

Appendix F
Index to Draft Dune and Shoreline
Management Plan Comments

INDEX TO DRAFT DUNE AND SHORELINE MANGEMENT PLAN COMMENTS

The City welcomes public and interested agency comments on the Draft Dune and Shoreline Management Plan (Project). Appendix F includes copies of all comment letters received on the Draft Dune and Shoreline Management Plan. The Draft Dune and Shoreline Management Plan was made available for public review from Monday, January 10th, 2022, to Monday, January 31st, 2022. Due to schedule constraints, these comments are addressed in this appendix. However, moving forward, it is the City’s intention to work with interested members of the public and commenting agencies to ensure that all comments are considered and addressed as part of any future Project. The City received a total of eight (8) written comments, including three (3) from interested agencies, two (2) from community organizations and three (3) from individuals. Table F-1 lists all comments and shows the comment set identification number for each letter or commenter. Each comment letter has been assigned a numerical “Comment Set” indicating the order of the comment letters. The body of each comment letter has been separated into individual comments, which have also been numbered. For instance, the first comment in the first letter from the California Coastal Commission is depicted as Comment 1-1, and so on. Table F-2 provides detailed response to each discrete comment received on the Draft Dune and Shoreline Management Plan.

Table F-1. List of Commenters on the Draft Dune and Shoreline Management Plan

Individual/Agency/Affiliation	Format of Comment	Date of Comment Received	Comment Set	# of Comments
Agencies and Organizations				
California Coastal Commission	Letter	1/31/2022	1	14
California Department of Parks and Recreation	Letter	1/31/2022	2	7
County of Santa Barbara Public Works Department, Flood Control and Water Conservation District	Letter	1/28/2022	3	12
Smart Coast California	Emails	1/13/2022	4	1
Surfrider Foundation	Letter	1/22/2022	5	4
Individuals				
Deane Plaister	Email	1/31/2022	6	1
Greg Karpain	Letter	1/28/2022	7	6
John Callender	Letter	1/31/2022	8	8

Table F-2. Response to Comments

Comment No.	Responses
Comments Received from California Coastal Commission	
1-1	An acknowledgement of the H++ risk aversion scenario and the potential for 2 feet of sea level rise occurring sooner than 2050 has been included in the discussion of coastal hazards modeling methodology under the <i>Living Shoreline Design Alternatives and Modeling</i> section of the plan.
1-2	As discussed in the <i>Living Shoreline Design Alternatives and Modeling</i> section of the plan, though modeling of the various Project alternatives shows some white water overtopping of each of the alternatives, in the judgement of the Project engineer, the beach width of approximately 200 feet as retained by a pilot sand retention structure combined with an elevated dune feature will protect the backshore during 2 feet of sea level rise. Thus, the proposed Project and concept alternatives were specifically designed to be resilient to and function successfully under a sea level rise scenario of up to 2 feet. However, increasing storm severity and wave events could result in damage to the dunes, requiring long-term monitoring, maintenance, and repair of the dunes. Specifically, significant storm events with return intervals of 10-, 20-, 50-, and 100-years were evaluated for both existing sea level and with 2 feet of sea level rise. These storms can damage the beach and living shoreline under existing sea levels, and they will cause more damage under 2 feet of sea level rise. As further described in the plan, the proposed living shoreline’s effective lifespan is not unlimited, and the preferred design alternative would be resilient to sea level rise over the next 30 to 50 years, consistent with current projections for the ~2-foot sea level rise scenario. Quantifying damage under higher sea levels and knowing the exact sea level rise scenario that can be withstood by the alternatives presented in the plan is very difficult to determine without additional analyses. Those analyses are outside of the scope of this preliminary level concept study. Therefore, further study is recommended and should be done to make this determination and to also analyze any additional alternatives or variations in the design of the preferred design alternative.
1-3	As discussed under the <i>Plan Purpose and Goals</i> section of the plan, the purpose of the Project is to protect the City of Carpinteria’s (City’s) landward private residential and other development in the Beach Neighborhood and Downtown, public infrastructure, and coastal resources from sea level rise related impacts, including coastal erosion, severe storm events, and flooding. This Project was initially identified in the City’s Sea Level Rise Vulnerability Adaptation Plan (SLRVAAP; 2019) as a proposed near-term adaptation strategy for protecting recreational resources and landward development from the effects of 1 to 2 feet of projected sea level rise. A stated key goal of the Project is to “Protect transportation infrastructure, including U.S. Highway 101, the California Coastal Trail, and the main Union Pacific Railroad (UPRR) Amtrak line, and Carpinteria Rail Station, which are projected to become vulnerable to flooding with up to 2 feet of sea level rise.” It is not the purpose of this plan nor the City’s intent for this plan to assess proposed adaptation strategies beyond the 30- to 50-year scope of this Project. Potential long-term adaptation strategies were developed in concert with California Coastal Commission staff and are thoroughly discussed in the City’s SLRVAAP and will

