposure. Identifying and removing barriers and preventing new barriers is essential for improving bicyclist safety and access. Crossing barriers also discourage or even prohibit pedestrian access and can create safety challenges for pedestrians. These can be similar to the biking barriers or present additional challenges.

In the city, bike treatments are rarely installed at intersections or through interchanges. The city has no policy but has identified some barriers and taken steps to improve pedestrian access.

The city uses high visibility crosswalk striping at uncontrolled crossings.

Suggestion for Potential Improvement:

- Use green routinely to highlight conflict zones at large intersection and interchanges. See Oakland's bicycle lane striping guidance for more information: http://www2.oaklandnet.com/government/o/PWA/o/EC/s/BicycleandPedestrianProgram/OAK024653

- To slow speeds at critical intersections, use smaller corner radii using small design vehicles appropriate for urban areas and updated standard plans to reflect this.

- Review design of slip/trap-right lanes at intersections and implement improvements.

- Implement best practice guidance on bicycle accommodation through interchanges and expressways, as appropriate, using the ITE's *Recommended Practice: Guidelines to Accommodate Bicyclist and Pedestrians at Interchanges* plus consideration of protected bike lane design.

- Identify and create an inventory of pedestrian barriers with targeted recommendations for phased improvements.

- Consider pedestrian barriers and needs in doing bicycle barriers assessment.

Intersection Control Evaluation (Opportunity)

Providing alternative traffic controls such as roundabouts, signals, and stop signs may improve pedestrian and bicycle safety by reducing speeds and controlling vehicle conflicts. Installing bicycling signals and limiting stop signs on bicycle routes may enhance bicycle mobility and safety. The CA MUTCD defines warrants for installing signals and stop signs.

The city does not have a practice of using Intersection Control Evaluations, so few crashes or issues that often nothing is warranted.

Suggestion for Potential Improvement

- Develop specific signal and stop sign warrants that are pedestrian- and bicycle-friendly.

Sidewalk Furniture or Other Sidewalk Zone Policies (Opportunity)

Street furniture encourages walking by accommodating pedestrians with benches to rest along the route or wait for transit; trash receptacles to maintain a clean environment; street trees for shade, and so on. Uniform street furniture requirements also enhance the design of the pedestrian realm and may improve economic vitality.

The city has no design standards requiring implementation of the sidewalk zone system.

Suggestion for Potential Improvement

- Adopt a Street Furniture Ordinance to include locations and furniture amenities other than those associated with transit stops, as appropriate.

Street Tree Requirements (Opportunity)

Street trees enhance the pedestrian environment by providing shade and a buffer from vehicles, which increase pedestrian safety. Street trees may also enhance property values, especially in residential neighborhoods. However, street trees, when improperly selected, planted, or maintained, may cause damage to adjacent public utilities.

The city does not have a street tree ordinance.

Suggestion for Potential Improvement

- Develop a Street Tree Ordinance to provide guidance on permissible tree types and permitting requirements, also specifying a requirement for new trees plantings associated with development projects.

Bicycling Supportive Amenities and Wayfinding (Opportunity)

In addition to designating roadway or paths in a bicycle network, supportive amenities (including parking, water fountains, and maintenance stations) can encourage bicycling. Wayfinding can both encourage bicycling and enhance safety by navigating cyclists to facilities that have been enhanced for bicyclist use or to local retail opportunities for economic growth.

The city does not provide bicyclist supportive amenities.

Suggestion for Potential Improvement:

- Create and deploy a bicycle wayfinding strategy city/countywide as recommended in the Bicycle and Pedestrian Master Plan, as well as a Biking Guide.

- Develop a Biking Guide that includes a bike map and bicycle locker and rack locations.

Bicycle Parking Requirements (Opportunity)

Safe and convenient bicycle parking is essential for encouraging bicycle travel (especially in-lieu of vehicle travel). Bicycle parking can also facilitate last-mile connections between two modes, such as bicycle parking at a transit station. To be effective, bicycle parking needs to be visible and secure and have enough capacity to accommodate bicycle demand, both long-term and short-term. Long-term and short-term parking can be implemented through a bicycle parking ordinance as in the City of Oakland (see details at http://www2.oaklandnet.com/Government/o/PWA/o/EC/s/BicycleandPedestrianProgram/OAK024596).

No bike parking ordinance or program is in placebo the city has installed bike racks at some city facilities.

Suggestion for Potential Improvement:

- Implement short-term and long-term, secured bicycle parking at all new development, consistent with the *Bicycle and Pedestrian Master Plan and the APBP Bicycle Parking Guidelines, 2nd edition.*

- Site bicycle racks to be convenient for bicyclists, out of the way of pedestrians, and with good visibility for security, consistent with the *APBP Bicycle Parking Guidelines, 2nd edition.*

- Consider implementation of “branded” racks for the city/county (with a unique design or city/county’s symbol).

Pedestrian and Bicycle Safety Education Program (Opportunity)

Engineering treatments are often not enough on their own to realize full safety benefits associated with the treatment. Safety education programs complement engineering treatments and increase compliance. Education campaigns target drivers and people of all ages, especially school-age children where safe walking and biking habits may be instilled as lifelong lessons.

The city does not have pedestrian and bicycle safety education programs.

Suggestion for Potential Improvement

- Conduct a formal education campaign targeting people driving, walking, and biking about street safety. This includes advertisements on buses and bus shelters, an in-school curriculum, community school courses, public service announcements, and many other strategies. Consider a focus on speed and safe driving.

Enforcement (Opportunity)

Enforcement of pedestrian and bicycle right-of-way laws and speed limits is an important complement to engineering treatments and education programs.

The city's police department does not have Traffic Safety Officer(s).

The 3-Es of Pedestrian Safety:

Engineering

Education

Enforcement

Suggestion for Potential Improvement

- Implement sustained pedestrian safety enforcement efforts and involve the media. Use enforcement as an opportunity for education by distributing pedestrian safety pamphlets in-lieu of, or in addition to, citations. The Miami-Dade Pedestrian Safety Demonstration Project provides a model for the role of media in the sustained effectiveness of enforcement. Information is available at: http://www.miamidade.gov/MPO/docs/MPO_ped_safety_demo_eval_report_200806.pdf.

- Train officers in pedestrian safety enforcement principles. The Madison, Wisconsin Department of Transportation has developed a DVD in collaboration with the Madison Police Department to train traffic officers in pedestrian and bicycle issues (for more information see http://www.walkinginfo.org/library/details.cfm?id=2865). The Bicycle Transportation Alliance in Portland, Oregon offers Pedestrian Safety Enforcement Training (for more information on this five-hour course see: http://www.bta4bikes.org/at_work/pedestriangrants.php).

- Establish a radar gun check-out program for trained community volunteers to record speeding vehicles' license plate numbers and send letters and/or document occurrences. Radar gun check-out programs are available in Albany, Pleasanton, and Thousand Oaks, California, among other cities (for more information on the Pleasanton program see: http://www.sfgate.com/cgi-bin/article.cgi?file=/c/a/2004/04/07/MNG8N6/04/07/MNG8N6 1MGG1.DTL).

Pedestrian Walking Audit Program (Enhancement)

Walking audits provide an interactive opportunity to receive feedback from key stakeholders about the study area and to discuss the feasibility of potential solutions. They can be led by city staff, advocacy groups, neighborhood groups, or consultants.

The city has no safety program but has conducted walking audits sporadically.

Suggestion for Potential Improvement

- Include regular walking audits in city/countywide pedestrian safety program, based on the suggestions of this CSSA. This effort may complement other "green" or health-oriented programs within the city.

Bicycling Safety Audit Program (Opportunity)

When city staff and key stakeholders ride along study corridors and experience key route and crossing challenges and best practices, consensus is more readily reached on a vision and action plan for safety enhancements.

The city does not have bicycling safety audit programs.

Suggestion for Potential Improvement

- Include regular bicycling audits in the city/countywide bicycle safety programs. Encourage interdepartmental participation.
- Routinely conduct bicycle safety audits of key corridors throughout the city/county, including those with recent improvements, those with heavy bicycle demand, and those with high crash rates.
- Collaborate with schools on projects beyond the school district boundaries.

General Plan: Provision for Pedestrian and Bicycle Nodes (Opportunity)

Planning principles contained in a city's General Plan can provide an important policy context for developing pedestrian-oriented, walkable areas. Transit-oriented development, higher densities, and mixed uses are important planning tools for pedestrian-oriented areas. The General Plan identifies pedestrian priority areas, which are zones in which high volumes of pedestrian traffic are encouraged and accommodated along the sidewalk.

Suggestion for Potential Enhancement

- Create an overlay district for pedestrian priority areas with special pedestrian-oriented guidelines, such as relaxing auto Level of Service standards and prioritizing pedestrian improvements. Prioritize sidewalk improvement and completion projects in these nodes.
- Utilize vehicle miles traveled (VMT) for future transportation impact analysis.

General Plan: Safety Element (Opportunity)

SB 99 and AB 747 are legislation around safety evacuation during natural disasters. Local jurisdictions should identify creative solutions on how to evacuate residents safely and efficiently while maintaining and implementing low stress pedestrian and bicycle facilities.

Bike Ordinances (Sidewalk Riding) (Opportunity)

The city has no bike ordinance.

Suggestion for Potential Improvement:

- Consider an optional helmet ordinance for adults.
- Consider allowing for context-specific flexibility in sidewalk riding policies and enforcement

Vehicle Mikes Traveled (VMT) Mitigation Strategies (Enhancement)

A VMT Mitigation Strategy should use the most recent guidance from CAPCOA to measure potential impacts of pedestrian and bicycle facilities.

- CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity: https://www.caleemod.com/documents/handbook/full_handbook.pdf

The city uses mitigation measures identified in CAPCOA are used independently on a project-by-project basis.

General Plan: Densities and Mixed-Use Zones

Planning principles contained in a city's General Plan can provide an important policy context for developing bicycle-oriented and walkable areas. Transit-oriented development, higher densities, and mixed uses are important planning tools for pedestrian-oriented areas.

