Posted: January 10, 2020

City of Trinidad

NOTICE AND CALL OF A MEETING OF THE

TRINIDAD PLANNING COMMISSION

The Trinidad Planning Commission will hold a regularly scheduled monthly meeting on
WEDNESDAY JANUARY 15th, 2020, AT 6:00 P.M.
in Town Hall at 409 Trinity Street.

The following items will be discussed:

I. ROLL CALL

II. APPROVAL OF MINUTES – November 20, 2019

III. APPROVAL OF AGENDA

IV. ITEMS FROM THE FLOOR

V. AGENDA ITEMS

Discussion / Decision / Public Hearing / Action

1. Election: New Chair and Vice Chair

2. Water Policies: Discussion of water policies and standards for evaluating requests for new water service.

3. General Plan Update: Discussion of hazards related policies. *Continued from the December 18, 2019 meeting.*

VI. COMMISSIONER REPORTS

VII. STAFF REPORT

VIII. FUTURE AGENDA ITEMS

PLEASE DO NOT REMOVE OR COVER UP

IX. ADJOURNMENT

The meeting packets can be accessed at the following link:
http://trinidad.ca.gov/document-library/pc-meeting-packets-2019

MINUTES OF THE REGULAR MEETING OF THE TRINIDAD PLANNING COMMISSION
WEDNESDAY, NOVEMBER 20, 2019

I. CALL TO ORDER/ROLL CALL (6:01 pm)

Commissioners Present: Graves, Kelly, Stockness, Johnson, Lake
City Planner Staff: Parker, West
City Staff: Zetter, Stunich

II. APPROVAL OF MINUTES

August 21, 2019 (continued from September 18th meeting)
Motion (Kelly/Lake) to approve the minutes as amended. Passed (5-0).

October 2, 2019
Commissioner Lake was concerned that her comments regarding housing were not appropriately reflected. She requested staff listen to the recording and amend the minutes accordingly.
The minutes were continued to the next meeting.

October 16, 2019
Motion (Lake/Kelly) to approved the minutes as submitted. Passed (3-0) with Johnson and Stockness abstaining due to not having been at the meeting.

III. APPROVAL OF AGENDA

The agenda was approved by acclamation.

IV. ITEMS FROM THE FLOOR

None

V. AGENDA ITEMS

Discussion/Decision/Public Hearing/Action

1. Trinidad 2019-12: Grading Permit and Coastal Development Permit for Phase 2 of the Trinidad Area of Special Biological Significance (ASBS) Stormwater Improvement Project. The project includes decommissioning the existing stormwater outfall and replacing it with a system of localized stormwater treatment chambers and infiltration basins.

Staff report
Parker stated the California Coastal Commission requested additional information be added to the staff report about how sea-level rise, and a few other issues, have been addressed. In addition, City staff realized that the Open Space zone requirements, which apply to a portion of the project, were not addressed in the staff report. Therefore, staff is recommending that the Planning Commission continue this hearing to the December meeting. She explained there have been minor changes since the CEQA document, clarifying there has been a filtration basin addition on Underwood. Parker summarized that the City had already performed the appropriate geotechnical studies, a cultural resource survey, tribal consultations, etc., which were all

completed as part of the environmental review process; NEPA and CEQA documents were completed for this project.

Parker explained the project is predominately located in City right of ways, including Edwards Street, Ewing Street, Underwood Drive, Van Wycke Street, and Galindo. However, a portion of the project will occur within the gravel parking lot within the Trinidad Harbor Area, zoned Open Space. She summarized the permit requirements for the project, and how the City Engineer has designed the project to meet the necessary findings, including addressing slope stability issues. Also, the project will include decommissioning the existing stormwater outfall, to be replaced with a system of localized stormwater treatment chambers and infiltration basins. The project won't have visual impacts. Parker confirmed the County Health Department was consulted regarding impacts to leachfields.

Commissioner Comments/Questions
Commissioner Stockness questioned whether the stormwater facility located in the parking lot near State Beach is underground. Parker confirmed that it is, and the City worked with the Rancheria during placement discussions. Parker clarified all that will be visible are drain inlets and manholes. In terms of the existing outfall, it goes down the Galindo Street right-of-way, and clarified that section of pipe will be abandoned in place, and filled in with a concrete slurry. A new pipe will be constructed from the intersection of Van Wycke and Galindo, along Van Wycke and down Edwards to the parking lot. Furthermore, the outfall will be demolished, the piping will be removed back to the parking lot, and HSU's outfall will remain. Parker clarified the permit needed for that part of the project will need to go through the CCC because of its proximity to the beach. Construction will occur during the summer of 2020.

Commissioner Johnson emphasized, due to the project's complexity, the City needs to do everything possible to alert residents of the construction schedule and locations. Parker stated there is a condition requiring a traffic control plan. Commissioners Lake and Stockness echoed Johnson's concerns. Johnson requested clarification regarding infiltration, treatment chambers, and overflow bypass. Parker advised the questions should be directed to the City Engineer. Johnson requested clarification on page 3 of 10 of the Cultural Resource Monitoring Plan. Parker explained that she is unsure of the exact details, as well, but the plan has been vetted by the USDA and the interested tribal groups. She clarified the City conducted a tribal consultation, and advised language from the Yurok's existing protocols was included.

Johnson requested a brief description of the geotechnical analyses that were done. Parker explained bluff stability was known to be a primary concern from the earliest stages of project planning, so a robust geotechnical report and groundwater model were completed in 2012. She further advised an extensive amount of groundwater monitoring and geologic transects were created using sonic technology. She stated that those reports enabled the City to develop a topographical map of bedrock, and to determine how groundwater flows through the City, and how groundwater levels change with infiltration. She further confirmed both reports were peer-reviewed and were completed for Phase 1, but updated for Phase 2.

Lake requested the CCC staff's comments. Parker advised a CCC comment letter on the CEQA document was received in the spring and provided to the Commission; a new letter has not been received. Lake stated she is concerned about the project's cumulative impact, as multiple projects will be underway during summer 2020. She also stated her concern regarding the cultural monitoring plan, and questioned how tribal agreements are conducted. Parker explained that

agreement by all parties is not always necessary, but the TAS did participate in the development of the protocols. A discussion regarding notification of when cultural monitoring takes place occurred.

Public Comment
D. Bruce (Trinidad resident) stated his support of the project, but questioned the installation of a curb on Underwood, shown on page 7 of 12, due to access concerns. Bruce questioned the work hours for the project. Bruce suggested reducing the work hours, or having them start at 8:00 am rather than 7am, and extend it an hour later into the evening.

In response, Parker clarified it's only a small rounded curb to direct water that can be driven over. She also confirmed the work hours are currently specified as starting at 7:00 am M-F.

Commissioner Discussion
Commissioner Graves supported a limitation on early morning work hours. Commissioner Stockness questioned who the City has contracted with, and where the staging area will be. Parker advised the project is going out to bid in February, so the contractor has not been chosen yet. The harbor parking lot will likely be the primary staging area, but it will likely move around during construction. A discussion occurred regarding staging information, public notification, and neighborhood meetings. Graves suggested adding a condition in the bid process about staging information.

Motion (Stockness/Johnson) to continue to Dec 18th meeting. Passed (5-0). Passed unanimously.

1. Chappel 2019-08: Design Review and Coastal Development Permit to remodel an existing 1-story, 4-bedroom, 1,982 sq. ft. residence. The project includes raising a 418 sq. ft. section of roof from approximately 8.5 ft. in height to a max of 12.25 ft., extending approximately 400 sq. ft. of roof over existing patios and walkways, the addition of 40 sq. ft. to the covered entry, and replacing one bedroom with an expanded master bath and laundry room. After project completion, the residence will be 3-bedrooms, and will remain 1-story and 1,982 sq. ft. in floor area. A new 3-bedroom septic system was recently installed.

A discussion regarding conflicts of interest occurred. It was confirmed Commissioners Lake, Stockness, and Kelly have presumed monetary conflicts, as their residences are within 500 ft. However, they each refuted that presumption, arguing that the project will not impact their property values. City Attorney Stunich confirmed none have a conflict of interest. No members of the public came forward with concerns.