	<p>be addressed in future planning efforts. The SLRVAAP and these longer-term planning efforts are referenced in the plan and as the goals of the plan are focused on improving resiliency through 2050 to 2070, discussions of long-term options that lie outside of this plan’s objectives are best addressed in future planning efforts such as implementation of the SLRVAAP and the new Coastal Resiliency Element of the City’s updated General Plan/Local Coastal Plan due for release in 2022.</p>
1-4	<p>As part of this plan and during consideration of potential project constraints to development of a living shoreline project along the City’s coast, the City conducted extensive review of the location for a living shoreline, as well as a sand retention feature. Detailed discussion of Project constraints and feasibility is provided in the <i>Project Constraints and Feasibility</i> section of the plan. As discussed therein, the City would be limited in its ability to feasibly implement all or even some components of the Project on property not owned or managed by the City. Of the four reaches of the City’s coastline analyzed in this plan, the City only owns and manages Carpinteria City Beach which consists of the entire extent of Reach 2. Downcoast of Reach 2 is Carpinteria State Beach, which is owned and managed by the California Department of Parks and Recreation (State Parks). Installation of a groin structure downcoast in either Reach 3 or Reach 4 would require extensive coordination with State Parks and potentially place undue burden or responsibility on State Parks to implement or manage. As such, installation of a groin structure in Reach 3 or 4 was not considered feasible at this time and such an alternative was not considered as part of this plan. The current proposed extent of the pilot sand retention structure considered as part of the preferred design is placed was sited by the Project engineer at the most southerly extent of Reach 2 based on existing beach and ocean conditions, as well as property ownership and project goals and objectives. In this proposed alignment, the proposed sand retention structure would provide the greatest benefit to the project by helping to retain sand directly seaward of the proposed dune system. The other location identified as potentially suitable for a sand retention measure is extension of the nearshore reef near Tar Pits Park within Carpinteria State Beach in Reach 4. Biological concerns caused the engineer to withdraw that option from consideration. In addition, the length of the pilot structure positioned at Linden Avenue to retain a beach along the City is shorter than a structure to be located farther south, and this will minimize or eliminate downcoast effects.</p>
1-5	<p>With respect to consideration of an alternative involving multiple sand retention structures, such an alternative is still under consideration and could be carried forward, but the initial pilot groin was considered to be a single sand retention feature to simplify the field experiment. This simplified approach reduces compounding factors on shoreline effects and provides data useful to determine whether additional structures are needed. The Project engineers concluded that the single groin feature could potentially be modified to perform optimally with minimal or no downcoast effects by lowering or raising the crest elevation, notching the crest, and/or by lengthening or shortening its distance offshore. In addition, as the goal is to widen and protect the City beach, multiple groins to south would not be effective in accomplishing that goal. Groins are not desired north of Carpinteria City Beach due to that coastal reach being entirely fully protected with a revetment.</p>
1-6	<p>With respect to consideration of an alternative involving a living shoreline without nourishment or installation of a groin structure, the life span of such an alternative would be short and render the feature less effective at buffering against flooding, as</p>