Suggestion for Potential Improvement

- Utilize vehicle miles traveled (VMT) for future transportation impact analysis.
- Consider allowing moderate to high densities in the downtown and mixed-use zones as well progressive parking policies, such as shared parking and demand-based pricing.
- Consider multi-modal trade-offs in the transportation impact analysis for new development, so that the safety and needs of people walking and biking is weighed heavily, and vehicular delay is not the primary performance measure.
- Ensure that wide sidewalks, high quality, protected bike lanes, and intersection safety improvements are included with all new development projects, particularly where densities are higher
- Strongly weigh walking and biking performance measures as well as safety metrics in determining appropriate intersection improvements and street design.

Specific Plans, Overlay Zones, and Other Area Plans (Opportunity)

The city's plans do not address bicyclist or pedestrian needs or do not exist.

Suggestion for Potential Improvement

- Emphasize bicyclist and pedestrian-oriented design, walkability, and/or placemaking in all new specific plans, overlay zones, and other area plans.

Historic Sites (Enhancement)

Historic walking routes or bike trails, such as the famous Freedom Trail in Boston, encourage active transportation and enhance economic vitality.

The city's historic areas have been identified, but no plans.

Suggestion for Potential Improvement

- Continue to implement the goals, policies and programs that support walking trips included in the Historic Preservation and Community Design Element of the General Plan to showcase natural or local sites of interest, and link key features of the city. Maps of the tour route and historic documentation materials could be made available online or as a mobile app in addition to wayfinding signs, maps, and plaques could also be provided throughout the city. Consider other areas of the city/county for walking tours and historic signs.

- Consider upgrading History Walk signs with larger text to improve legibility and wayfinding.

Economic Vitality (Opportunity)

Improving bicycle and pedestrian safety and walkability can enhance economic vitality. Similarly, enhancing economic vitality through innovative funding options such as Business Improvement Districts (BIDs), parking management, and facade improvement programs can lead to more active areas and encourage walking and bicycling.

The city does not have business improvement districts, a façade improvement program, or downtown parking policies.

Sample store facades

Suggestion for Potential Improvement

- Activate the built environment in business areas through BIDs and façade improvement programs.
- Use wayfinding, walking routes, and events to direct pedestrians to commercial areas throughout the area.
- Install bicycle parking in commercial areas and provide safe, comfortable bike facilities in commercial areas to make it convenient and fun to get to local businesses.

Post-Crash Care (Opportunity)

An agency's adopted LRSP or Caltrans-approved Safety Plan should include resources for the agency to implement identified countermeasure for medical rehabilitation, on-going advocacy group engagement, and resources for the adjudication process to ensure offenders receive proper sentencing and treatment.

The city's adopted LRSP or Caltrans-approved Safety Plan does not include action items and implementation strategies surrounding post-crash care.

Proactive Approach to Institutional Coordination (Key Strength)

Institutional coordination associated with multiple agencies and advocacy groups is a critical part of the work of any municipality. Non-local control of right-of-way and differing policies regarding pedestrian and bicyclist accommodation can make the work complex.

The city has identified obstacles and proactive coordination with advocacy groups and public health services where multiple facility owners (such as Caltrans or school districts) are involved and has implemented efforts to overcome barriers.

Suggestion for Potential Improvement

- Work with the local school districts to establish a policy on neighborhood-sized and oriented schools as part of a Safe Routes to School policy.
- Work with the school districts to establish suggested walking routes and address potential barriers to pedestrian or bicycle access.

Coordination with Emergency Response (Enhancement)

Emergency response requires special roadway design considerations that sometimes conflict with bicycle and pedestrian treatments. One example is the design of turning radii at intersections. Bicyclists and pedestrians benefit from the reduced vehicle speeds of smaller radii, but larger vehicles, such as fire trucks, have more difficulty performing the turn within the smaller space. These conflicts require consensus building between the city and the respective departments. Consensus building could include pilot testing of alternative treatments, such as a model traffic circle in an open field.

Emergency response is involved in some aspects of bicycle/pedestrian facility planning and design in Crescent city.

Suggestion for Potential Improvement:

- Include the Fire Department early in the process as a stakeholder in the Williams Street and Bancroft Street separated bikeway projects to ensure access needs are accommodated.
- Balance the trade-off between traffic calming safety treatments such as roundabouts or partial street closures and longer emergency response times.
- Encourage emergency and transit responders to participate in test runs of roadway designs that are aimed to reduce speed and improve bicycling access.
- Implement policies providing information on tragic incident management

Coordination with Health Agencies (Opportunity)

Involving non-traditional partners such as public health agencies, pediatricians, etc., in the planning or design of pedestrian and bicycle facilities may create opportunities to be more proactive with pedestrian and bicycle safety, identify pedestrian and bicycle safety challenges and education venues, and secure funding. Additionally, under-reporting of pedestrian-vehicle and bicycle-vehicle crashes could be a problem that may be partially mitigated by involving the medical community in pedestrian and bicycle safety planning.[2]

Health agencies are not involved in bicycle/pedestrian safety or active transportation.

Coordination with Transit Agencies (Key Strength)

Providing safe and comfortable biking and walking routes to transit stops and stations, and the ability to take bicycles on-board transit vehicles increases the likelihood of multi-modal trips.

In Crescent City, bicycles are accommodated on all transit vehicles with overflow capacity available. The agency partners with transit providers to ensure safe and comfortable routes for biking and walking to transit stops and stations, including on roadways with both frequent bus service and bicycle facilities.

Suggestion for Potential Improvement:

- Work with transit agencies, Caltrans, and other relevant partners to improve access and safety to stations and bus stops.

[2] Sciortino, S., Vassar, M., Radetsky, M. and M. Knudson, "San Francisco Pedestrian Injury Surveillance: Mapping, Underreporting, and Injury Severity in Police and Hospital Records," *Accident Analysis and Prevention*, Volume 37, Issue 6, November 2005, Pages 1102-1113

4. COMPLETE STREETS AUDIT RESULTS AND SUGGESTIONS

4.1. OVERVIEW

Complete Streets audits are typically conducted as an initial step to improve the street environment for all travel modes within the selected area. Many individuals can participate: residents, stakeholders, and affiliated individuals. During the audits, positive practices are observed and issues and opportunity areas are noted. Observations are made of the interactions among motorists, pedestrians, and bicyclists. Observations are based on the behavior of these different road users, particularly at intersections. For each opportunity area, the group discusses possible suggestions to address safety and operational concerns. Complete Streets audits are highly interactive, with many field observations. The audits are a means to observing and learning how to “see through the eyes of pedestrians and bicyclists.”

This chapter presents observations and suggestions made during field observations conducted on March 30, 2022.

Suggestions in this chapter are based on best practices and discussions with participants regarding local needs and feasibility. These suggestions are based on limited field observations and time spent in and around the city by the CSSA evaluators. These suggestions are intended to guide city staff in making decisions for future safety improvement projects on the campus; they may not incorporate all factors relevant to pedestrian and bicycling safety issues in the city. This report is conceptual in nature, and conditions may exist in the focus areas that were not observed and may not be compatible with suggestions presented below. Before finalizing and implementing any physical changes, city staff may choose to conduct more detailed studies or further analysis to refine or discard the suggestions in this report, if they are found to be contextually inappropriate or appear not to improve bicycling or pedestrian safety or accessibility due to conditions including, but not limited to, high vehicular traffic volume or speeds, physical limitations on space or sight distance, or other potential safety concerns.

4.2. FOCUS AREAS

City staff requested reviews of the focus areas listed in Table 4-1 and mapped in Figure 4-1 with an emphasis on potential alignments and cross sections for extending the Coastal Trail corridor west and north along the coast to the city limit. The evaluator explored each focus area with city staff on the field visit day. Because the COVID-19 pandemic was still underway, though public schools had returned to in-person classes and some businesses were recovering, what was observed may not reflect pre-pandemic activity.

The illustrated subsections that follow address these focus areas. Each contains an overview, observations and notes (including from staff and other field audit participants), analysis, a table of suggestions, and a concept figure if applicable.

Table 4-1: Focus Areas

#	Focus Area	Segment or intersection	Notes
1	Coastal Trail	East of Howe Drive	Markings, signs, obstructions
2		South waterfront along Howe Drive and Public Works yard, to B Street	Alignment, width, pedestrian cross-traffic, crossing of B Street
3		B Street — 2nd Street	Potential mainline and spur alignments
4		2nd Street — Pebble Beach Drive	Sidewalks, crosswalks, bicycle accommodation, guide signage
5		Pebble Beach Drive	
6		Brother Jonathan Vista Point and crosswalk	Crosswalk signs, islands, vehicle circulation and parking
7	8th Street & H Street	South leg crosswalk across H Street	Signs, markings, curb extensions

Figure 4-1: Map of Focus Areas

4.2.1. FOCUS AREA #1: Coastal Trail east of Howe Drive

Overview

Crescent City's Coastal Trail runs north from Crescent City Harbor, along Sunset Circle, across Elk Creek, behind the Visitor Center and Fred Endert Municipal Pool, then along the south side of Howe Drive to B Street before continuing north along streets near the coast. This focus area covers the segment of the Trail between the Harbor and the east end of Howe Drive.

Figure 4-2: Coastal Trail east of Howe Drive (Focus Areas 1 & 2)

Observations and Analysis

This section uses the convention that the Coastal Trail south of Elk Creek runs north-south. The following subsections are organized south to north.

Coastal Trail intersection with Huston Street spur path

Between Crescent City Harbor and Sunset Circle the Coastal Trail is an asphalt shared use path. The evaluator noted appropriate use of trail centerline — yellow, solid in conflict areas and on curves, dashed otherwise. One exception is near the Lighthouse Cove RV Park driveway, where the centerline is white.

A spur path runs along the south side of Huston Street to the US-101 traffic signal whose east leg is Elk Valley Road. The spur intersects the Trail midway between the Harbor and Sunset Circle (Figure 4-3).

The evaluator approached each leg of this path junction on a bicycle as a first-time visitor and found its geometry and warning signs confusing, and the lack of guide (destination) signs left him wondering whether to turn or continue. Northbound from the harbor (Figure 4-3(a)), the alignment of the pavement and fence line suggests that the mainline bends to the right — but that is the Huston spur to US-101 and Elk Valley Road. The Coastal Trail actually jogs through the left-side fence opening and continues toward Sunset Circle. Figure 4-3(b) shows the westbound approach from the Huston spur.