Staff Report
Parker advised the project, located in the Urban Residential (UR) zone, is relatively minor. The applicant is seeking to raise a 418 sq. ft. section of roof from approximately 8.5 ft. in height to 12.25 (max 12.5) ft. Additionally, the project includes extending approximately 400 sq. ft. of roof over existing patios and walkways. There will be an addition of a 40 sq. ft. covered entry, and a bedroom will be eliminated and remodeled to expand a master bath and add laundry room. Parker explained the remodel will change the existing residence from a 4-bedroom to a 3-bedroom, consistent with the septic design. She also confirmed the property's septic system was recently replaced, and the house has a pre-existing, detached living space.

Commissioner Comments/Questions
The architect, P. Lapotre, present on behalf of the applicant, stated story poles were installed the weekend before the hearing. Commissioner Kelly questioned if a roof deck is planned to be installed. Parker advised a roof deck was originally proposed, but has been since removed from the project. Commissioner Stockness questioned if the third bedroom was used as a storage room. Lapotre advised the preexisting detached living space, will continue to be used as a bedroom. He advised the project will improve sunlight, and parking will remain as is.

Public Comment
R. McCarthy (Trinidad resident) stated she has not examined any of the plans, but did state she received a letter from the City. However, she discussed her dismay about a lack of notification regarding septic work. McCarthy questioned the reasoning for updates and notifications. McCarthy questioned if the detached living space will be rented. She though the new rooflines would be too close to her property.

In response, Parker advised septic repair is not subject to public notification, and verified the project was properly noticed, documents have been available at City Hall for review, and staff reports are posted online the Friday before the hearing.

P. Lapotre, advised the applicant is retiring, so the plan is to return to the area; the detached living space will not be rented separately.

Lapotre discussed the dimensions of the project in terms of the overhangs proximity of the fence, stating it will expand a foot more than the original. He confirmed it will be 2 ft. from the edge of the fence. Commissioner Lake raised the issue that the City allows for 5 ft. setbacks. Parker clarified that the zoning ordinance indicates roofs can extend 2.5 ft. into the setback Lapotre, in response, advised that the rooflines will be reduced to meet the required 2.5 ft. setback.

Public Comment:
D. Cox (Trinidad resident) stated she is pleased the property owners followed the permit process.

Commissioner Discussion/Decision
Motion (Johnson/Kelly) to approve the application materials and information included in this Staff Report, and based on public testimony, move to adopt the information and required Design Review, View Protection, and other findings in this staff report and approve the project as submitted in the application, as conditioned in the staff report, with the condition to reduce the overhang to meet the 2.5 foot setback. Passed (5-0). Passed unanimously.

Public Comment:
The Chair of the Commission provided an exception to reopen public comment.

R. Duclos (Trinidad property owner) stated she is unclear as to when construction on the Van Wycke trail will take place during the summer of 2020, as the City has never been in touch with them, but instead she was made aware by a neighbor. She stated, if the the City will require use of her land, she will be holding private/group negotiations with the City. Duclos stated she is not in support of the project.

2. Ketchum 2019-11: After-the-fact Coastal Development Permit for interior remodeling of an existing, split-level, 3,505 sq. ft. residence that converted partially finished storage rooms into bedrooms, increasing the number of bedrooms in the main house from two to four. Other work included new seismic protection for existing kerosene tanks, addition of a new hot tub and expansion of the existing septic system. No change in the height or footprint of existing structure occurred, and no changes to the existing 1-bedroom attached accessory dwelling unit were made.

Staff Report
A discussion occurred regarding a potential conflict of interest for Commissioner Kelly due to the proximity of her home to the project. Commissioner Kelly refuted the assumed conflict, stating that it would not affect her property value. City Attorney Stunich agreed there is no conflict of interest, as it is an interior remodel. He asked if there were any objections from the public.

D. Cox (Trinidad resident) stated she does not have an issue with Commissioner Kelly participating, but points out that this project is about more than just remodeling.

City Planner Parker gave a description of the property located on Scenic Dr. and stated it would likely qualify as a historic structure. She stated the house is divided into two wings separated by a covered breezeway, noting that the smaller wing, which is currently the ADU, contains the original kitchen. She explained that Humboldt State University has a collection of photographs that indicates the old studio had been converted into living space by the early 1980s, which is where the main kitchen is now located. Parker explained she was aware the master bedroom was previously unfinished, but the City does not have documentation as to what was there initially. It appears that there were some pre-existing improvements, so the City is treating it as existing space.

The City has limited the number of bedrooms on the property and the occupancy of the STR due to the small size of the old septic system, so some rooms were excluded from the STR and labeled "storage" on the floor plan. Additionally, the accessory unit has been rented to a long-term renter, but that is no longer the case. Parker stated the current desired use now is to rent the entire property as a 5-bedroom STR now that the septic system has been upgraded. She advised the City only became aware of the remodel work during a site visit by the City Building Inspector. Then, the contractor that had performed the work developed health problems, so it was very difficult to get an understanding of complex layout of the property. Due to this, the owner has hired a professional architect.

Commissioner Graves suggested pictures be taken during STR inspections to avoid ambiguity in the future. He asked how this project will impact the STR license. Parker confirmed the project will allow the owner to increase occupancy, so the STR application will have to be revised. Additionally, as there was concern regarding a waitlist, Parker advised no one has come forward to place their name on the waitlist for a STR permit in the SR zone, so the son can apply for the father's license.

Johnson requested clarification on page 7 of 12 under findings. He requested to know why a Use Permit was chosen, over the CDP. Parker explained that usually interior remodeling is considered exempt from a CDP, but because this project is located in a sensitive area at the top of a bluff, CDP exemptions don't apply. But the City's ordinances do not contain a separate process for findings for just a CDP. Parker further clarified that while it seems the use permit findings work

well for this project, she is not suggesting this be a use permit, but instead that it be a part of the findings, which would be consistent with the zoning ordinance.

Johnson questioned parcel boundaries in relation to easements. Parker explained the requirements and process, mentioning a recent project that dealt with the same issue. Commissioner Kelly questioned if the owner will need to have a survey done, and whether Parker Creek Trail will be impacted? Parker clarified the trail will not be impacted, but the owner will need to show either that the property does not extend on to the beach or offer to dedicate a public access easement along the beach. Stockness questioned if the property includes part of the beach. Parker advised she would need additional information to make a determination.

A discussion occurred regarding nonconforming structures and uses on the property. Parker clarified the City code does allow for continuation of an even modifications to nonconforming uses and structures, as long as the existing degree of nonconformity does not increase. Because the size of the structure and density are not increasing, the nonconformity also will not increase.

Lake suggested the City has known for years this property has an illegal living structure, and advised she is unclear as to why the STR licensing and permitting for the remodel are separate issues. Lake discussed the City Council's motion made on 11-10-15, noting that they approved one STR per parcel. Parker advised however, the ordinance language does not prohibit two units to be rented as one STR. Kelly and Johnson redirected the conversation advising that the agenda item is not regarding the STR application. Johnson acknowledged the frustrations heard regarding the lack of enforcement, but after-the-fact permits are common in other jurisdictions as well. Kelly and Graves agreed with Johnson. Lake was not in agreement. For clarity, Attorney Stunich advised if an after-the-fact CDP is granted and two more bedrooms are added, the STR occupancy can increase in accordance with that ordinance. Lake questioned Stunich regarding the legality of the STR's transferability. Stunich advised Lake to discuss it with the City Manager, who will then take it to the Council.

E. Ketchum (owner/applicant) addressed Lake's concerns, advising the property is in a family trust, so ownership has not really changed. He provided a history of the property, specifically making note that there was the lack of documentation on the property, in terms of site plans. He also noted, the contractor that performed the work without a permit, had been instructed to acquire one. Ketchum stated he could not speak to all of the STR issues, but that he and the property managers are doing their best to accommodate the neighbors.