	<p>compared to the situation of providing a protective beach to absorb wave energy. As identified in the City's SLRVAAP, the City's beaches will be subject to coastal erosion under both existing conditions and all sea level rise scenarios. As such, in the absence of any beach nourishment or other coastal adaptation measures, beaches along the City's coastline are expected to erode/narrow, thereby reducing viability of a living shoreline project that does not include an element of beach nourishment. For these reasons, such an alternative was not considered in this plan.</p>
1-7	<p>With respect to consideration of an alternative involving a living shoreline with increased height and less width, such an alternative would be similar to the winter dike. This feature would function well with respect to reducing wave overtopping, but would not achieve other goals of maintaining access and views. It would also be vulnerable to damage due to its reduced girth (volume per unit length) compared to the lower and wider dike (e.g., preferred design alternative). It is more easily destabilized and damaged with steeper slopes and a greater elevation. Ultimately a longer-term solution could involve a higher living shoreline or dike to protect against higher water levels with a widened base, but these may need to be combined with a widened beach for added protection and sand supply to the dike, and potentially a sand retention measure if proven effective.</p>
1-8	<p>A discussion of hazards and impacts caused by flooding under different scenarios is provided in detail in the City's SLRVAAP supported by sophisticated sea level rise modeling. As stated therein under the <i>Executive Summary</i>, with approximately 2 feet of sea level rise, more extensive coastal flooding and coastal beach erosion during storms could affect structures, land uses, and infrastructure between Ash and Linden Avenues particularly south of the UPRR, as well as in the Carpinteria State Beach campgrounds; such flooding could also begin to penetrate into areas north of the UPRR such as the City's Downtown. Coastal bluff erosion would continue to impact UPRR, recreational trails, and habitats along the Carpinteria Bluffs, with coastal bluff erosion beginning to accelerate under 1 to 2 feet of sea level rise. Coastal flooding may also begin to encroach into areas bordering the Carpinteria Salt Marsh. Routine high tides would largely be confined to existing creek channels and the Carpinteria Salt Marsh, but during rain events, the increased tide elevations would likely back up stormwater drains and could cause extensive stormwater flooding in low-lying neighborhoods. Future studies and detailed planning and engineering design would be required for Project implementation and would likely include further detailed coastal hazards modeling and analysis of impacts to landward facilities in the event of dune overtopping. However, detailed discussion or analysis of hazards and impacts to roadways, public access areas, and private property in the event of failure of the Project, flooding, and inundation has already been addressed as part of the SLRVAAP and would be further considered as part of the City's new pending Coastal Resiliency Element of the General Plan/Local Coastal Plan. For more detailed analysis of these coastal hazards and potential impacts from flooding and inundation, please refer to the City's SLRVAAP. The City's Coastal Resiliency Element of the General Plan/Local Coastal Plan and the associated Program Environmental Impact Report will all be subject to future public review and discussion.</p>
1-9	<p>Information presented in the plan regarding potential sediment sources is based upon initial review of available detailed studies such as the recent Carpinteria Salt Marsh Enhancement Plan Update prepared by the County of Santa Barbara (County) Flood Control and Water Conservation District (Flood Control District) in 2020, older in depth</p>

	<p>studies of on- and offshore studies prepared by the Beach Erosion Authority for Clean Oceans and Nourishment (BEACON), such as the 2009 Coastal Regional Sediment Management Plan which included sediment sampling, existing literature sources, and knowledge of the local area and Santa Barbara Littoral Cell. As noted in the discussion of potential sediment sources under the <i>Living Shoreline Design Alternatives and Modeling</i> section of the plan, more detailed study and testing of potential sediment sources to determine suitability of source material for dune construction and beach nourishment would need to be more thoroughly investigated at a later phase of the Project. With regards to fine grained sediment, beach nourishment and dune creation would be subject to regulatory standards regarding sediment grain size, although many agencies such as the Flood Control District are working with regulatory agencies to consider permitting a higher proportion of fine-grained sediments than is currently allowed. Any such change would be subject to careful regulatory review and consideration.</p>
<p>1-10</p>	<p>The plan involves the preliminary investigation and planning work associated with implementation of the proposed living shoreline coastal adaptation strategy and an experimental groin to retain nourished beach sand as identified in the City's SLRVAAP. As noted in the plan, additional future studies, such as those required for detailed design of the Project, any proposal for installation of an experimental groin and permitting/environmental review, will be completed for the Project and will explore triggers and methods for removing the groin, should it have adverse impacts on downcoast beaches.</p>
<p>1-11</p>	<p>The plan involves the preliminary investigation and planning work associated with implementation of the proposed living shoreline coastal adaptation strategy identified in the City's SLRVAAP. The plan identifies and describes the preliminary monitoring and maintenance activities at a level of detail appropriate for an initial feasibility study that should be further explored and refined through additional planning work to be completed at a later phase of the Project. The City will continue to coordinate with the California Coastal Commission regarding additional study and design of the Project, including the development of additional detail and specific monitoring and maintenance thresholds and actions for the Project. However, at this preliminary stage of conceptual project design, monitoring and maintenance thresholds and actions for the Project have been developed at an appropriate level of detail for an initial feasibility study and cannot be developed due to the absence of detailed modeling and designs.</p>
<p>1-12</p>	<p>The City has coordinated with State Parks and other property owners throughout development of this plan, although the plan focuses on those areas under City jurisdiction which have been identified as most threatened by sea level rise in the City's SLRVAAP. The City has discussed the details of potential improvements within Carpinteria State Beach with State Parks staff and will continue to engage and coordinate with affected property owners, key stakeholders, permitting agencies, and responsible parties as the City initiates further required study and refinement of the Project. However, it should be noted that the design team reviewed the existing dune system along Reaches 3 and 4 within Carpinteria State Beach and found that these dunes are generally robust enough to protect landward areas from sea level rise over the Project planning horizon. The Project design team also considered multiple dune design options and found that the preferred design alternative provided the best protection against the impacts of projected sea level rise and would reduce or prevent</p>