Northbound users also see a W2-1 Crossroad sign above a W1-2 Leftward Curve sign. Neither applies to this junction — it is not 4-way, and a Leftward Curve sign is intended as advance warning of a curve that may not be apparent, which is not the case here.

a) Northbound approach

b) Westbound approach on Huston spur

Figure 4-3: Coastal Trail / Huston Street spur junction

It is suggested to realign this intersection in one of several ways and use appropriate signage:

a) A conventional “T” intersection with the Coastal Trail mainline as the north-south “top” of the T and the spur to US-101 as its east “leg.” The spur would have a STOP sign; the mainline would not.

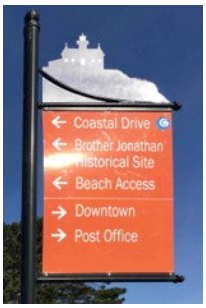
b) A conventional “Y” junction (perhaps with W2-5 Y-signs on approaches).

c) A 3-leg mini-circle with Portland-style “Flight of Arrows” signs modified to be guide signs (green background, white graphics and text), with each departure labeled with its destination.

For options (a) and (b), destinations (Downtown, Elk Valley Road, Harbor) could be indicated by MUTCD D1-Series bicycle guide signs, or by custom signs like those seen elsewhere in town.

a) MUTCD D1-series bicycle guide signs

b) City wayfinding sign (gray)



c) City wayfinding sign (orange)

Figure 4-4: Guide sign options

Figure 4-5: Portland "Flight of Arrows" regulatory signs for center-island intersections

Huston Street spur path terminus at US-101

A line of four bollards marks the end of the Huston Street spur path near US-101. The face-to-face spacing between consecutive bollards is 50," 52.5" and 53," and neither of the two middle bollards is aligned with the path centerline, so they do not properly separate the path travel directions. In addition, driveably-wide open areas remain outboard of the bollard line, so the set of bollards does not actually prevent entry by a determined motorist.

Lines of bollards across paths should be perpendicular to the path (this line is). The layout should begin with a center bollard on the path centerline, separating the travel directions. The bollards flanking the center bollard should be spaced so the face-to-face (*not* on-center) distance is 5'-0" — this will safely and comfortably enable passage by adult tricycles and wide bicycle cargo trailers while preventing entry by all two-track motor vehicles except "micro-trucks." All bollards within or adjacent to the path's traveled way should be retroreflectorized on the approach faces, and should have diamond shaped hazard markings around them. The retroreflectors and markings should be yellow for the center bollard and white for the flanking bollards.

Along Sunset Circle

The trail runs along the south edge of Sunset Circle toward Lighthouse Cove RV Park, separated from the street (which is one-way southbound) by a segmented concrete curb (Figure 4-6(a, b)). On the trail side of the separator, several signs are mounted on posts (Figure 4-6(c)). Their plates are at least 7' above pavement (correct, for pedestrian safety) but no pavement markings ("obstruction" slashes or an edge line) warn users of the post locations.

It is suggested to either indicate the signpost locations with obstruction markings (Figure 4-8(a)) or stripe an edge line with the sign plate to the outside. Because the trail's width between centerline and the curbs is substantially greater than between the centerline and the south edge, ample travel width will remain after adding an edge line.

a) Approaching Sunset from the south

b) Along Sunset Circle — concrete separators

c) Sign post on trail side of curb

d) Center bollard

e) Cut-off sign post base

Figure 4-6: Coastal Trail east of Howe Drive

Installing retroreflective strips on both approach faces of the posts could improve their nighttime conspicuity. Because the posts support warning (yellow) signs, such strips would be yellow.

In one location a cut-off signpost protruded from the pavement within the trail width (Figure 4-6(e)). This is hazardous to both pedestrians and bicyclists and should be removed.

Behind Visitor Center

After crossing Elk Creek on a path bridge that is 10’ wide between its side panels, the Coastal Trail turns toward the water and runs behind the Visitor Center. The low square concrete bollards at the east end of this segment (Figure 4-7(a)) may not be needed because of the low likelihood of motor vehicle intrusion. Because the small signs on the bollard faces are unreadable at bicycle speeds, it is suggested to install bicycle guide signs at this location, perhaps “Harbor” east/south bound and “Lighthouse” west/north bound.

The back wall of the Visitor Center is so close to the coast edge that the path hugs its corner, creating a blind curve (Figure 4-7(b)). A railing protrudes from the corner, perhaps intended to reduce the chance of head-on collisions between bicyclists and pedestrians, but it may be an unexpected hazard for an unwary bicyclist. Though bicyclists dislike unnecessary “dismount zones,” at this location one is advised.

It is suggested to consider:

a) Signing both approaches with W1-1 (90-degree turn) warning signs, with warning (black on yellow) plaques reading “Narrow Blind Corner” (perhaps above the W1-1) and “Bicyclists Dismount” (perhaps below).

b) Adding a two-sided retroreflectorized plate to the protruding railing.

c) Marking a diagonal line to direct path users around the end of the protruding railing.

a) East of Visitor Center

b) Blind curve by Visitor Center

c) Bollards behind city pool

Figure 4-7: Coastal Trail behind Visitor Center and municipal pool

Behind municipal pool

The Fred Endert Municipal Pool complex is located between the Visitor Center and Howe Drive. The Coastal Trail runs through the south edge of the pool’s rear parking lot (Figure 4-7(c)). Low bollards prevent vehicles from driving from the parking lot onto the path toward the Visitor Center. They each have yellow diamond obstruction markings, however only the path-center bollard’s markings should be yellow (the path-edge markings should be white).

No markings identify the path through the parking lot. It is suggested to mark wide white edge lines and a dashed yellow centerline, to inform parking lot users to expect bicyclists and pedestrians and to not park on the path. Posting a sign informing parking lot users of the Coastal Trail may also be useful.

The path area through the parking lot also has substantial root heaves, which should be remediated to reduce the risk of bicycle crashes and pedestrians tripping.

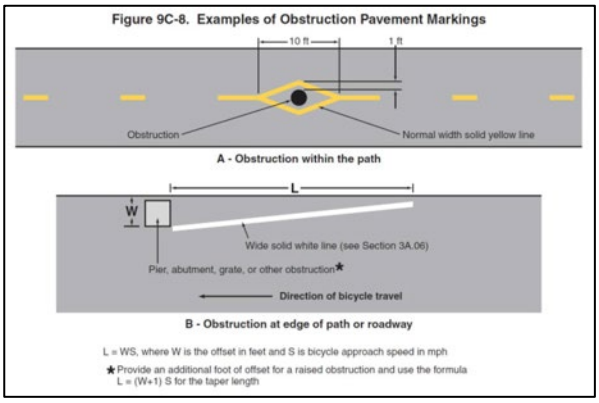
Bollards

Square bollards (Figure 4-6(d)) are centered on the trail at the Lighthouse Cove RV Park driveway, at the bridge over Elk Creek, and along the waterside segment behind the Visitor Center. The bollards are dark, not reflectorized, and some are not marked with standard “diamond” obstruction pavement markings. Some have small signs on their faces whose text is unreadable at bicycle speeds.

Tall bollards within a path can severely, even fatally, injure bicyclists who fail to notice them — often when one bicyclist closely follows another who veers around the hazard. Despite this risk, agencies often install center bollards to prohibit motor vehicle entry — even when there is no history of intrusion. Also, if there are no bollards or other vehicle obstructions within five feet (face to face) of a center bollard, motorists can simply drive through those gaps.

Motor vehicle access can be prevented without bollards with a "chicane gate" formed by two offset half-trail-width transverse fences or barricades (or concrete K-rails) separated sufficiently in the longitudinal (travel) direction that long bicycle configurations (tandem pulling child trailer, single pulling a long trailer, or long cargo bike) can pass through without the need for dismounting. However, many agencies fail to provide sufficient longitudinal separation, thus effectively blocking access by these long bike configurations. If a chicane gate is considered, user testing in the corporation yard or in the field should be conducted before finalizing the design.

It is suggested to evaluate the need for access control devices (bollards or gates) at every location where they exist, remove unneeded ones and (where feasible) replace needed ones with properly designed chicane gates. For any bollards that remain, add retroreflective strips to their approach faces (yellow for centered bollards, white for edge bollards), install diamond obstruction markings around the bollard (same color convention) and consider making the bollard body a lighter color.



a) MUTCD Obstruction Markings figure

b) "Chicane gate" blocks vehicle entry.
(May force bicyclists to dismount,
depending on gate and bicycle geometry)

Figure 4-8: Path obstruction markings and "chicane gate" example

Suggestions

Table 4-2: Suggestions for Coastal Trail east of Howe Drive

#	Location	Item	Suggestion
1	Huston Street path junction	Geometry	a) Realign intersection as a T, Y, or 3-leg mini-circle
		Warning signs	b) Remove the misleading W2-1 and W1-2 signs
		Guide signs	c) Signs destinations: “Downtown,” “Harbor,” “Elk Valley Road”
2	Huston Street path east end (near US-101)	Bollard line	Consider re-spacing with a bollard centered on the path (with yellow markings), outer bollards at 5’-0” face-to-face (not on-center) spacing and white markings, and outer gaps fenced to effectively prevent motor vehicle entry.
3	Along Sunset Circle	Sign posts	a) Install edge line (with posts and full width of sign plates outside it) or obstruction markings on approach to each post b) Consider installing retroreflective strips on approach faces
		Cut-off sign post	c) Remove (excavate metal, patch pavement)
4	Behind Visitor Center	Protruding railing	Paint a bright color, install retroreflective bands on frame, install retroreflective rectangular panel.
		Warning signs	Consider installing W1-1 (90-degree turn) signs, with plaques above (“NARROW BLIND CORNER”) and below (“BICYCLISTS DISMOUNT”)
5	Behind city pool	Markings	Mark the path through the parking lot with white edge lines and a dashed yellow centerline
		Bollards at east end	Change the path-edge bollards’ obstruction markings from yellow (which is reserved for the path center) to white
		Root heaves	Remediate with flat pavement
6	Full segment	Bollards and other access control devices	Review the purpose of each bollard, set of bollards, or other path access control device: • If no history or likelihood of vehicle intrusion, consider removal • If vehicle exclusion is needed, consider replacing bollard(s) with a chicane gate (pair of offset half-fences). • If the bollard’s only function is to mount a sign or display a message, consider whether a conventional sign (on a sign post, large enough to be effective) could be substituted.