K. Boodjeh (architect) advised that due to the complexity of the project it took a few months to draw up the plans, which were recently submitted to City Planner Parker in September. He discussed how certain areas in question had changed use, and noted a new bathroom now exists. However, he advised the retaining wall on the lower level is estimated to be from the 1960s and the original plumbing is still intact. Boodjeh, stated it is ethically responsible to preserve the structure's integrity, as it is an historic landmark. He advised a few windows have been replaced, but 80% of the original glasswork has been preserved. Graves acknowledged that while he understands the historical value, the property is not classified as a historical site. Boodjeh advised the property qualifies as a historic site on the federal and levels, but the owner has to choose to put it on the registry, which has advantages and disadvantages. A discussion regarding whether or not occupancy could be restricted occurred. The discussion was redirected to separate the STR issue from the agenda item.

Public Comment
Written comments received from T. & D. Freeland (neighboring residents). D. Cox (Trinidad resident) read the letter, which indicates concerns about the use of the property and unpermitted work.

L. Moran (Property Manager) discussed her history with the property and disclosed her past work for the Freelands (neighbors). She addressed the amount of work this project has taken for the owner and herself, having worked tirelessly with SHN, Boodjeh, etc., and stated it has been costly. She advised the updates have not made a significant cange as far as the CDP goes. Moran also raised concern that there is a conflict of interest with Commissioner Lake. Stating she has an extreme bias against STRs, and has been in violation of the City's code of ethics numerous times. Moran suggested reviewing the code of ethics, prior to conditions being added.

Stockness requested information on the construction that occurred without the permit. Moran advised that a new vanity, new tiling, a window (in the existing space), and a kitchen hood were installed. She reminded the Commission this was done by the previous contractor, who was advised to obtain a permit. Moran suggested the issue seems to be the change in use, so she stressed that the space is not being changed. She also advised the septic has been substantially upgraded. Stockness questioned if the City Building Inspector did a site visit after the updates had been made. Moran confirmed he had. Lake stated that since the Commission is not discussing STRs, she doesn't understand why the property manager is present at the meeting. Additionally, she advised the Freelands have had multiple complaints about the property as an STR.

Moran commented Lake's statement is a clear violation of the code of ethics.

D. Cox (Trinidad resident) stated she doesn't understand why the owner didn't acquire a building permit. She stated there is a proper process, which needs to be followed.

E. Ketchum (owner/applicant) stated that public meetings are important but advised that everything is up to City codes. He stated he is solely requesting approval for the after-the-fact permit. He stressed that the City Building Inspector is retiring, so it's important that he inspects the property due to his familiarity with it. He stated he is not asking for the Commission's blessing on the STR, because that is an entirely different process.

Lake questioned the external changes. Ketchum advised some windows have been updated, which are shown in the plans. Lake questioned the open space below the living room. Ketchum advised it was not finished, but the remodel was within the existing footprint.

There was a discussion regarding a site visit, and if one was done a new staff report would be required with the request that all STR language removed. The Commission moved forward without a site visit, as no new information would be obtained.

Motion (Johnson/Graves) to approve based on application materials and information included in this Staff Report, and based on public testimony, I move to adopt the information and findings in this staff report and approve the project as submitted in the application, and describe in this staff report, and as conditioned herein. Passed (4-1), Commissioner Lake voted nay.

3. General Plan Update: Discussion of water related policies. *Continued from the October 16, 2019 meeting.*

Continuation to occur at the special meeting scheduled for December 5th at 5:00pm.

VI. COUNCIL REPORT

City Councilmember Grover advised the meeting was informative.

VII. STAFF REPORT

City Planner Parker advised she is working on the subdivision and grading ordinances, the GP update, grant requirements, and permits.

VIII. FUTURE AGENDA ITEMS

City Planner Parker advised Trinidad 2019-12, regarding stormwater, will be continued in December, along with a discussion regarding water and hazards.

IX. ADJOURNMENT

Special meeting will be held on December 5th at 5:00pm. Next regularly scheduled meeting is December 18, 2019. Meeting has been adjourned at 9:35 pm.

Submitted by: **Approved by:**

Angela Zetter
Administrative Assistant

John Graves
Planning Commission Chair

MEMORANDUM

TO: Trinidad Planning Commission

FROM: Trever Parker, City Planner

DATE: January 3, 2020

RE: Water Policies

At the last meeting, the Planning Commission requested that staff evaluate the service area to determine potential priority areas for providing water service in order to best allocate the City's limited supply of water. It would make the most sense to prioritize areas that would be beneficial to the City to annex. Subareas A and B (from the water demand assessment) are contiguous with the City and are already mostly within the City's designated Sphere of Influence. Additional water demand from those areas is predicted to be low, and annexing these areas would provide increased population, housing, land use control, and potentially tax revenues. Area C (or a portion of it) also must be a priority area, per General Plan Policy 27a, because it is zoned for Coastal Act priority uses. Because water demand from Area C is potentially very high, providing additional water service beyond these three subareas is likely not feasible at this time. Annexation of Area C has high tax generating potential for the City. If conditions change, Area D, portions of which are already in the City's Sphere of Influence, would be next in line for service and annexation. Table 1 shows the water demand of these areas in relation to the remaining treatment capacity of the water plant.

Table 1: Remaining Water Capacity After Build-Out

Area	**Additional Build-out Peak Demand (GPD)**	**Remaining Capacity (GPD)**
Water Plant Total	NA	48,000
City Limits	20,269	27,731
ADUs (inside City)	4,968	22,763
Service Area A	3,382	19,381
Service Area B	6,682	12,699
Option 1: Service Area C Vacant Parcels	12,500	199
-OR-		
Option 2: Service Area C North to Anderson Lane	10,100	2,599

Pre-prioritizing those areas where the City knows it has the capacity to serve and where future annexation could be beneficial to the City, it simplifies the procedures for responding to hook-up requests. The City will have already decided that serving and annexing these areas is beneficial to the City, so that finding no longer needs to be made. In addition, staff would recommend that the new water model be used to test build-out scenarios for these service areas rather than testing it with each new connection. If the water model shows that there would be negative impacts to the water system, financing improvements can be made a condition of water service connection approvals. Therefore, those two considerations have been removed from the proposed connection policies.

The other primary change that has been made to the connection policies is to put them into more of a regulatory/ordinance format. To that end, policies and regulations from other communities were researched. Unfortunately, not many communities have developed detailed water policies or regulations for new hook-ups outside City limits; most just leave it up the discretion of the City Council, similar to Trinidad's current ordinance. The language of the proposed policies/regulations still needs some work, but staff wanted to get additional input before further refining the language too much.

Existing General Plan Policies

Because the City is currently updating its General Plan, these provisions should not necessarily be constrained by existing LCP policies. However, in the short-term, the implementation of these procedures would need to be consistent with those existing policies. Several policies apply to provision of water service outside City limits, and these procedures are generally consistent with those. For example, Policy 24 requires new users to pay the costs of any service extensions, and that requirement has been incorporated into the attached policies. Policy 26a states that water should not be provided to the north service area (Area C) unless the system has sufficient capacity to serve build-out of City limits, and that has been verified. And Policy 27 states that annexation should be considered as part of any hook-up request but allows connections without annexation. With these draft procedures and provisions, the City will have already determined that annexing priority service areas is beneficial but would allow connections with just an "annexation agreement" rather than actual annexation.

In terms of providing water outside City limits, the policy that most impacts City decision-making is 27a, which is the one the Coastal Commission added as a suggested modification to the LCP amendment allowing the CAL FIRE water line extension. This turns out to be a somewhat difficult policy and could be interpreted in several ways. In addition, calculating "water system capacity needed to serve Coastal Act priority uses" can be done in different ways. So, Option 1 and 2 in Table 1 are not the only options. But this issue will need to be evaluated further.