	substantial loss of coastal views. Therefore, review of a high dune crest was rejected as unnecessary, not reflective of natural local dune conditions, and potentially creating maintenance issues.
1-13	As part of the update to its General Plan/Local Coastal Plan, the City performed extensive outreach to disadvantage communities, including issues associated with sea level rise, coastal resiliency, and adaptation. The City held multiple workshops designed to engage disadvantage communities, provided materials in English and Spanish, and engaged local community organizations to facilitate such outreach. This plan was developed in response to initial public outreach and a multi-year public engagement effort to provide preliminary information for City decision-maker consideration. The plan also facilitates additional public feedback regarding a near-term adaptation strategy to address vulnerable/disadvantaged communities. Additional outreach to disadvantaged communities would be conducted during future planning efforts, such as during detailed project design and environmental review. Throughout the process of preparing this plan, the City built upon initial extensive public outreach and facilitated several new Project specific workshops and public meetings with key stakeholders, interested parties, and City residents – including disadvantaged communities – to discuss the plan process, findings, and recommendations. As part of additional future planning process and study of the Project and other coastal adaptation strategies, further coordination with disadvantaged/environmental justice communities will take place.
1-14	The City appreciates the information regarding the California Coastal Commission’s upcoming Round 7 Non-Competitive Local Coastal Program (LCP) Grant Program and will continue to coordinate with the California Coastal Commission regarding the Project and potential future funding opportunities.
Comments Received from California Department of Parks and Recreation	
2-1	The City appreciates the comments provided by State Parks and the importance of Carpinteria State Beach to City and State residents and visitors, its contribution to the City’s economy and culture, and the central role played by the sandy beach. With regards to potential downcoast sand buildup and impacts to State Park’s maintenance, as the groin would retain sand upcoast from the State Park, such sand buildup impacts would be unlikely. However, the proposed groin would be a pilot project that would be studied and monitored in collaboration with State Parks to avoid or minimize any deleterious effects of Carpinteria State Beach. Project design can minimize these impacts by over-nourishing (i.e., pre-filling) the project site following groin construction to promote sand transport downcoast or installing a low elevation and short length groin, which allows sediment to pass once a certain beach width is obtained upcoast. As explained under discussion of <i>Sand Retention Design Options</i> , a sheet pile groin could be adjusted or removed if monitoring indicates or reveals impacts to Carpinteria State Beach or other downdrift beaches. At this preliminary planning stage, the plan discloses such potential impacts and provides general monitoring and adaptation proposals to ensure any potential impacts to Carpinteria State Beach would be addressed and included in future estimated maintenance costs if needed.
2-2	The City appreciates our relationship with Channel Coast District (CCD) of State Parks. The City will carefully coordinate with CCD on overall Project design as well as groin design and parameters for potential groin modification/monitoring.