4.2.2. FOCUS AREA #2: Coastal Trail along south waterfront to B Street

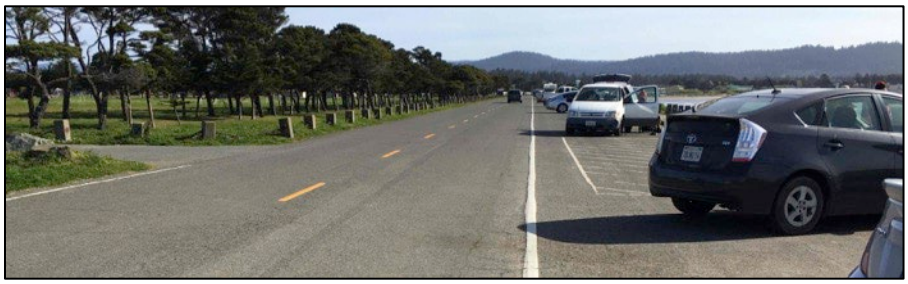
Overview

This section uses the convention that the Howe Drive waterfront runs east-west.

As shown in Figure 4-9, the Coastal Trail continues west of the municipal pool along the Howe Drive waterfront, along the south wall of the Public Works / water treatment facility, and across B Street at the north entrance to the B Street Pier, the west end of this focus area (Figure 4-9(a), yellow rectangle at lower left).

Howe Drive's waterfront segment is two-lane, two-way with perpendicular parking on its south (waterfront) side defined by concrete parking stops, beyond which is a wide walkway with picnic tables and benches. The Coastal Trail follows this walkway.

a) Aerial



b) Roadway and parking area, facing east

c) Bench (and foot/leg area) reduces usable width

d) Trash / recycle can reduces usable width

Figure 4-9: Coastal Trail along Howe Drive waterfront

Observations and Analysis

Howe Drive waterfront promenade

Pedestrians from parked vehicles cross Coastal Trail traffic en route to the picnic tables and other waterside activities on the coast side of the Trail.

Several benches and trash / refuse cans and their operating areas protrude into the Trail's travel width (Figure 4-9(c & d)). Operating areas include leg and foot space for sitting, and standing space at receptacles. Most of these could be moved off the Trail by constructing small pads extending beyond the path edge.

No guide signs indicate relatively distant destinations such as "Harbor," "Lighthouse," "Brother Jonathan Park," or "Downtown" (at the H Street axis), or in-park destinations such as "Dog Town," the Northcoast Marine Mammal Center, or Billy Boone Square.

The evaluator visited the promenade in the 9 o'clock hour on a Thursday (March 31) and observed many pedestrians including groups walking three-abreast. If the level of bicycle activity is also high at other times such that there is unacceptable conflict between "wheels" and "heels," the city might consider separating those modes by shifting the street and parking area 10' further from the shore and inserting a two-way bicycle-only path (cycle track) between the parking and the pedestrian area, differentiated with colored pavement.

Behind Public Works / Water Treatment Plant

As shown in Figure 4-10, where Howe Drive curves to the north away from the waterfront, the Coastal Trail continues along the south wall of the Public Works / Water Treatment Plant.

a) Behind Public Works / Water Treatment Plant

b) West end of Howe Drive segment, facing west

c) Facing east (toward Howe Drive)

Figure 4-10: Coastal Trail behind Public Works / Water Treatment Plant

Several improvements are suggested here:

a) A path spur to Howe Drive at the curve, extending the straight segment along the wall, to provide access for bicyclists who choose to ride in the traffic lanes along the Howe Drive waterfront (Figure 4-10 (b & c)).

b) Along the wall, keeping vegetation trimmed back and adding an edge line, to safely maximize usable operating width.

c) Guide signs at the Trail / spur junction: “Lighthouse,” “Harbor.”

B Street crossing

West of the Public Works facility, the Trail crosses B Street and ascends a short grade to the south end of Lighthouse Way, from which the lighthouse can be accessed on foot during low tide. The large red-orange bollards on each approach (used at harbors for mooring ships) are properly marked with yellow diamond obstruction markings.

a) Westbound approach

b) Eastbound approach

c) Southbound B Street approach (facing the Pier)

Figure 4-11: Coastal Trail crossing of B Street

It is suggested to:

a) Highlight the crossing with high-visibility crosswalk markings

b) Consider installing trail crossing warning assemblies consisting of W11-15 Trail (bicycle symbol over pedestrian symbol) signs and W16-7p Downward Pointing Arrow plaques

c) Post guide signs (“Waterfront” [east], “Lighthouse Way” [west]), “B Street Pier” [south], “Downtown” [north].

Suggestions

Table 4-3: Suggestions for Coastal Trail along Howe Drive waterfront to B Street

#	Location	Item	Suggestion
1	Howe Drive waterfront	Benches and trash cans	Move these objects and their standing/sitting clearances out of the traveled way of the Trail, in some cases by constructing small pads.
		Guide signs	Indicate destinations: “Harbor” [east], “Lighthouse” [west]), “Downtown” [north at Battery / H Street axis].
2	Battery west end curve by Public Works	Street-path connection	Add a path spur extending the east on the wall axis to the west curb of Howe Drive, for an on-off street connection there.
		Guide signs	Indicate destinations served by each leg of the T-junction: “Waterfront” [east], “Lighthouse Way” [west]), “B Street Pier” [south], “Downtown” [north].
3	Behind Public Works facility	Vegetation	Keep vegetation trimmed back to maximize operating width (perhaps remove vegetation along the wall).
		Markings	Install an edge line 1’ out from the wall columns
4	B Street crossing	Markings	Install high visibility crosswalk markings
		Warning signs	Consider installing Trail Crossing assemblies (W11-15 bike-over-pedestrian + W16-7p Downward Pointing Arrow plaque)
		Guide signs	Indicate destinations served by each leg: “Waterfront” [east], “Lighthouse Way” [west]), “B Street Pier” [south], “Downtown” [north].

4.2.3. FOCUS AREA #3: Coastal Trail alignment between B Street and 2nd Street

Overview

This section uses the convention that letter-named streets (A, B, …) run north-south and numbered streets (2nd, 3rd…) run east-west.

Figure 4-12 shows three Focus Areas:

a) The west end of Focus Area #2 (green line) — the Coastal Trail's off-street segment east of B Street.

b) All of Focus Area #4 (blue line) — on-street segments along 2nd, A, 3rd, Wendell, 5th and Taylor Streets, where an off-street trail along the coastal cliffs is not feasible.

c) All of Focus Area #3, the unmarked area between #2 and #4: three blocks of B Street, two blocks of Lighthouse Way, and one-block east-west connections via Front Street and Lighthouse Way's south-end parking area.

Because the Oceanfront Lodge occupies the parcel bounded by Front, B and 2nd Streets, including the coastal edge, walking or bicycling directly between the north end of Lighthouse Way and the south end of A Street involves crossing private property. For this reason it is assumed that the public Coastal Trail alignment will be aligned along B Street between Front and 2nd.

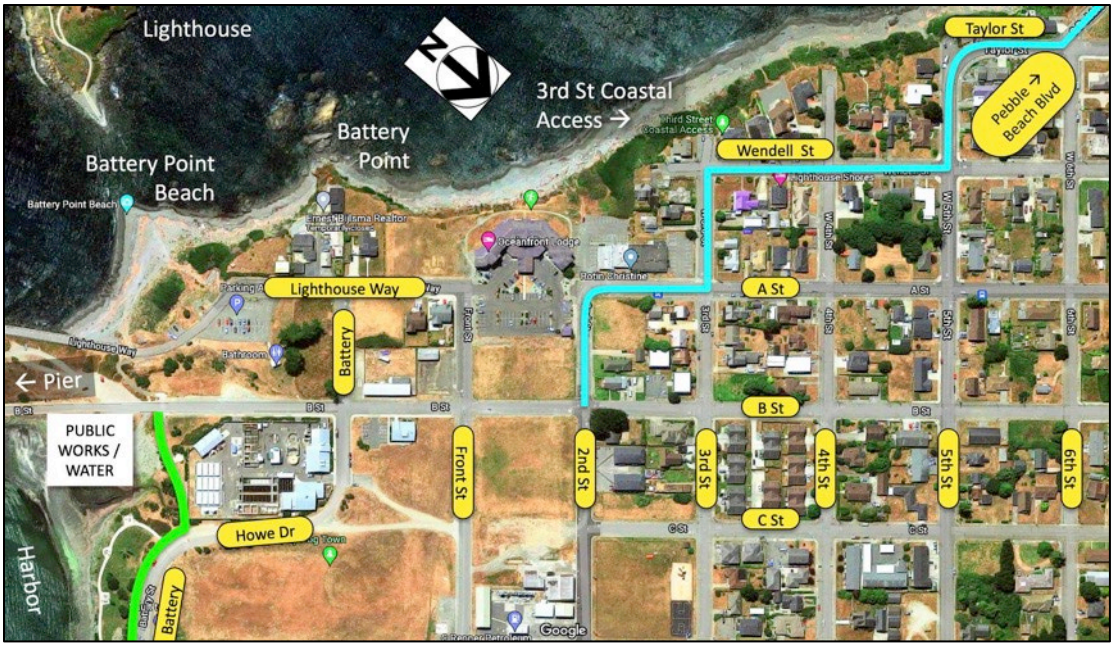


Figure 4-12: Coastal Trail alignments, Howe Drive to B Street and west

Observations and Analysis

Westbound Trail users, upon reaching B Street behind the Public Works facility, can continue through Focus Area 3 to the B Street / 2nd Street intersection in two ways:

a) Directly, by walking or riding north three blocks along B Street.

b) Indirectly, by crossing B Street, ascending a short grade to Lighthouse Way's south-end parking lot, following Lighthouse Way to Front Street, Front Street east to B Street, then north one block along B Street.

The direct route via B Street is described in the following subsection. The Lighthouse Way / Front Street route is described in the two subsections that follow.