Other Considerations

By the time the Planning Commission meeting occurs, GHD's summary water report will be available. Although I did not have access to that before I left on vacation, I did speak with Patrick at length to ensure that I have an accurate understanding of the current situation. In addition, GHD has reviewed and provided some comments on these draft policies and this memo. But keep in mind this is still a draft, and these provisions would need to be more fully vetted by staff, including the City Attorney prior to any formal adoption by the City Council. But we did not want to take the time to do that until staff gets further direction from the Planning Commission.

The estimated additional treatment capacity of the City's water plant of 48,000 gpd should be considered a good number under current conditions. The City can reliably provide this amount of water under most conditions, including normal and even dry years. However, it needs to be clearly recognized that in more extreme drought conditions, the City could have to curtail the rate of withdrawal from Luffenholtz Creek.

This situation is nuanced, and difficult to quantify. The City gets its water from the portion of the creek that is flowing under the gravel creek bed. There are limitations with the infiltration gallery and wet well, where water is drawn from the creek, that make it more difficult to pump at the maximum rate as the flow decreases. The City may be able to pump at a lower rate for a longer period of time over the day, or make other adjustments, in order to get the same daily production. Further testing of the functionality of wet well / infiltration gallery is likely needed in order to better determine what the limitations are. Overall, the wet well is the primary limiting factor for the treatment capacity of water plant during times of peak usage, because flows are also low. Modifying and upgrading the infiltration gallery would likely be an expensive undertaking considering the sensitivity and permitting requirements for working in the active channel of a creek in the Coastal Zone. Otherwise, the water plant is in fairly good condition, but the City will need to plan for periodic maintenance of the existing components.

Also, keep in mind that the City Council has asked the Planning Commission for specific guidance for evaluating hook-up requests outside City limits, so that is what staff have focused on. However, it is recognized that there are other considerations that will need to be addressed as part of a more comprehensive set of water policies. It can be difficult to try to separate the issues to focus on this one piece. But staff is incorporating these other factors into this policy to the extent possible, and we plan on circulating back to these issues as part of the LCP update.

One of the most important of these will be a drought contingency plan. It will be important to plan ahead for this eventuality. Staff believes the best approach will be to determine or set several critical flow levels for Luffenholtz. As the creek level drops,

different conservation / emergency measures will be implemented at these different levels, becoming more severe as the level gets lower. Provisions may include requirements for all users to cut back a certain percentage, or for the highest users, or users deemed less critical to cut back first. There could also be higher charges for users that use more than a certain amount. These provisions will need to be discussed and developed further; staff is not making recommendations for this issue at this time.

The City also needs to incorporate water use considerations and limitations into development permit applications within the City. In addition, the City needs to develop a strategy for addressing existing users, both inside and outside the City. When reviewing the water data from induvial accounts, it becomes clear that there are a few users that use an inordinately high percentage of water, more than their fair share. Certain accounts would be expected to have higher use, but there are several residences that use significantly more water than would be expected, and this should be investigated and addressed.

Finally, the City needs to determine appropriate fire flow requirements, reduce water loss, inventory and monitor water rights and diversions in Luffenholtz Creek, and continue investigating alternative water sources for the future.

Area Descriptions from Build-out Demand Assessment
As a refresher, the following descriptions of Service Areas A-C from the Water Demand Assessment are provided below.

Area A
Area A consists of 15 parcels covering an area of 24.1 acres, all within the Coastal Zone (CZ). The average parcel size is 1.61 acres, ranging from 0.44 acres to 6.21 acres. Nine of the parcels are currently served by City water, and six parcels are unserved. Four of the parcels are vacant, and one is minimally developed (< $30,000 improvement value). All the parcels are residentially zoned; one parcel has a mobile home and one has multiple units. The parcels are all zoned Residential Single-family, 20,000 square foot minimum lot size (RS-20). However, the County's minimum lot size when OWTS are used (and community water) is one acre. At that size (one acre), there is potential for four parcels to be subdivided into a total of 13 parcels. ADUs are allowed with a Special Permit. This area is estimated to have a maximum potential additional average annual demand of 2,226 gpd and a peak demand of 3,382 gpd during the month of July.

Area B
Area B consists of 43 parcels covering an area of 59.4 acres. The average parcel size is 1.41 acres, ranging from 0.19 acres (8,276 square feet) to 4.14 acres. Twenty-three of the parcels are outside the CZ, 15 are inside the CZ, and five are split. Twenty-two of the parcels are served by City water, and 21 are unserved. At least 13 parcels are vacant, with five more that have minimal improvement value (< $30,000). All the parcels are

zoned residential (RA-2.5 inland and RS/SM or RA-2 and RA-2.5 coastal). Three of the parcels could be subdivided into a total of six parcels. Twenty-four of the parcels can have an ADU by right, and the other 19 would require a special permit. This area is estimated to have a maximum potential additional average annual demand of 4,399 gpd and a peak demand of 6,682 gpd during the month of July.

Area B1 contains 28 parcels totaling 30.59 acres, averaging 1.13 acres, and ranging in size from 0.19 acres to 1.27 acres. There is no subdivision potential in this subarea. Four of the parcels are in the CZ, and three are split by it. Seventeen of the parcels are currently served by City water, and 11 are unserved. Eight of the parcels are vacant, and three have minimal improvement value. All 28 parcels can have an ADU by right. This subarea is estimated to have a maximum potential additional average annual demand of 2,624 gpd and a peak demand of 3,985 gpd during July.

Area B2 contains 15 parcels totaling 28.78 acres, averaging 1.92 acres, and ranging in size from 0.33 (14,375 sq. ft.) acres to 4.14 acres. Three of the parcels could be subdivided into a total of six parcels. Twelve of the parcels are in the CZ, two are outside, and one is split by the CZ boundary. Five of the parcels are currently served by City water, and 10 are unserved. Five of the parcels are vacant, and two have minimal improvement value. Two of parcels can have an ADU by right and 13 would require a special permit. This subarea is estimated to have a maximum potential additional average annual demand of 1,776 gpd and a peak demand of 2,697 gpd during July.

Area C

Area C consists of 12.5 parcels (one parcel is split by the service area boundary) covering an area of approximately 56 acres. The average parcel size is 4.54 acres, with a range of 0.73 acres to 11.23 acres. Ten of the parcels are within the CZ, and three are split by the CZ boundary. None of the parcels in this area are currently served with City water. Only one parcel is wholly vacant, but three other parcels are mostly vacant (either with minimal improvements or unused). All of the parcels have commercial land use designations; 4.5 are zoned Commercial General, and the other eight are zoned Commercial Recreation. However, three parcels are currently utilized for residential purposes. In addition, one of the three RV parks caters to long-term residents (minimum 30-day stay). As mentioned in the Methods section, estimating demand in this area is difficult, because it can be highly variable. The estimated maximum potential water demand of this area is estimated to be on the order of 15,000 to 20,000 gpd average during the low season and an average of 35,000 to 40,000 gpd during the peak season.

<u>Staff Recommendation</u>

Review and discuss draft water policies and direct staff to make changes as needed.

Attachments

- Draft Policies and Procedures for Processing Water Hook-up Requests Outside City Limits
- Service Area Map (Figure 1 from Water Demand Assessment)
- Existing General Plan Water Service Policies

City of Trinidad

Draft Outside City Water Connection Policies

Intent.

The City of Trinidad has a limited water supply. In addition, the provision of water lines can be perceived as an incentive to, and frequently does encourage, development of land for commercial, industrial or residential uses. Restricting the extension of water lines is one method whereby the City can better manage the location and rate of development in and around the City. Extension of utilities and development beyond the City limits could generate excessive demands on water lines, the treatment plant, and the City's water source, that would lead to large capital expenditures and/or water shortages. The City desires to limit development outside of the corporation limits of the City in order to ensure continued sufficient capacity to serve city needs and to encourage orderly development and growth of the Trinidad community.

If the City Manager or City Council determines that a water extension is warranted, such service will be permitted only on an individual contractual basis for a specific property, which contract or agreement will specify the terms and conditions of such service in detail, including any exceptions allowed and any conditions imposed which may be different from the statement of policy of this chapter. The City shall not have an express or implied obligation to provide water service to any property outside the City limits, regardless of that property's location within a preferred service area, the health and safety concerns of the property's current water supply, the property's proximity to services, or the location in an area that is otherwise served by the City.