2-3	The City acknowledges the importance of cultural resources within Carpinteria State Beach and other downcoast areas and would like to note that the City's General Plan/Local Coastal Plan contains policies requiring protection of such resources. Future Project planning and design, as well as environmental review, would carefully consider potential risks to environmental resources which would be fully analyzed in future planning efforts and required environmental review.
2-4	The City understands and supports the priorities for use of existing State Park fees. Any suggestion to fund Project elements within Carpinteria State Beach using such fees would be subject to review and approval by State Parks and at their sole discretion.
2-5	The risk of groin impacts to recreation and safety are explained under the discussion of <i>Potential Adverse Effects of Sand Retention</i> and would be further evaluated and considered during Project design and environmental review, in coordination with CCD. The proposed sheet pile groin option would be shorter and more permeable than other sand retention features discussed, such as traditional large rock groins. As discussed in the plan, sheet pile groins tend to be more adjustable in their design compared to rock groins or permeable pile groins, and as a relatively narrow vertical structure require less space on the beach compared to other groin designs. A key additional benefit of a pilot sheet pile groin is that it could be relatively easily removed if it is determined to cause adverse impacts, particularly on downdrift beaches such as Carpinteria State Beach. If the groin were to cause adverse impacts to safety and recreation, it could be adjusted or removed if needed. These potential impacts will be studied in coordination with CCD and monitored during the pilot project and explored further in future planning efforts.
2-6	Groins can modify wave conditions and cause variations in currents, and they are a hardened feature in the water that swimmers or other users can come into contact with. Typically, lifeguard towers are located at groins to carefully watch swimmers, surfers, and the like for marine safety. A well-positioned lifeguard tower can serve to maximize safety. Many examples of groins existing within popular southern California swimming and surfing areas can be considered for design of this pilot project and implementation of marine safety measures. Careful monitoring of the performance of the groin and its effects on downdrift beaches and shoreline recreation is an important aspect of the Project. If the groin were to cause adverse impacts to safety and recreation, it could be adjusted or removed if needed. The potential impacts of the experimental groin will be studied in coordination with CCD and monitored during the pilot project and explored further in future planning efforts.
2-7	The City is committed to working cooperatively with CCD as the Project moves forward. The City greatly appreciates the value of Carpinteria State Beach and is committed to a cooperative, working relationship with CCD on this potential future Project.
Comments Received from County of Santa Barbara Public Works Department, Flood Control and Water Conservation District	
3-1	The City appreciates the Flood Control District's interest in the Project and looks forward to coordinating with the County on future sediment disposal/ beach nourishment operations. Referenced discussion in the plan has been revised from "would" to "could".
3-2	The City understands the Flood Control District's financial constraints and this comment has been noted and will be provided to City decision-makers for consideration.
3-3	All references to "flood detention basins" have been revised to "debris basins."

3-4	Referenced discussion in the plan has been revised to clarify and acknowledgement the absence of a specific program and permits to place debris on beaches. The City understands and appreciates the Flood Control District’s support of a regional sediment management program and bringing beach compatible material to area beaches and understands that local cities within the South Coast communities would need to work cooperatively with the County for this effort to be successful.
3-5	Referenced discussion in the plan has been clarified to explain barriers to depositing basin sediments onto beaches. The City understands the need for a well-defined program to bring beach compatible material to the coast and is encouraged that the County is working with BEACON on regional sediment management issues.
3-6	All references to “flood detention basins” have been revised to “debris basins.” Referenced discussion in the plan has been revised to clarify how the Flood Control District places sediment on local beaches.
3-7	Referenced discussion in the plan has been revised to clarify how the Flood Control District places sediment on local beaches.
3-8	Referenced discussion in the plan has been revised to include details about the Goleta Slough Dredging Program and the 2021 update to the Maintenance Plan. All references to “flood detention basins” have been revised to “debris basins.”
3-9	All references to “flood detention basins” have been revised to “debris basins.”
3-10	Referenced discussion in the plan has been revised to remove “and debris basins”.
3-11	Referenced discussion in the plan has been revised remove statements that the Flood Control District does not address coastal oceanic flooding. Referenced discussion regarding the collaborative funding opportunities with the Flood Control District has been revised to instead state that the City could collaborate with the Flood Control District and BEACON on permitting and environmental review of a regional sediment management program. It was not the City’s intent that Flood Control District revenues be used to fund this plan, but to disclose that a regional funding mechanism to address flood hazards already exists and could perhaps be used for regional sediment management which could also potentially benefit the City’s beaches. Any decision on use of Flood Control District funds for regional sediment management and coastal flood reduction would of course be determined by Flood Control District’s staff and Board of Directors.
3-12	Referenced discussion in the plan has been revised to better explain the goals of the Flood Control District’s programs and clarify the Flood Control District’s role in beach nourishment. The City acknowledges the importance of the Flood Control District’s sediment disposal program which provides the only currently funded regional program for conveying riverine sediments to the beach with associated beneficial impacts to the City and regional beaches.
Comments Received from Smart Coast California	
4-1	The City appreciates the interest of Smart Coast California in the Project and understands that a range of options are being implemented by coastal jurisdictions in shoreline management. Artificial reefs, artificial headlands, geotubes, and similar methods for slowing wave action were considered as part of this plan and are addressed under discussion of alternatives considered and discussed in the <i>Living Shoreline Design</i>