B Street between Coastal Trail crosswalk and 2nd Street (3 blocks)

On B Street's three blocks between the Coastal Trail crossing (at the Pier entrance) and 2nd Street, B Street is 40' wide and has no sidewalks, centerline, or bikeway markings. It has custom wayfinding signs on the Front Street — 2nd Street block.

a) B Street facing north toward 2nd Street

b) Front Street facing west toward B Street

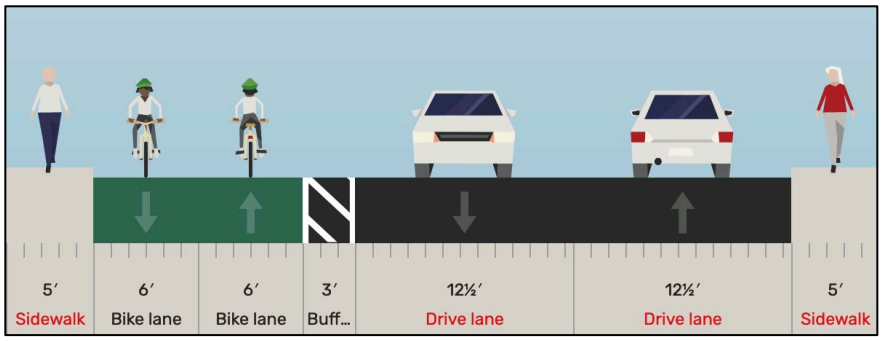
Figure 4-13: B Street between Front and 2nd Streets

The Coastal Trail experience could be enhanced on these three blocks in several ways:

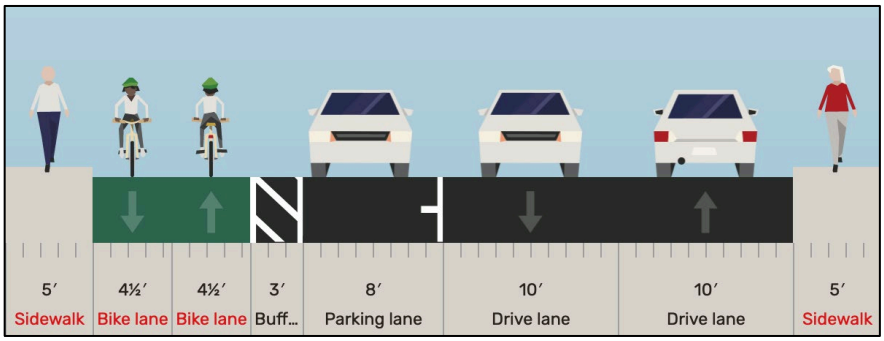
a) At a minimum, install a sidewalk along the west side (bicyclists would share the street), continuing west one block along the south side of 2nd Street to A Street.

b) Possibly also one-way bike lanes or buffered bike lanes on each side of B Street.

c) Alternatively, to extend the "path" experience three blocks north of the B Street crosswalk, instead of bike lanes, consider installing a two-way cycle track along the west side (Figure 4-14). If future west-side development needed on-street parking, a floating parking lane could buffer the cycle track. As discussed in the next two sections of this report, the cycle track / sidewalk combination could continue along the blocks closest to the coast, up to 9th Street.



a) Without parking



b) With parking

Figure 4-14: Cycle track conceptual cross-sections for B Street south of 2nd (40' wide)

B Street connection to Lighthouse Way south-end parking lot

The indirect but more-scenic option for continuing west along the Coastal Trail is the one currently implemented (Figure 4-15). From the B Street crossing it ascends a moderate grade up to the parking lot at the south end of Lighthouse Way. Potential improvements include:

a) Widening the ascending path for more comfortable shared use.

b) Installing a solid yellow centerline because of the curvature and slope.

c) Giving able-bodied pedestrians an alternate route by installing a walkway along the base of the embankment to the foot of an informal trail that has been worn up the slope to the top (Figure 4-15(b, c & d)). The “goat trail” would become a staircase.

a) East end of Trail at B Street

b) South-side embankment

c) “Goat trail” up embankment

d) Upper end (Trail at right, “goat trail” at center)

Figure 4-15: Coastal Trail between B Street and Lighthouse Way south parking lot

Lighthouse Way and Front Street

Upon reaching Lighthouse Way’s south parking lot, Coastal Trail users continue north along Lighthouse to Front Street, then one block east along Front to B, then north to 2nd Street.

Basic improvements would include completing the west sidewalk up to Front Street and along the north side of Front Street. Bicyclists would share the streets, as they do now.

Figure 4-16: Lighthouse Way facing north toward Front Street

Public bike parking to serve Oceanfront Lodge and its restaurant

Oceanfront Lodge's restaurant, with its coastal views, is a popular destination for pedestrians and bicyclists. Although one can lock a bicycle informally within view of the restaurant tables, the city might consider providing public bike rack areas either on the south side of the Lodge (just west of the Lighthouse Way / Front Street corner) or on the north side (just west of the 2nd Street / A Street corner). City staff said that there is a utility easement on the north side at 200 A Street.

Suggestions

Table 4-4: Suggestions for Coastal Trail connections between B Street and 2nd Street

#	Location	Item	Suggestion
1	Along B Street	Sidewalk	Install a west sidewalk
		Bikeway	Install conventional bike lanes or buffered bike lanes, OR
			Install a two-way cycle track along the west side, optionally with a parking lane with a passenger side door buffer.
2	Between B Street crossing and Lighthouse Way	Existing path	a) Widen if possible for more comfortable shared use b) Install a solid yellow centerline
		Alternate walking route	Consider installing a walkway along the foot of the embankment and stairs to replace the existing informal "goat trail" to the top.
3	Lighthouse Way	Sidewalk	Complete the west sidewalk along the two blocks
4	Front Street	Sidewalk	Install a north sidewalk west of B Street
5	Oceanfront Lodge	Public bike rack area(s)	Consider installing a public bike rack area just west of the west end of Front Street, the west end of 2nd Street, or both locations

4.2.4. FOCUS AREA #4: Coastal Trail, 2nd Street — Pebble Beach Drive

Overview

Within Focus Area #4, between 2nd and 6th Streets, the Pacific cliffs preclude the construction of a coast-side path, so the Coastal Trail alignment follows a "wiggle" route along the blocks closest to the coast as shown in Figure 4-17. (In San Francisco, where the evaluator lives, one cross-town bikeway segment that avoids a steep hill is officially named "The Wiggle".)

There are public coastal access points with paths to the beach at the ends of 3rd Street (at Wendell) and 5th Street (at Taylor), and viewpoints without paths at the ends of 4th and 6th Streets. A private parking lot occupies the end of 2nd Street, adjacent to the Oceanfront Lodge.

Figure 4-17: Coastal Trail "wiggle" blocks between 2nd & B and 6th & Taylor

On the field audit day, on blocks where curbside parking was present, parking occupancy was low.

a) 2nd Street facing west from B Street

b) 2nd Street facing west at Lodge parcel

c) A Street facing north from 2nd Street

d) 3rd Street facing west from A Street

e) 3rd Street at Wendell coastal access

f) Wendell Street facing north from 3rd Street

Figure 4-18: Coastal Trail "Wiggle" blocks: 2nd, A, 3rd, Wendell

a) 5th facing west from Wendell

b) 5th-Taylor curve (coastal access far left)

c) Taylor facing north from 5th

d) Taylor / 6th intersection & coastal access

Figure 4-19: Coastal Trail "Wiggle" blocks: 5th, Taylor

The following table documents existing conditions along the "wiggle" blocks.

Table 4-5: Coastal Trail block conditions between B Street and Pebble Beach Drive

			Sidewalk			
Street	**Block**	**W**	**Coast side (W, S)**	**Inland (N, E)**	**Bikeway**	**Parking**
2nd	B — A	39	A: 1/2 block (Lodge parcel)	A: Corner lot (#210) at B St	Bike lanes	No signs prohibit*
A	2nd — 3rd	39	A	A: 1/2 block (3rd St end)	Shared lanes	Both sides
3rd	A — Wendell	39		B: short segment at #314		
Wendell	3rd — 5th	39		A: 1/2 block (4th St end)		
	4th — 5th	39		A		
5th	Wendell — Taylor	40			Bike lanes	No signs prohibit*
Taylor	5th — 6th	39	NONE			

Sidewalks: *A = Attached (no planting strip), B = Buffered (planting strip)*
Parking: *No signs currently prohibit parking in the bike lanes*

Analysis

As shown in Table 4-5, all of the "wiggle" blocks have curb to curb widths of 39' or 40'. All except the 2nd and A street blocks have single-family homes on both sides, with associated curbside parking demand.

On the "wiggle" blocks there is no way to install an off-street path within the public right-of-way because front yards have landscaping or fences along the sidewalks (where present). As such, the suggested improvements for pedestrians are:

a) Remove sidewalk gaps on the west and south sides of blocks.

b) Improve selected crosswalks with warning signs and high-visibility markings, especially at coastal access points.

Two different treatments could improve conditions for bicycling — one modest and one transformative:

Modest: Delineate shoulders / parking lanes; no circulation changes

On blocks without bike lanes, stripe parking lanes to define minimum-width travel lanes with no centerline. (Many bicyclists use low-occupancy parking lanes in lieu of bike lanes, though they must check over their shoulder and re-enter the street to go around parked vehicles.)

On blocks with bike lanes, restripe for minimum-width travel lane widths, to maximize bike lane width.

Transformative: Two-way parking-separated cycle track; one-way southbound circulation

Bikeway: Two-way cycle track (bike-only) within street along coast (west and south) sides

Parking

Coast side: "floating" parking separating cycle track from traffic

Inland side: left-side parking (driver-side door at curb)

Travel lane: 1, south/east-bound

All other blocks would remain two-way, including those intersecting with the "wiggle," so north/west-bound vehicles between the wiggle's endpoint intersections (2nd / B and 6th / Taylor / Pebble Beach Drive) would use B or A Streets (or Wendell between 5th and 6th). No parking would be removed except optionally on the left side approaching cross streets where a short left-turn lane was deemed necessary.