Requests for City Water

Application submittal and review. All requests for water service outside city limits shall be subject to the following conditions and processes:

A. *Application from persons of interest in property*. The applicant and any other persons with an interest in the property to be connected to the water distribution system shall execute an application for conditional water use and connection permit formulated by the city; and

B. *Responsibility for costs*. the proponent of the extension is responsible for all costs of the extension, including physical infrastructure, application review costs, connection fees, capacity expansion, and annexation (as applicable); and

C. *Fees paid*. The applicant has paid all fees required to be paid; and

D. *Comply with Trinidad Municipal Code*. The applicant agrees in a form suitable for recordation to comply with all water service-related provisions of the Trinidad Municipal Code and requirements of the Public Works Department; and

E. *Prohibition to transfer water*. No applicant or person with an interest in the premises connected to the water distribution system shall sell, transfer, assign or otherwise separate the water use and connection permit from the premises for which it was originally granted, for the use of any other premises, without the express written consent of the city council or its designee.

F. *Valid building permit*. The applicant shall provide evidence of one of the following:

1. a valid building permit that authorizes the erection or construction of a residential or nonresidential structure upon the property, or
2. an existing legal structure and use on the property, or
3. a valid permit for a change of use; and

G. *Waive right to protest annexation*. If not already within city limits, the owner of the property applying for water service shall execute the "waiver of the right to protest annexation" formulated by the city in a form suitable for recordation. To facilitate the waiver's preparation, the applicant shall provide the city with all documents the public works department requires to ascertain the identity of all persons having an interest in the property and to ascertain the identity of the authorized representatives of any business entity having an interest in the property; and

H. *Environmental Review*. The City shall determine the appropriate level of environmental review, subject to the requirements of CEQA, for each proposed extension. If needed, the applicant shall be required to complete such review prior to the appropriate decision-making body considering the application.

I. *City Discretion.* Nothing in this section shall be construed to require the provision of water service outside of the City limits and the City's decision to extend such service shall remain a discretionary authority of the City.

Outside city limits, in preferred service area.

All persons or entities requesting a water service connection outside city limits may be granted a new water connection permit or a permit for a new use or the intensification of an existing use under the following standards:

A. *Service Charge for Connections Outside the City*. Service charges for connection and service shall be as provided under the current rate ordinances of the City, plus a 50 percent surcharge.

B. *Service Priorities*. To ensure orderly outward extension of public services, the city prioritizes water service to those properties that may be appropriate for future incorporation or may otherwise benefit the city and its residents. Trinidad may grant water extension outside city limits under the following circumstances:

1. *Priority Service Areas A & B*. The City Manager, with recommendations from the Water Commissioner/Public Works Director, City Engineer, and City Clerk, shall have the discretion to execute a contract for, and issue a water connection to those premises located within Priority Service Areas A or B under the following circumstances:

    a. *Minor water user*. If the location of service is within Priority Service Area A or B, and the requested connection is for use(s) requiring less than 1,000[1] gpd or less than 5% of the city's remaining service capacity (whichever is less), and the City Manager issues a written determination that:

        I. The connection's primary use will support one or more of the following uses:

            i. Visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation, or
            ii. Coastal-dependent industry per California Coastal Act Section 30101, or
            iii. Private residential development, or
            iv. Essential public services (i.e. Fire Dept., Schools, etc.), and;

        II. Water service provision is consistent with the water service policies of the City and other applicable jurisdictional agencies.

    b. *Major water user*. If the location of service is within Priority Service Area A or B, and the requested connection is for use(s) requiring more than 1,000 gpd or more than 5% of the city's remaining service capacity (whichever is less), and the City Manager issues a written determination that:

        I. The connection's primary use will support one or more of the following uses:

            i. Visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation, or
            ii. Coastal-dependent industry per California Coastal Act Section 30101, or
            iii. Private residential development, or
            iv. Essential public services (i.e. Fire Dept., Schools, etc.), and;

        II. Water service provision is consistent with the water service policies of the City and other applicable jurisdictional agencies, and;

[1] As averaged over any month

III. The city has the excess capacity, beyond what is needed to serve existing customers and all anticipated development within the City, sufficient to serve to applicant connection.

c. *Annexation required.* Annexation to the City shall be required for all water service extensions in Priority Service Areas A & B.

I. The applicant shall be responsible for all costs associated with the annexation application, or a share of those costs. The applicant's share of annexation costs, as determined by the City Manager, shall be due at the time of the water service extension, regardless of timing of the annexation application.

II. Timing of annexation proposals will be determined based on what is most beneficial to the citizens of the community. The annexation may be required prior to, concurrent with, or subsequent to the service extension.

III. The City Council may waive the annexation requirement and issue a written finding that annexation of the affected property is infeasible.

2. *Priority Service Area C.*

a. *Annexation Required*. Annexation to the City shall be required for all water service extensions in Priority Service Area C.

I. The applicant shall be responsible for all costs associated with the annexation application, or a share of those costs. The applicant's share of annexation costs, as determined by the City Manager, shall be due at the time of the water service extension, regardless of timing of the annexation application.

II. Timing of annexation proposals will be determined based on what is most beneficial to the citizens of the community. The annexation may be required prior to, concurrent with, or subsequent to the service extension.

III. The City Council may waive the annexation requirement and issue a written finding that annexation of the affected property is infeasible.

b. In order to extend a water service connection prior to, or concurrent with an annexation application, the City Manager shall issue a written determination that:

I. The connection's primary use will support one or more of the following uses:

i. Visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation, or

ii. Coastal-dependent industry per California Coastal Act Section 30101, or
iii. Private residential development, or
iv. Essential public services (i.e. Fire Dept., Schools, etc.), and;

II. Water service provision is consistent with the water service policies of the City and other applicable jurisdictional agencies, and;

III. The city has the excess capacity beyond what is needed to serve existing customers and all anticipated development within the city sufficient to serve to applicant connection.

3. *Health and Safety Concern*. The City Manager may authorize a water service connection to any premises located outside the city jurisdictional boundary to respond to an existing or impending threat to health or safety, if the following requirements are met:

   a. The premises is presently being served by a well that has been verified as being rendered unsafe from contamination. The applicant shall be responsible for providing documentation of a health and safety threat to the satisfaction of the City Manager;

      OR

   b. The premises was intended to be served by a water well that has an insufficient water flow to serve its needs that meets the following criteria:

      I. The provision of municipal water to the premises shall not promote the creation of a subdivision of the parcel proposed to receive water service, and

      II. There is no other feasible alternative water source to the premises, and

      III. The need for municipal water service is the result of unintentional and exceptional circumstances that are not the product of a non-permitted use of the property, or improper well design and maintenance or any failure to undertake diligent efforts to pursue the development of a well consistent with the state of the then-present technology. The applicant shall provide such evidence to the city as the public work's director requests, and

   c. If the connection requires more than 1,000 GPD, the City Manager shall make a written determination of excess capacity, beyond what is needed to serve existing customers and all anticipated development within the city, sufficient to serve to applicant connection.

d. The provision of municipal water service must not conflict with any California or Humboldt County adopted laws, regulations, policies or standards for the provision of municipal water services, and

e. The service lateral shall not exceed the length of five hundred feet;

Outside city limits, not in preferred service area.

A. When City water service is sought that does not meet the criteria set forth in "Service Priorities", then the request shall be denied, unless authorized by an exception from the City Council, per "City Council Exception".

B. *City Council Exception*. Upon approval by motion of the City Council, the City may, but is in no way obligated to, approve the extension of City water services outside of the City limits. The City Council may only approve such extensions when it is demonstrated that the extension would benefit the city and that the City has capacity to serve proposed existing or new development. The following conditions/process shall apply to such extensions:
   1. *Excess capacity resolution*. Whenever the City Council resolves that the City's water system has more capacity than is needed to serve the build-out development potential within city limits as well as existing unincorporated water customers; and
   2. There is a demonstrated equal or near equal return to the City based on the cost of such service, and
   3. That the provision of such service outside the City benefits directly the health and safety of residents or municipal services of the City, and
   4. That the provision of such service does not induce additional urban development outside the City.