Alternatives and Modeling section and Appendix B of the plan. As discussed therein, such alternatives were discarded due to permit challenges, cost, and biological resource concerns, not necessarily due to lack of effectiveness. Challenges with a breakwater or artificial reef include the initial cost of breakwater or reef construction and anticipated major challenges with permitting. No recent permits for breakwaters have been issued in the State and none have been approved by the California Coastal Commission since the 1960s, leading to concern that such a project could not reasonably be permitted. Construction of an artificial headland was ultimately discarded from further evaluation due to potentially higher costs association with material acquisition and construction, as well as concerns with challenging permitting and impacts to biological resources. In addition, the plan states that nearshore reefs or headlands would require larger size rocky material to feasibly withstand and reduce offshore wave energy and also require a much larger footprint, thereby making such features more costly than other sand retention measures. While the plan recognizes and considered these potential strategies as a near-term coastal adaptation strategy, living shorelines have proven to be reliable, affordable, and feasible strategy from a regulatory and cost perspective than other shoreline protection measures. However, the City notes that the County has coordinated with proponents of installing an experimental reef ball system in Goleta Bay and that artificial reefs, artificial headlands, geotubes, and similar methods for slowing wave action may be considered at a future date as part of the City’s planning efforts for longer-term coastal adaptation measures.

Comments Received from Surfrider Foundation

5-1	This comment has been noted and will be provided to City decision-makers for consideration.
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5-2	<p>The City is attempting to pursue development of the greenest possible shoreline management strategy and acknowledges that improperly designed groins can raise concerns. The City hopes to work with regulatory agencies and community organizations make the Project an example of green shoreline management. However, the California Coastal Act, Section 30235, states that “Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply.” As acknowledged in this plan, the City’s SLRVAAP, and by many agencies along the California coast, such structures may be essential to protecting existing structures and public beaches from coastal erosion and coastal flooding associated with sea level rise. The California Coastal Commission has permitted groins, and as such they are located in many places along Southern California’s coast, such as in nearby Ventura. As stated in the plan, with respect to sand retention structures, they have often been difficult to permit in recent past, with the primary disapproval coming from the California Coastal Commission which has sometimes deemed such projects to be in conflict with the Coastal Act of 1972. Key issues that tend to arise surround the impacts that groins may have on downcoast area beaches. While a groin will promote beach growth upstream, the downstream end can suffer from erosion if not addressed in the design and construction to mitigate the impact. Project design can minimize these impacts by over-nourishing (i.e., pre-filling) the project site following groin construction to promote sand transport downcoast or installing a low elevation and short length</p>
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	<p>groin, which allows sediment to pass once a certain beach width is obtained upcoast. As further summarized, while initial implementation and ongoing maintenance costs may be significant, the use of living shorelines which have included some element for sand retention as a coastal protection strategy has risen in popularity in recent years due to the potential for multiple benefits to surrounding coastal communities and ecosystems. State agencies such as the California State Coastal Conservancy, California Coastal Commission, and California Natural Resources Agency have provided funding for past living shorelines projects. At the time of preparation of this plan, installation of a sand retention feature such as the proposed pilot groin appears to be consistent with the California Coastal Act, an effective strategy for addressing impacts from coastal erosion, and a permissible feature of a living shoreline project. However, the plan acknowledges additional future study of a pilot groin project would be required along with careful shoreline monitoring and adaptation actions to address any downcoast erosion issues. Further consideration of future Project design would be performed in coordination with relevant agencies and input from community organizations will be required prior to implementation of such a project.</p>
5-3	<p>Grooming of the beach is not a proposed element of this Project; however, construction of the Project would require some grading and construction work within the Project area, which may include along the beach. Such construction and grading is not atypical for development of coastal resiliency strategies on sandy beaches, and can be done so in a way that does not cause irreparable harm to the beach habitat and ecosystem. For instance, as noted in the Flood Control District's comment letter, the Flood Control District typically manages sediments from South Coast debris basins and creek channels by mechanically placing sediment into the surf zone and letting wave action transfer sediments to the beach. The Flood Control District's program for the placement of sediment along South Coast beaches includes a robust monitoring program which has demonstrated that activities have not caused irreparable harm to the beach habitat and ecosystem. The Project, if implemented, would be required to abide by the conditions of grading permits issued by the City and the County. Any grading would solely be for construction or future maintenance and beach nourishment activities, which is temporary in nature and would be further subject to any conditions of approval or mitigation measures identified as part of future environmental review of the Project. Future planning would also likely include measures for restoring the construction area pre-construction conditions.</p>
5-4	<p>As noted by this comment and throughout the plan, additional future study and planning would be conducted by the City prior to Project approval/implementation. As such, there will be future opportunities to comment on further on more detailed planning, analysis, and design of the Project. These comments have been noted and will be provided to City decision-makers for consideration.</p>
Comments Received from Deane Plaister	
6-1	<p>The City appreciates your note that use of sand and cobble berm as a "soft" structure consistent with the Project's design is preferred. However, as discussed in the plan, the use of an experimental sheet pile groin is an important Project component. A proposed groin would be accompanied by careful design such as overfilling the upcoast beach with sand, careful long-term monitoring and adaptive management to address any downcoast issues. This comment has been noted and will be provided to City decision-</p>