Figure 4-20 shows conceptual cross sections:

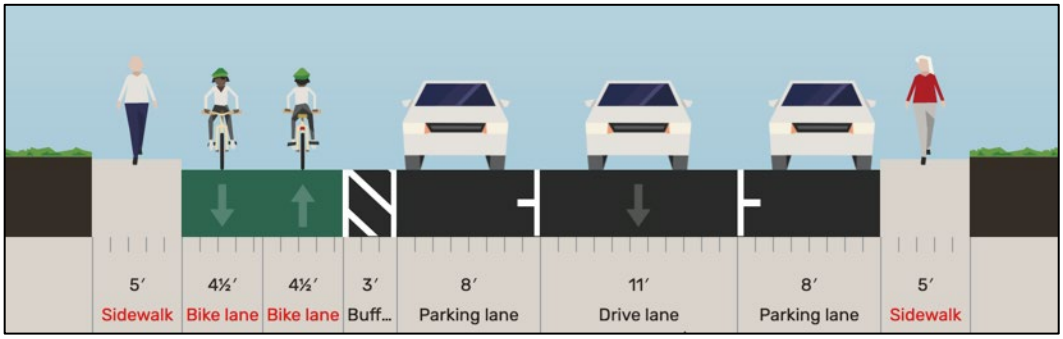
a) At mid-block on most blocks

b) On Taylor between 5th and 6th where there is currently no coast-side sidewalk

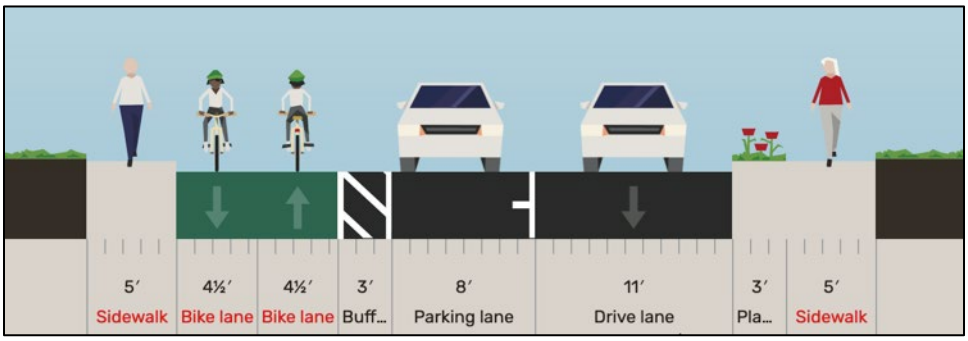
c) Approaching a left turn area (does not apply at Taylor / 5th)

Each cross section has a 9' (4.5' + 4.5') cycle track, a 3' door buffer, and an 11' floating parking lane. In the turn lane cross section (c), the floating parking lane and travel lane are each narrowed

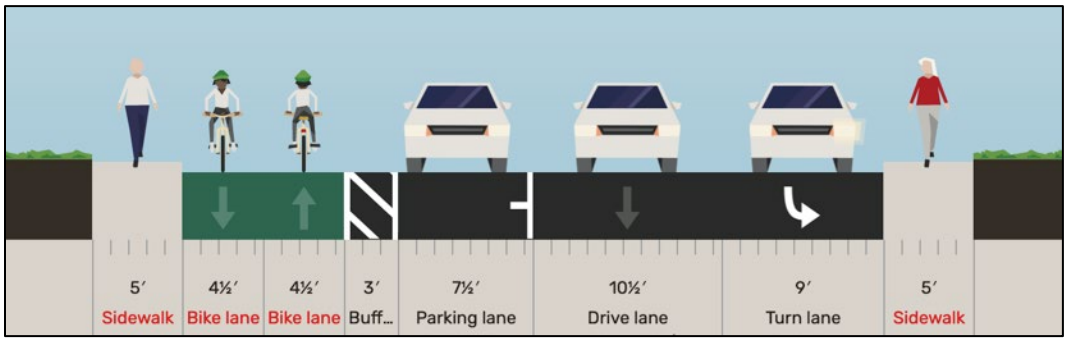
by 6” so the turn lane can be 9’ wide. (The bicycle-friendly City of Palo Alto uses 9’ turn lanes on low-to-moderate speed streets when needed to fit in bikeways.)



a) Mid-block for 39’ street (on 40’ street, bikeway could be 5’ + 5’)



b) Taylor between 5th & 6th (uses 5’ of existing = 39’ to add coast-side sidewalk)



c) Approaching left turn into cross street (does not apply at Taylor / 5th)

Figure 4-20: Cycle track conceptual cross-sections facing west or north

Figure 4-21 shows the combined cycle track concept for Focus Areas 3 and 4 (Howe Drive — Pebble Beach Drive), including the “wiggle” blocks that would be one-way for motor vehicles, and the connections to Front Street’s existing bike lanes and sidewalks. Note that B Street and Pebble Beach Drive remain two-way. Associated movement-prohibition signs (No Right Turn, Do Not Enter) are shown except for traffic approaching from the coastal-access dead ends at 3rd, 4th, and 5th Streets and from the commercial driveway at 2nd Street.

Regardless of which bicycle option was implemented, adding wayfinding signage to guide Coastal Trail users — especially visitors — would benefit both pedestrians and bicyclists.

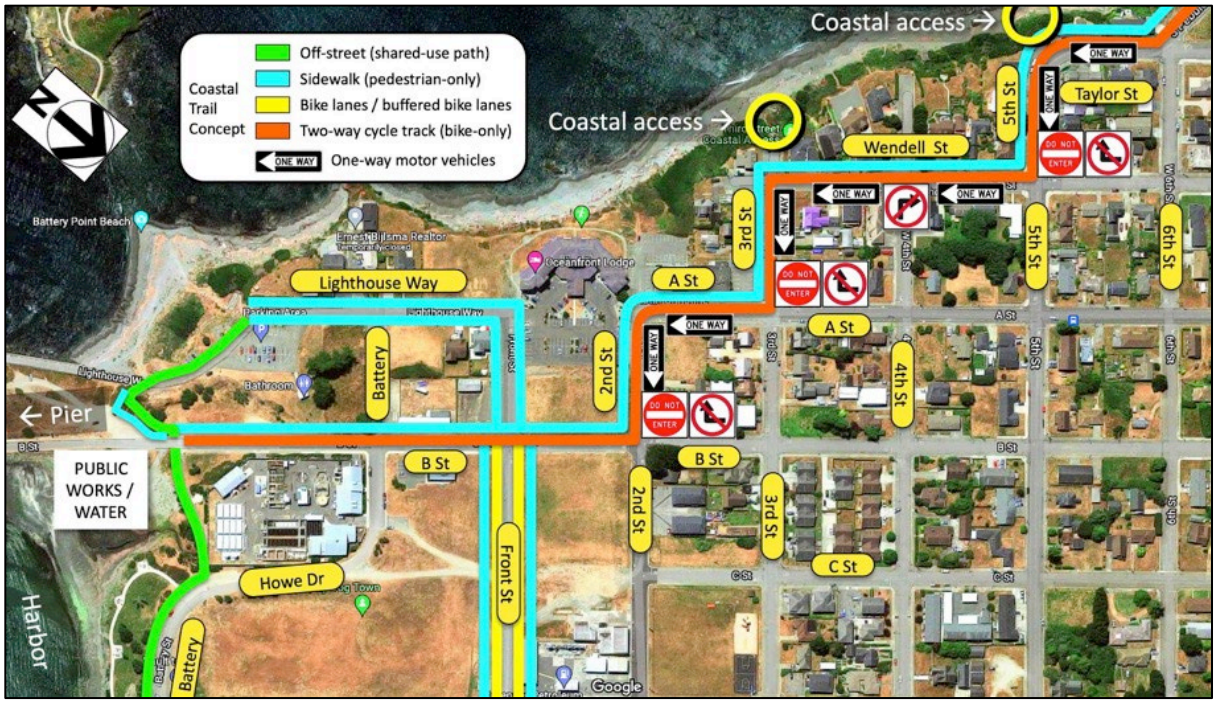


Figure 4-20: Coastal Trail concept between Howe Drive and Pebble Beach Drive

Suggestions

Table 4-6: Suggestions for Coastal Trail corridor between 2nd and Taylor Streets

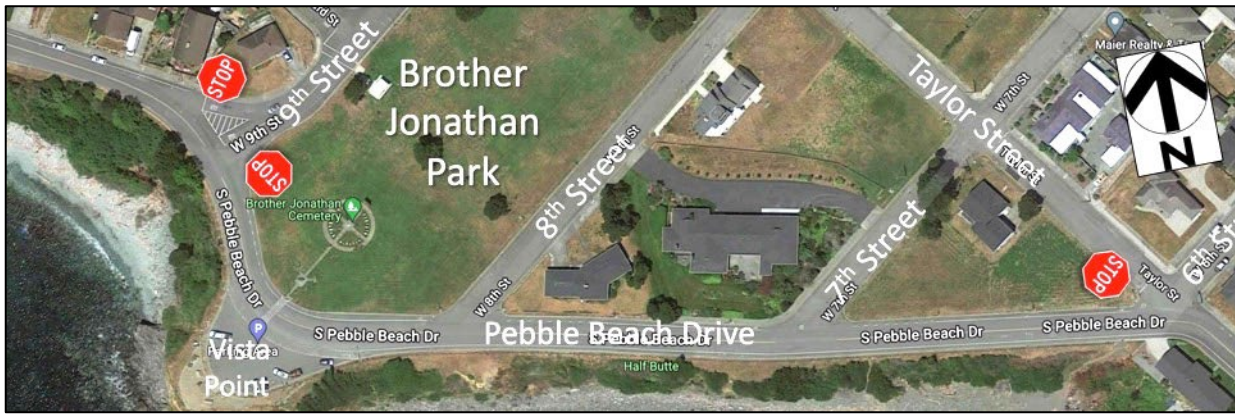
#	Location	Item	Suggestion
1	All "wiggle" blocks	Sidewalks	Provide continuous sidewalks on coast (south or west) side
2		Bikeways	*a) Modest improvement* On blocks without bike lanes, stripe parking lanes for minimum-width traffic lanes On blocks with bike lanes, re-stripe for minimum-width traffic lanes
			b) Transformative improvement Install two-way cycle track on coast side, with 3' door buffer, "floating" parking lane, one south/east bound traffic lane and a left-side southbound parking lane Sign intersection approaches with Do Not Enter (R5-1) and No Right Turn (R3-1) as appropriate. Install One-Way (R6-1) signs as appropriate.
3	Taylor, 5th — 6th	West sidewalk	If the cycle track option (2b) were implemented, a coast-side sidewalk would be added per Figure 4-21 (b).)
4	3rd & Wendell	Crosswalks	Mark two-line crosswalks on the west leg (across Wendell) and south leg (across 3rd) When a sidewalk is added on the east side of Wendell or the north side of 3rd, mark and sign a high-visibility crosswalk on the north leg (across Wendell)
5	5th & Taylor		Consider installing curb extensions or islands to narrow the wide opening of the coastal access parking area, to reduce the length of the crosswalk across it between 5th Street's south sidewalk and Taylor Street's west sidewalk (the latter to be added per the cross section in Figure 4-21 (b).) Mark a two-line crosswalk on the west (coastal access parking) leg of 5th
6	6th & Taylor		Mark and sign a high-visibility crosswalk across Taylor on the south leg (aligned with 6th Street's south sidewalk to the east)

4.2.5. FOCUS AREA #5: Coastal Trail, Pebble Beach Drive

Overview

This section uses the convention that Pebble Beach Drive runs east-west between 6th Street and the Brother Jonathan Vista Point.