Appeals

A. Any person affected by an approval or denial of a water service connection outside city limits as authorized under this section by the City Manager may appeal to the City Council by filing a notice of appeal with the Clerk of the City within 30 working days of the action of the City Manager. The notice of appeal shall be accompanied by a filing fee set by resolution of the City Council of the City in an amount sufficient to cover costs. The appeal shall stay the effect of the action of the City Manager.

B. The appeal shall be in writing and addressed to the city council. The applicant shall file the appeal with the City Clerk. The City Clerk shall forward copies of the appeal to the City Council, City Manager, and Public Works Director. In the notice of appeal the appellant shall state in full the facts and circumstances which make the

action of the service connection authorization unreasonable. It shall also state the date of the claimed unreasonable action of the City Manager.

C. The City Council shall cause the matter to be set for hearing not earlier than 20 days after the appeal has been filed with the Clerk of the City. The Clerk of the City shall cause notice to be mailed to all affected persons (within 300 feet of the property boundaries) at least 10 days prior to the hearing.

D. At the time and place set for the hearing, the City Council shall proceed to hear the testimony of the City Manager, the testimony of the owner or their representatives, and the testimony of other competent persons concerning conditions upon which the action of the City Manager is based and other matters which the City Council may deem pertinent. Any person affected may be present at such hearing, may be represented by counsel, may present testimony, and other witnesses. The hearing may be continued from time to time. The City Manager may be represented by counsel. At the request of the City Manager, the City Attorney shall represent the City Manager.

E. The City Council may upon the appeal either affirm the action of City Manager or modify the City Manager's action in whole or in part. The decision of the City Council upon an appeal shall be based upon the facts presented to it.

EXPLANATION

- CITY WATER SERVICE AREA
- HAS EXISTING WATER SERVICE

- A
- B1
- B2
- C
- D1
- D2
- D3
- E
- F
- EXCLUDED
- VACANT
- MINIMAL IMPROVEMENTS
- TRINIDAD RANCHERIA (PUBLIC WATER SERVICE)
- WATERLINES
- CITY BOUNDARY
- SPHERE OF INFLUENCE
- COASTAL ZONE BOUNDARY
- CREEKS

N

0 1,000'

1" = 1,000'±

CITY WATER TANKS

HIGHWAY 101

CITY WATER PLANT

TRINIDAD BAY

PACIFIC OCEAN

CITY of TRINIDAD

\\Arcata\Projects\2016\016105A-CityOfTrinidad\GIS\Projects\018013\ USER:jsousa DATE:8/9/2019

SHN	City of Trinidad Water Service Area Demand Assessment Trinidad, California	Water Service Trinidad General Plan (DRAFT) SHN 018013.002
	July 2019 | Fig1_WaterServiceArea	Figure 1

CHAPTER III

DEVELOPMENT OPTIONS & PREFERENCES

…

WATER SERVICE

The City withdraws all municipal water entirely from Luffenholtz Creek. A large trunk line, located along Westhaven Drive, carries the water into the City. All development in the City is connected to the system. Because some of the residences along Westhaven Drive had inadequate wells, the City allowed them to connect to the system.

Prior to improvements in 1987, the Trinidad water system had a storage capacity of 150,000 gallons in a single storage tank. Average monthly raw water production in 1985 was 2,279,000 gallons, with higher demands in the summer months and lower demands during the winter. The total City population in 1985 was 430. At that time, the water system served 268 connections; 176 were within the city limits and 92 were outside the City.

Following system improvements in 1987 under the California Safe Drinking Water Bond Law Program of 1984, the City water system was upgraded in terms of pumping, treatment and storage capacities. With the addition of a second storage tank, storage capacity is currently 300,000 gallons. Production capacity at the pumping station is 150,000 gallons per day, averaged. Maximum "peak period" capacity is 288,000 gallons per day or 200 gallons per minute.

Capacity of the City water system to adequately serve the existing and projected needs of the community has historically been a concern of the City. With the improved system, the City now has the ability to adequately serve existing users.

The California Safe Drinking Water Bond Law Program provided funding for bringing local water systems into compliance with state waterworks standards, but did not provide funding for future capacity. Consequently, the system is designed to adequately service the City, with only a slight capacity margin.

The relationship between the number of new services that can be connected and the

capacity of the system is complex and can only be evaluated relative to specific hookup requests. Any proposals for significant increase in water usage should be viewed with caution.

An additional limitation of the system is the available quantity of water from Luffenholtz Creek. Available water is less than total stream flow due to water rights issues, downstream users and environmental considerations. The 1980 Citizen's Committee found that the theoretical capacity of the Creek is approximately 650 service connections. The Committee recommended that the City allow no more than 400-450 service connections without performing specific watershed studies to verify additional capacity.

Water quality of the finished water within the system is currently tested on a regular basis by the City staff, including tests for coliform and turbidity. Results of water testing indicate that City water is in full compliance for bacteriological standards and marginally acceptable for turbidity.

The water system was also substantially upgraded in 1976. However, portions of the system existing before that time are still in use, well beyond their useful life. This points up a problem for the City of Trinidad - the upkeep and timely replacement of water system components. The value of Trinidad's water system is so great that, on an annual replacement system, the annual cost is greater than the City's financial capability.

To begin to resolve this problem, the City must 1) efficiently manage the system; 2) provide efficient operation and maintenance; and 3) have a well-conceived annual repair-replacement program.

Repair and replacement will contribute to water conservation now hampered by leakages from the system. Water conservation can be further promoted by educating users in water conservation practices.

Service Options

Among the options for the City in providing water services to the community are the following: 1) the City could choose to limit the number of new water service

connections; 2) not limit the number of new water connections; or 3) selectively allow new connections based on specified guidelines.

For any service option, the City should consider: how and where the development is to occur; the physical operation of the water system and ultimate capacity of the watershed; the effect of the City's Sphere of Influence; and whether prospective users are within the city limits or outside the limits.

Service Preference

The City chooses to allow connections on a selective basis with preference given first to users within city limits. The City desires to maintain and upgrade its water system as necessary to provide domestic water and fire flows for routine as well as peak demands. Major expansions of trunk lines should be carefully reviewed.

Recommended Policies

22. The City should promote an active, on-going water conservation program to help keep user charges as low as possible. The City conservation program should extend to upgrading outdated portions of the system to eliminate leakage.

23. The City shall continue to monitor water consumption. In addition, the City should pursue a program to monitor water quality and quantity both within the City system and in Luffenholtz Creek. The City shall implement well-defined, quality programs of operation and maintenance.

23a. Users within city limits should be given preference for service connections.

23b. The City shall plan on regular maintenance and occasional upgrading of the water system, as feasible. The City shall develop a program to periodically upgrade existing distribution lines to current standards. To keep the City up to date on the condition of the water system, need for improvements and level of uses, an annual water report shall be prepared and presented to the City Council.

24. In the event of a proposal to expand the City water system, prospective customers shall provide by agreement with the City the necessary funds in whole or in part

to defer the cost of system improvements. This policy shall be implemented by provisions of the City Water Ordinance.

24a. The City should monitor land use activities and development projects within the Luffenholtz Creek watershed and oppose those activities and projects which may have adverse impacts on creek water quality. The City should develop and maintain an on-going and open relationship with landowners within the watershed.

25. The area of the east and southeast of the City on either side of the freeway, where some properties are already connected to the system, should be included in the City service area to allow for additional connections as the system allows consistent with policies 23a and 27a.

25a. The City should, from time to time, revise its Sphere of Influence to be consistent with the City's water service connections.

In North Trinidad, the unincorporated area north of the City, several commercial developments, visitor accommodations, and residences could benefit from connecting to the City water system. Visitor accommodations have not been able to meet the growing demand because of limited water supplies. If the water system is expanded and a trunk line extended to the north, this development constraint would be altered or removed.