	makers for consideration.
Comments Received from Greg Karpain	
7-1	Thank you for your interest in the Project and acknowledgement of the plans thorough efforts to investigate options. As discussed in this comment, the preferred Project would substantially reduce, but not eliminate wave overtopping and periodic flooding of the nearshore areas of the Beach Neighborhood. As discussed in the <i>Living Shoreline Design Alternatives and Modeling</i> section of the plan, under every alternative considered, whitewater would overtop the dune/beach and could result in damage to facilities landward of the back beach. Storm conditions considered in this modeling effort include the combined storm wave and tidal event that would occur every 10 years, every 20 years, and every 100 years under the 2-foot sea level rise scenario. However, Alternative 3 (Single Ridge Dune with Wider Beach) would minimize the elevation of that water more so than any of the other alternatives. Detailed results of this modeling effort are presented in Appendix C of the plan. It should further be noted that modeling of each of these alternatives to inform this preliminary planning study does not calculate the amount of whitewater which would overtop the dunes and affect landward development. Additional coastal hazards modeling and modeling of the preferred dune alternative would be required to determine final Project design and assess potential amounts of future flooding.
7-2	Refer to response to Comment 7-1 above which notes that the preferred Project would substantially reduce, but not eliminate wave overtopping and periodic flooding of the nearshore areas of the Beach Neighborhood, including during 100-year storm events. As stated therein, additional coastal hazards modeling and modeling of the preferred dune alternative would be subject to further study. In addition, further study and design of the preferred alternative is required and would be completed by the City prior to Project approval/implementation. However, consistent with the City's SLRVAAP, the proposed living shoreline represents a feasible, near-term solution to coastal erosion, flooding, and sea level rise. Additional study of other mid- to long-term solutions and coastal adaptation strategies would be completed as the City plans for additional future coastal adaptation strategies such as through development of a new Coastal Resiliency element of the draft General Plan/Local Coastal Plan.
7-3	See response to Comment 7-1 above. The winter berm program does not meet the key goals of the Project, which include identifying the preferred Project design for a living shoreline and restoring a portion of the historic dune habitats that formerly lined the Carpinteria City Beach. In addition, a wider nourished beach will be essential to reduce the impacts of increased coastal flooding do to sea level rise as the City's beach erode with projected sea level rise, which would gradually reduce the effectiveness of the winter beach berm program. Further, as described under the <i>Project Constraints and Feasibility</i> section of the plan, the City's winter berm program temporarily impacts public access ways and viewshed in favor of coastal erosion protection. When in effect, the majority of beachfront properties lose direct access to the beach unless pedestrians climb over the berm and viewsheds from the street ends and access from private residences are greatly impacted, as the berm reaches heights several feet above the beach surface. Additionally, cobble material is often exposed during winter periods, which can be a difficult material for beach recreational activity. As a result, despite the reduced cost associated with continuation of such a program, it is assumed that implementation of the winter berm program could reasonably result in gradually