North of 6th Street the coast becomes visible again, and Pebble Beach Drive continues the Coastal Trail alignment to the city limit near 9th Street. Pebble Beach Drive is two-way between 6th and 9th, with one travel lane and an unbuffered bike lane in each direction, no sidewalks and no parking. Its curb-to-curb width on this segment varies between 39' and 42'. (Ample parking is available on intersecting streets: 6th, 7th, 8th and 9th.)



a) Aerial

b) Coast edge

c) Inland edge

Figure 4-21: Pebble Beach Drive between 6th and 9th Streets

Analysis and Suggestions

Pedestrian accommodation

a) Continuous sidewalk on the coast (south) side

There appears to be sufficient width to add a sidewalk, but not enough for an off-street shared use path. Staff said that strengthening the edge to add a sidewalk might require soldier piles.

b) Marked (high-visibility) and signed crosswalks at 6th Street (south leg, across Taylor), 9th Street, and at the Brother Jonathan Vista Point (covered in the next section)

Optional improvements for pedestrians would be:

c) Continuous sidewalk on the inland (north) side

d) Marked (high-visibility) and signed improved crosswalks at 7th and 8th Streets, to serve residents (avoiding the need to walk to 9th or 6th Streets) and visitors (who may wish to park on those street rather than at the Vista Point).

Bicycle accommodation

Pebble Beach Drive's existing travel lanes are 14' wide, so on its 39' wide segments the bike lanes are 5.5' wide. Figure 4-23 shows the existing layout (south / Coastside is to the left):

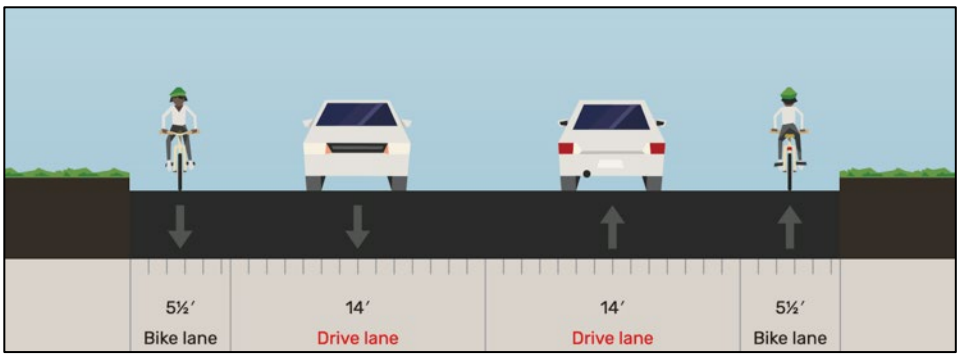


Figure 4-22: Pebble Beach Drive existing cross section between 6th and 9th (39' section)

Before bike lane buffers and cycle tracks were added to U.S. practice, this would have been considered reasonable bicycle accommodation for the street's traffic volume and speed. A modest improvement would be to narrow the travel lanes to a reasonable minimum for the street's context and use the freed-up width to slightly widen the bike lanes and add buffers:

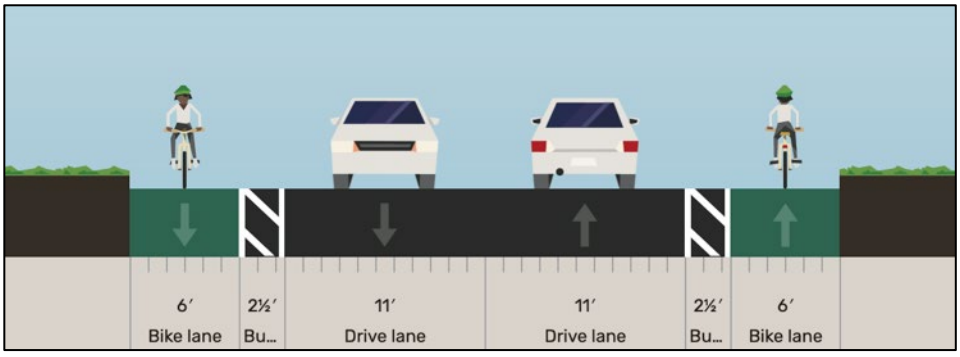


Figure 4-23: Buffered bike lane concept (39' section)

However, if a two-way cycle track were implemented through Focus Areas 3 and 4 (see those sections), extending it along Pebble Beach Drive to 9th Street would complete the transformation within the city.

Because the street climbs slightly to the west, retaining the westbound (north-side) bike lane would give faster bicyclists an on-street option — uphill bike lane, downhill shared lane.

The following layout is suggested; south (coast-side) is to the left. Conventional-width sidewalks are shown on both sides, however those could be buffered with planting strips.

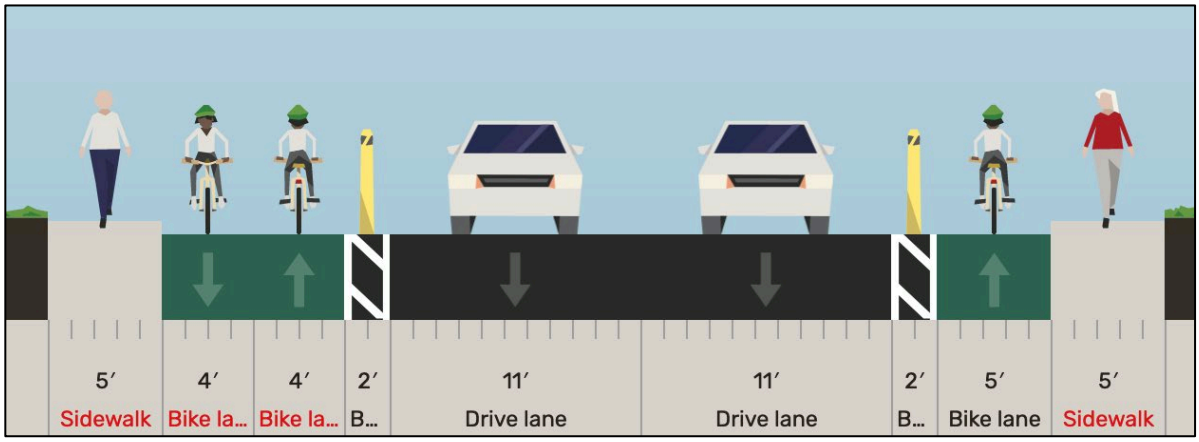


Figure 4-24: Sidewalk & cycle track concept for Pebble Beach Drive between 6th and 9th

9th Street intersection

North of Brother Jonathan Vista Point, Pebble Beach Drive curves to the west and 9th Street intersects from the east at a STOP-controlled T with a STOP-controlled right turn slip lane channelized by a large triangular painted island. There is no sidewalk on the south side (perimeter of Brother Jonathan Park) and no marked crosswalk across 9th at the intersection.

Pedestrians who walk on the east (inland) side of Pebble Beach Drive along the edge of Brother Jonathan Park would benefit from a sidewalk, which could wrap around the corner to the crosswalk at Gainard Street, one short block east, where the park has restrooms. The sidewalk would also connect to the mid-block crosswalk at the vista point. For pedestrians wishing to continue north along the inland side of Pebble Beach Boulevard, reducing the crossing distance across 9th would be beneficial.

This could be achieved by replacing the slip lane with a large curb extension or island so all movements from 9th are served at the T junction. Alternatively, if a traffic analysis determined that the slip lane was needed, replacing the painted island with a raised island and adding a crosswalk across the end of the slip lane could still obtain almost all of the benefits.

In addition, a shallow curb extension or island on the south (park) side of 9th at the T could further reduce crossing distance and calm northbound right turns from Pebble Beach Drive.

Figure 4-26 shows existing conditions and the slip lane removal concept, with a park-side sidewalk but not the coast-side walkway or in-street bikeway improvements discussed above.

a) Existing

b) Concept with slip lane removed

Figure 4-25: Pebble Beach Drive at 9th Street — existing conditions and a concept

4.2.6. FOCUS AREA #6: Coastal Trail, Brother Jonathan Vista Point and crosswalk

Overview

Brother Jonathan Park occupies the area bounded by Pebble Beach Drive, 9th Street, Taylor Street and 8th Street. It commemorates a local shipwreck with a small cemetery and a monument between the cemetery and Pebble Beach Drive, across the street from a vista point with a small parking lot.

The vista point is roughly a half-circle, with curbs that taper to conform to the alignment of Pebble Beach Drive. Motorists typically park perpendicular to the coastal edge.

An uncontrolled crosswalk with high-visibility "ladder" markings connects the vista point to the park. At this location Pebble Beach Drive has an unbuffered bike lane on each side and no sidewalks. The southbound bike lane is marked with high-frequency transverse white lines. The crosswalk lands at this bike lane. No islands or curbs along Pebble Beach Drive direct the path of inbound or outbound vehicles or protect pedestrians accessing the crosswalk or crossing the parking area to reach the coastal viewing area.