Many residential property owners in North Trinidad recognize that insufficient water supply has preserved the low density rural residential character of the area and they prefer it that way. They see the extension of the City water service into the area as an action that would trigger commercial and residential expansion and destroy the rural character of the area.

There is also concern that additional water would overburden septic tanks and increase ground and surface water pollution. Proposals to form a water district to pay for a water service extension have been defeated by a sizeable majority on several occasions.

<u>Service Options</u>

If the water system is expanded, the City could: 1) allow the extension of a major truck line into the North Trinidad area; 2) not allow any extension of water service into North Trinidad; or 3) allow a limited extension.

Service Preference

The continuation, modernization and expansion of visitor services are important to the economy of the area. The City supports the preference of the residents of North Trinidad that the area west of Patrick's Point Drive north of Anderson Lane remain rural residential in character. Therefore, if water service is extended into North Trinidad it should be confined to: (1) the visitor service area east of Patrick's Point Drive; (2) the CAL FIRE Trinidad Fire Station located at 923 Patrick's Point Drive; and (3) the commercial area on the west side of Patrick's Point Drive south of Anderson Lane.

Recommended Policies

26. The existing commercial area on the west side of Patrick's Point Drive south of Anderson Lane and the area on the east side of Patrick's Point Drive south of the Division of Forestry property should be included in the City service limits to allow for future consideration of water service, consistent with policies 23a and 27a.

26a. Water service should not be provided within the North Trinidad service area until the City system has sufficient capacity to serve all existing and planned development within the city limits consistent with Policy 23a. The size of the trunk line into the North Trinidad service area should only be large enough to serve the projected needs of development in the North Trinidad service area.

26b. Water service may be extended to the CAL FIRE Trinidad Fire Station located at 923 Patrick's Point Drive if the service line extension (i) is sized so as not to exceed provision of the minimum amount of water needed to serve the fire station for domestic water use; (ii) will not remove capacity necessary to serve future development within the City; (iii) will not impair fire protection services in the City; (iv) is designed and conditioned in such a way that it will not service additional parcels/be growth inducing; and (v) is found to be in conformance with the resource protection policies of this plan.

The City must also consider the conditions under which is will provide water service to areas outside the City. Section 30254 of the Coastal Act states in part that where existing or planned public works facilities can accommodate only a limited amount of new development, services to coastal dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development.

Most cities require that those wishing to connect to City services annex their property. Annexation of residential areas increases property tax revenue and State subventions (such as gas taxes). Annexation of commercial establishments, in addition to high property tax revenue, also entitles the City to a share of the State sales tax revenues generated by the annexed businesses.

The City has allowed the connection of about ninety residences outside the City along the main trunk line. These customers are charged a higher rate than in-city customers. In very low density residential areas the extra revenue from water service is approximately equivalent to the net City revenue that would be realized if the property were annexed and the City provided police protection, street maintenance and other services. Therefore, annexation in this situation is not of net revenue benefit to the City.

As residential density and the value of housing increases, and particularly when commercial enterprises are included, annexation could be of net revenue benefit to the City.

Service Options

If the water system is expanded the City could: 1) change the existing policy and require that all property to be provided water service be annexed to the City; or 2) allow water service without annexation in low density residential areas but require annexation where water service is desired for commercial property and residential subdivisions that will represent a net benefit to the City; or 3) provide service to adjacent areas without requiring annexation.

Service Preference

Making annexation a prerequisite could limit interest in connecting to the City water system since the level of services provided by the City is, except for water, essentially the same as those available from the County as less cost. If the water system is expanded, the policy 27 should be used to determine whether annexation should be a prerequisite to water service.

Recommended Policies

27. Applications for water service for property outside the City should be reviewed to determine whether annexation would be advantageous to the City. If there is reasonable doubt as to the economic advantages, the hookup should be allowed without annexation so that the City can benefit from the extra water revenue, provided that there is substantial compliance with all other policies in this plan and with the City Water Ordinance.

27a. Water service extensions shall not remove water system capacity needed to serve Coastal Act priority uses within the North Trinidad Service Area described in policy 26.

MEMORANDUM

TO: Trinidad Planning Commission

FROM: Trever Parker, City Planner

DATE: December 12, 2019

RE: General Plan Update Agenda Item - Hazards

I have updated the geologic related information and policies in the Safety Element based on our discussion at the last meeting and based on a discussion with the Coastal Commission staff. Fort Bragg is currently updating its safety element, and Coastal Commission staff provided me with their comments on that since many of Trinidad's policies are based on Fort Bragg's General Plan. Because time was limited, I focused on primarily on the geologic related hazards in order to complete the requirements under the LCP update grant.

I have not had time to update the Draft Edwards and Van Wyke Streets SLR and Landslide Risk Assessment. I did not get many comments from Commissioners or the public on that document at the last meeting the topic was discussed (November 6), but I did get some general comments from Coastal Commission staff. They would like to see the projected SLR numbers adjusted a bit (newer source and extreme scenario). And they would like to see more detail regarding the infrastructure and resources that may be impacted by bluff retreat as well as more analysis as to the feasibility of relocating existing development. Please bring this report from the November 6, 2019 meeting so we can further discuss it.

I also provided you with the sample policy language from the Coastal Commission's Draft Residential SLR Adaptation Policy Guidance. Some of this policy language has made it into the revised Safety Element, but most has not. It's a lot of detailed language, much of which doesn't necessarily apply to Trinidad. But it does give you an idea of the current direction of the Coastal Commission in regards to responding to SLR. Please let me know if you find things you like or don't like from that document, or if you have any questions regarding the sample policies.

Attachments:

1) Draft Safety Element (18 pages)
2) Coastal Commission's Draft Residential SLR Adaptation Policy Guidance (31 pages)

NO-1.6 The City shall lessen noise increases along the city's arterial and collector roads through project design of streets (including providing buffers to the extent feasible and screening), coordination of routing, and other traffic control measures if needed. (city of seal beach)

NO-1.7 Back-up generators are a pronounced source of noise. Generator noise shall be determined and included in the City Noise Ordinance.

NO-1.8 Noise from quarries and associated truck traffic shall also be included in the Noise Ordinance.

C. SAFETY ELEMENT

1. Safety Environment

California has a beautiful natural environment. Unfortunately, the spectacular natural features also present Californians with many potential natural hazards. Like much of the rest of the state, ~~the~~ Trinidad is susceptible to earthquakes, fires, landslides, and other natural disasters.

According to the 2017 General Plan Guidelines: "The goal of the safety element is to reduce the potential short and long-term risk of death, injuries, property damage, and economic and social dislocation resulting from fires, floods, droughts, earthquakes, landslides, climate change, and other hazards. Other locally relevant safety issues... may also be included. ... Policies in a safety element should identify hazards and emergency response priorities, as well as mitigation through avoidance of hazards by new projects and reduction of risk in developed areas." ~~Government Code § 65302 (g), a Safety Element is for the protection of the community from any unreasonable risks associated with the effect of seismically-induced surface rupture, ground shaking, ground failure, tsunami, slope instability, subsidence, liquefaction and other seismic hazards, flooding, wildland and urban fires.~~

A report entitled “Environmental Conditions and Constraints” (Environmental Research Consultants) dated May 1976 identified such hazards and incorporated their analysis into the previous General Plan policies. Geologic conditions have not changed over the intervening years, though our knowledge about them has increased, so some of those policies have carried through to this General Plan. ~~For this General Plan update,~~ Several additional reports were prepared for the general plan update, including the following: ~~two additional related reports were prepared:~~ (1) Geologic and Seismic Characteristics of Trinidad (~~Kristen Martin,~~ Streamline Planning Consultants, 2007); ~~and~~ (2) Soil Characteristics of the Trini~~d~~ad Area, CA (~~Sam Polly,~~ Streamline Planning

Consultants, 2009; updated ####); (3) Climate Change Vulnerability Report and Adaptation Response (GHD, 2016); (4) Coastal Landslide Hazard Evaluation (SHN 2019); and (5) Edwards and Van Wycke Sea Level Rise and Landslide Risk Assessment and Management Plan (Trinidad, 2019). In addition, multiple, site specific geologic studies have been done since that time. There is no indication that more data is necessary. Changes to the existing General Plan consist primarily of including updated information (such as identification of the Alquist-Priolo Special Study Zone) or policies that improve the notificationcommunication with the public regarding hazards and appropriately restricts development in hazard areas to address these issues.