	decreasing flood protection benefits over time as the City's beach erodes, greater impacts to coastal access, beach recreation, and impacts to coastal views, while also providing less protection than the preferred alternative.
7-4	As detailed in the <i>Living Shoreline Adaptive Management Plan</i> section of the plan, monitoring and reporting of effects of the proposed pilot groin project will be a critically important aspect of the project. A sand retention structure, potentially at Linden Avenue at the eastern extent of Reach 2, would help retain sand along the proposed nourished beach, increasing longevity of the wider beach resulting from proposed beach nourishment activities, reducing need for more frequent beach re-nourishment and associated costs (e.g., sediment acquisition, construction). However, the exact design and effectiveness of a sand retention structure on maintaining sand on the upcoast beach, as well as its potential impacts on downcoast beaches, remains to be determined and would require further study prior to Project approval/implementation. As proposed in the plan, potential effects on downcoast beaches would be monitored, particularly in Years 1-3 following Project construction. However, after initial release of sand from the nourished beach, the focus of monitoring downcoast of the sheet pile wall groin would be on potential erosive effects as the groin potentially intercepts natural littoral downcoast sand flow.
7-5	Please see response 7-4 above regarding the importance of beach nourishment in reducing flood hazards due to erosion of the City's beach over time. The combination of a wider nourished beach, the dune system, and groin will combine to provide the highest level of flood reduction under near-term sea level rise projections and help improve the resiliency of the Beach Neighborhood. As discussed above, the plan acknowledges that future studies would be required to analyze the potential impacts of all aspects of the Project, including dredging from offsite locations. Additional studies, required environmental review, and permitting will be required and would serve to analyze these issues further.
7-6	See the response to Comment 7-3 above. Consistent with the SLRVAAP, the living shoreline was identified as a near-term coastal adaptation strategy, and this plan was developed as a preliminary study to analyze potentially feasible options for a living shoreline. As noted throughout the plan, further studies, refinement of the Project design, coordination with relevant agencies, and environmental review is still required prior to the City approving/implementing the Project.
Comments Received from John Callender	
8-1	The plan is a component of a multi-faceted approach to addressing SLR and coastal hazards. See the responses to comments 1-3, 1-8, 7-3 above.
8-2	Much of the cost of the proposed living shoreline is related to beach nourishment for a wider sandy beach, which serves two purposes: to feed sand into the living shoreline to allow it to naturally be maintained, sustained, and grow, and to directly protect the living shoreline from initial coastal hazards. Beaches offer an effective wave energy absorber and protect the living shoreline from a direct storm impacts. It is assumed that during severe storms the beach would still provide some measure of protection but that waves would eventually reach the living shoreline and it would sustain damage, but not be entirely destroyed so it would still provide benefit. Beaches will actually retreat and rise over time with SLR. Sufficient beach width can remain in place for greater than 2 feet of SLR.

8-3	The City understands that funding this project would require multiple sources, as identified in Appendix E. Grant funding will be a critical component to moving forward with this project.
8-4	The plan involves the preliminary investigation and planning work associated with implementation of the proposed living shoreline coastal adaptation strategy identified in the City's SLRVAAP. The plan identifies and describes the preliminary monitoring and maintenance activities at a level of detail appropriate for an initial feasibility study that should be further explored and refined through additional planning work to be completed at a later phase of the Project.
8-5	A discussion of hazards and impacts caused by flooding under different scenarios is provided in detail in the City's SLRVAAP supported by sophisticated sea level rise modeling. Conservative estimates predict 2 ft SLR by approximately 2050. Future studies and detailed planning and engineering design would be required for Project implementation and would likely include further detailed coastal hazards modeling and analysis of impacts to landward facilities in the event of dune overtopping. However, detailed discussion or analysis of hazards and impacts to roadways, public access areas, and private property in the event of failure of the Project, flooding, and inundation has already been addressed as part of the SLRVAAP and would be further considered as part of the City's new pending Coastal Resiliency Element of the General Plan/Local Coastal Plan. For more detailed analysis of these coastal hazards and potential impacts from flooding and inundation, please refer to the City's SLRVAAP. The City's Coastal Resiliency Element of the General Plan/Local Coastal Plan and the associated Program Environmental Impact Report will all be subject to future public review and discussion. Additionally, the City is closely monitoring legislative work at the State and Federal level.
8-6	See comment 8-5. With approximately 2 feet of sea level rise, more extensive coastal flooding and coastal beach erosion during storms could affect structures, land uses, and infrastructure between Ash and Linden Avenues particularly south of the UPRR, as well as in the Carpinteria State Beach campgrounds; such flooding could also begin to penetrate into areas north of the UPRR such as the City's Downtown.
8-7	As identified in section 4.2 of the Constraints and Feasibility Analysis, private property owners would need to be approached regarding the project. The plan evaluates a living shoreline and beach nourishment located seaward of the existing property lines.
8-8	The City Attorney's Office has evaluate potential conflicts of interest associated with development of the plan. The City's Parks and Recreation Director is not (and has not been) involved in the development of this plan. The City Attorney's Office also reviewed the City's Parks and Recreation Director's communications with the consultants drafting the plan and have determined that these communications were associated with providing factual information about beach conditions to the project team and do not constitute a conflict of interest under the Fair Political Practices Commission's regulations.