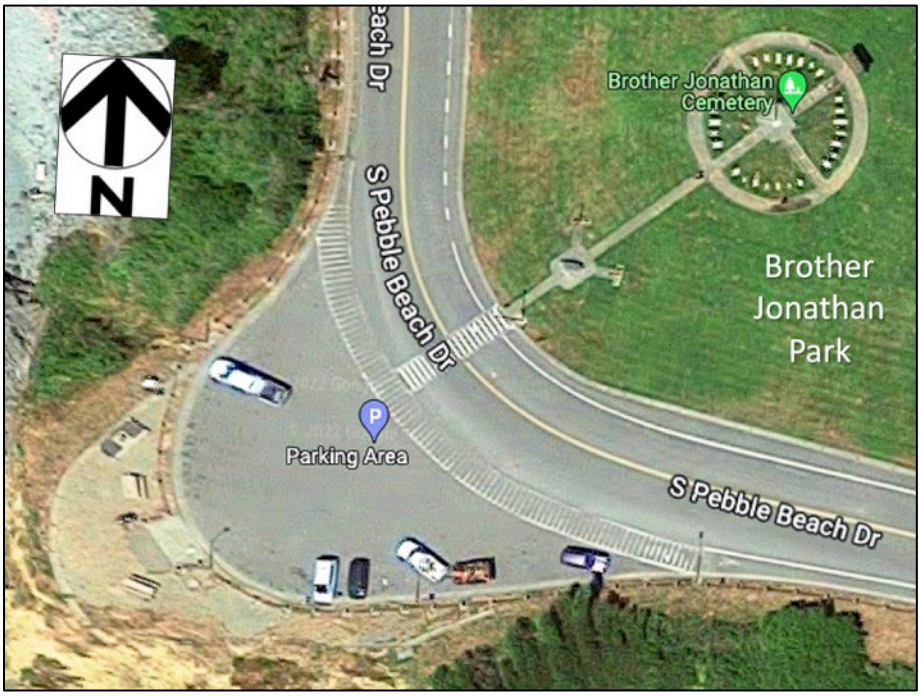


Figure 4-26: Brother Jonathan Park Vista Point — existing conditions

Analysis and Suggestions

Several pedestrian improvements could be considered. These are independent of the concepts discussed elsewhere in this report for the Coastal Trail and in-street bikeway along this segment of Pebble Beach Drive:

a) Adding a large island outboard of the southbound bike lane to receive the crosswalk, shape entering and exiting traffic, provide a location for a warning sign, and reduce pedestrian exposure distance between the crosswalk and the coastal viewing area.

b) Adding a raised no-parking area in line with the viewing area and a marked crosswalk across the vista point's internal driveway.

c) Adding warning sign assemblies at the crosswalk to clearly indicate its location.

d) Further enhancing crosswalk visibility and motorist yielding compliance by installing a narrow (2') median island with a two-sided R1-6 "Yield to Pedestrians in Crosswalk" "flipper" sign. This would require a minor widening of Pebble Beach Drive along the vista point and could perhaps be implemented at the same time as the large island ("a" above).

e) Making the vista point circulation one-way counterclockwise (north entry, south exit).

f) Adding a sidewalk along the park edge between 8th and 9th Streets (discussed elsewhere in this report).

If constructing the Coastal Trail's walkway on the coast side north of the vista point is not feasible, the Trail could connect to the viewing area and then use the internal and street crosswalks to reach the park in order to continue north.

Figure 4-28 shows a combined concept with no changes to on-street bikeways.

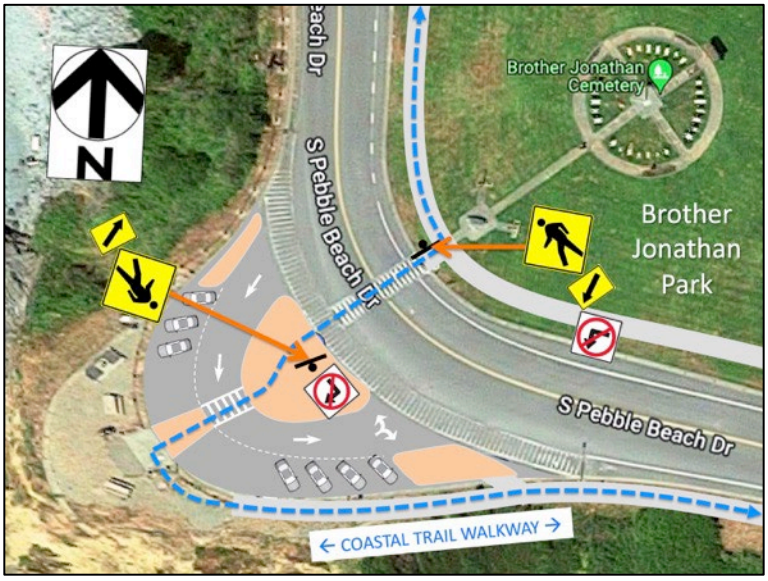


Figure 4-27: Brother Jonathan Park Vista Point — concept

4.2.7. FOCUS AREA #7: H Street at 8th Street — south crosswalk

Overview

Although Crescent City's downtown street grid is rotated approximately 40 degrees from the cardinal compass points, this section uses the convention that letter-named streets such as H Street run north-south and numbered streets such as 8th Street run east-west.

H Street traverses central Crescent City four blocks west of southbound US-101 (L Street). Its intersection with 8th Street is two-way STOP controlled (8th stops). Both streets are 39' wide with one travel lane and a parking lane in each direction.

The uncontrolled south crosswalk is marked with two white transverse lines, has diagonal curb ramps at both corners, and has no warning signs.

a) Facing north

b) Facing west

c) Facing east — STOP sign partly hidden by pole

Figure 4-28: South crosswalk across H Street at 8th Street, facing north

Observations and Analysis

Markings

It is suggested for all uncontrolled crosswalks to have high-visibility markings. This would involve adding “ladder rungs” to the two white transverse lines.

Installing a double yellow (no passing) centerline within 50’ of the crosswalk legally prohibits passing at the crosswalk and can also help to draw attention to it.

On multi-lane approaches to crosswalks, a yield line (white isosceles triangles one or two car lengths upstream) helps to avoid the “multiple threat” crash mode, wherein one motorist yields to a pedestrian close to the crosswalk but their vehicle hides another whose driver does not recognize the conflict. Because this crosswalk has single-lane approaches, yield lines are optional. If used, the northbound yield line would be one car length (approximately 20’) south of the crosswalk and the southbound yield line would be at the northwest corner curb return. Yield lines are typically accompanied by R1-5 Yield Here to Pedestrians regulatory signs.

Signs

It is suggested that uncontrolled crosswalks have warning sign assemblies at the crosswalk or as close as possible. Because this crosswalk is not for a shared use path, the sign assemblies would be W11-2 Pedestrian Symbol over W16-7P Downward Pointing Arrow plaque.

A single-sided sign assembly on the right curb is the basic treatment. Also having a left-side sign, i.e., making both signs double-sided, increases the conspicuity of the crosswalk.

If such passive sign assemblies do not produce acceptable motorist yielding compliance, adding pedestrian-activated Rectangular Rapid Flashing Beacon (RRFB) flashing light bars may help. These can be solar powered.

On the eastbound approach the STOP sign is mounted to the west face of a streetlight pole. The utility pole immediately upstream partly blocks it from view. It is suggested to mount the STOP sign on a separate pole between the fire hydrant and the corner curb ramp.

Curb extensions and islands

Where a crosswalk spans parking lanes, as is the case with the south crosswalk, providing curb extensions or “floating” islands in the parking lane(s) has several benefits:

- Warning signs are more visible than on the sidewalk, and their posts do not obstruct the sidewalk.
- Pedestrians can make crossing decisions where they can better see and be seen, which may increase motorist yielding compliance.
- Crossing distance and exposure time are significantly reduced.
- If a yield line is present upstream along the curb, an elongated island can protect its R1-5 “Yield Here to Pedestrians” sign.

Suggestions

Table 4-7: Suggestions for H Street south crosswalk at 8th Street

#	Item	Suggestion	Support
1	Markings	a) Add white “ladder” stripes	Increase conspicuity
		b) Add 50’ double yellow centerline	Deter passing at crosswalk
		c) (Optional) Add yield lines	Cue motorists not to encroach into crosswalk
2	Signs	a) Add warning sign assemblies at crosswalk (W11-2 & W16-7P)	Clearly indicate crosswalk location
		b) Optionally install RRFB light bars	If needed for motorist yielding compliance
		c) If yield lines are used, install R1-5 Yield Here to Pedestrians signs	Support the intent of the yield line
		d) Mount west-facing STOP sign on separate post	Resolve blocked sightline on eastbound approach
3	Islands	Consider installing curb extensions or floating islands in the parking lanes at each end	a) Mount warning signs for improved visibility b) Make pedestrians visible at decision point c) Shorten crossing distance and time d) On approach with a yield line, if the island is extended upstream, mount a R1-5 sign
4	Sidewalk	Extend south sidewalk to the east	Connect pedestrians along south side of 8th

Figure 4-30 shows high-visibility markings and no-passing centerline on both uncontrolled legs, eastward extension of the south sidewalk, and on the south leg, left- and right-side warning sign assemblies (shown with RRFBs) and islands in the parking lane supporting the signs, with the east island extended upstream to support a R1-5 sign at a yield line if installed (not shown).

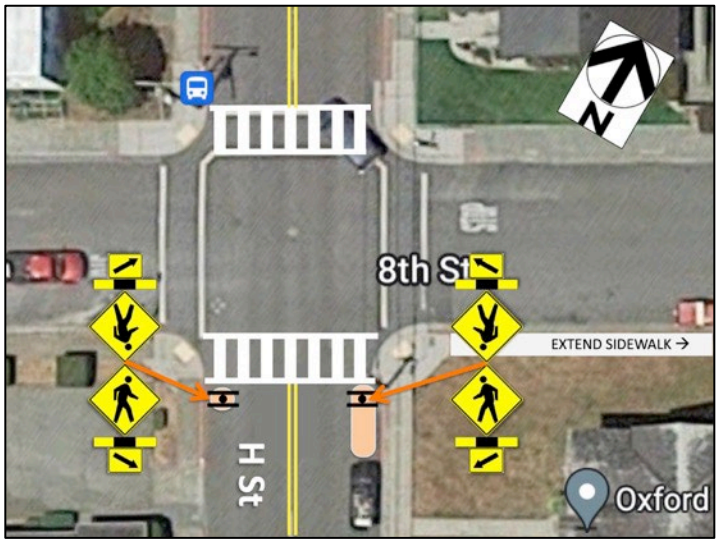


Figure 4-30: H Street at 8th Street — crosswalk concept

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