Earthquake Hazards

Trinidad is located within the highest of five seismic risk zones specified by the Uniform Building Code. The area near Cape Mendocino is a complex, seismically active region, where three crustal plates intersect to form the Mendocino Triple Junction. The area offshore of Cape Mendocino has the highest concentration of earthquake events anywhere in the continental United States. The subducting Gorda and Juan de Fuca Plates form the "Cascadia Subduction Zone," which runs north offshore of Humboldt, Del Norte, Oregon and Washington. Research shows that this system produced a series of great earthquakes (magnitude 8 to 9) over the last 20,000 years at intervals of 300-500 years. The last great earthquake occurred about 300 years ago.

Earthquakes can cause surface rupture from faulting or seismically induced effects such as ground shaking, tsuamis and landslides (though landslides can occur independent of earthquake activity and are therefore discussed separately). Each of these issues is addressed below. The potential for a major seismic event has prompted emergency response organizations to form coalitions and produce and disseminate several good resources for additional information. These include:

Fault Rupture

Fault rupture is the surface displacement of the earth's surface due to the movement along a fault associated with an earthquake. Surface rupture commonly occurs during earthquakes in California, because most faults are less than 15 miles deep and so earthquakes originate near the earth's surface. Ground on one side of the fault moves relative to ground on the other side, and any structures built across the fault trace will be deformed or destroyed. Displacement can be vertical, horizontal, or a combination of both. Displacement may vary from a few inches to several feet. Ground displacement is generally experienced on or within the immediate vicinity of a mapped fault trace. The Alquist-Priolo Earthquake Fault Zoning Act of 1972 established the requirement to regulate development within earthquake fault zones associated with active faults. Development is feasible, but, with a few exceptions, requires detailed geologic and seismic evaluations by certified professionals prior to approval of a building permit.

A portion of the Trinidad area lies within a Special Study (Fault Rupture) Zone, as designated by the State Division of Mines and Geology under the Alquist-Priolo Act of 1972 (Fig. 9a). The zone encompasses about 60 acres, or 19% of the land within City limits. The purpose of the Zone is to ensure that local development patterns do not

~~create seismic hazards; any new development of structures for human occupancy would be required to undergo a geologic study before a building permit would be issued.~~ According to the Alquist-Priolo Act, no buildings may be constructed within 50 feet of any active fault in the zone. Trinidad is affected because there ~~has been~~was development within the boundary of the Alquist-Priolo zones prior to passage of the Alquist-Priolo Act. Much of the undeveloped land also falls in or near this zone. There are two fault zones within Trinidad shown on Fig. 17, the Trinidad head fault zone and the Anderson Ranch fault zone. ~~The City has developed a list of parcels located in the Alquist-Priolo zone to use during the review of development proposals and/or become part of overlay zoning.~~

Ground shaking

Ground shaking is not an earthquake itself but the land's response to the readjustment of the strain in the earth's crust. Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of the earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. Earthquakes originating inside or outside a planning area may cause ground shaking within that area. The degree of hazard depends on the severity of the shaking and the susceptibility of the buildings to damage. ~~The severity of the shaking and the susceptibility of the buildings to damage, in turn, depend on geologic materials and structural conditions. Therefore, l~~Local geologic conditions such as depth to bedrock and groundwater, as well as building height and the type and age of construction, all affect the degree of hazard.

Trinidad is already subject to the highest level of building standards as outlined in the Uniform Building Code and California Building Code.

~~The current Uniform Building Code (UBC) released by the California Building Standards Commission put Trinidad in "zone 4," which has the highest standards for earthquake safety. The UBC sets standards for the seismic design of all structures in volume 1, chapter 16, division 3, sections 1624 through 1634, including "zone 4" properties. The City continues to utilize the most recent standards and version of the UBC for the building permit process.~~

~~The earthquake hazard maps are not forecasts of the ground shaking that will occur in specific earthquake scenarios. However, they can be used to generally identify those areas which are most and least susceptible to violent ground shaking. Series of maps at a scale of 1:24,000 show regulatory zones around surface traces of active faults in California and are produced under the authority of the Alquist-Priolo Earthquake Fault Zoning Act for planning and controlling construction in these zones. Other scenarios and information are available at Earthquake Shaking Potential for California (California Geological Survey) 2008 which shows the relative intensity of ground shaking and damage in California from anticipated future earthquakes.~~ Trinidad has been mapped (e.g. Earthquake Shaking Potential for California, CGS & USGS 2016) as being in a region that is near major, active faults and will on average experience stronger

earthquake shaking more frequently than several other areas in California. This intense shaking can damage even strong, modern buildings, which are designed to protect lives, but not necessarily avoid catastrophic damage. Shaking intensity maps generated by USGS and CGS can direct emergency response efforts to the most heavily impacted areas.

Tsunamis
Tsunamis (earthquake induced surges of ocean water) are a possible hazard in the Trinidad area. The Humboldt County coast is well known for frequent earthquakes due to the proximity of the Cascadia Subduction Zone. Tsunamis can originate from both near and distant earthquake sources. Near-source tsunamis are likely to be associated with strong-ground shaking and may affect coastlines within a few minutes of the earthquake. But a distance-source tsunami may be generated thousands of miles away and take several hours to reach our coast. Areas less than 20 feet above Mean Lower Low Water, except lands devoted to harbor improvements and public access facilities, have generally been designated as Open Space or Special Environment to reduce or prevent damage to from tsunamis. But the tsunami hazard zone actually extends to approximately 40 feet above sea level. Local emergency management agencies have installed tsunami sirens along the coast, including one in the Trinidad Harbor Area. In addition, tsunami hazard zone signs have been installed in Trinidad and other coastal locations.

Unstable Slopes/Landslides
Steep slopes and unstable geologic material create erosion and landslide hazards in some of the Trinidad area. The underlying geology of Trinidad is the Franciscan Complex or “mélange,” which describes the chaotic mixture of rock blocks within a matrix of sheared shale and/or serpentinite, also known as “blue goo” due to its high clay content and susceptibility to earth flows and slumps. Coastal bluffs are especially subject to these hazards due to continuous wave erosion. Landslide hazards are a function of several factors including the steepness and height of the bluff, soil saturation, the underlying geologic materials, the width of the beach in front of the bluff and its susceptibility to wave action. Earthquakes substantially increase the potential landslides, particularly during the wet season.

Because of its chaotic texture and random distribution of rock blocks, landsliding in the Franciscan mélange is highly dependent on the materials exposed in a slope at a particular site. In general, areas where hard rock blocks are exposed along the coastline are associated with resistant headlands, while areas dominated by mélange matrix and devoid of rock blocks are subject to increasing rates of coastal retreat that results in the formation of coves and embayments.
~~According to the Slope Stability Geologic and Seismic Characteristics of Trinidad Background Report (Streamline Planning, 2007), much of the area along the sea cliffs and coastal streams is~~Those areas that are mapped as being unstable or of questionable stability. ~~. These and other unstable areas~~ have been designated as Open Space or Special Environment on the ~~previous~~ Land Use Map ~~and have been similarly designated~~.

Figure 9a illustrates the conditions of slope stability within and around Trinidad. ~~The City transferred this information to its data base and developed a list of parcels that fall in the "questionable stability and unstable zone" category. This has been used during review of development proposals and will become part of overlaying zoning.~~ Review of development proposals by qualified professionals is required by Zoning Ordinance provisions in unstable and questionably stable areas.

~~Unstable areas that were once designated Resource Production are now Special Environment (SE). SE designations and zoning requirements control development and other activities on in areas affected by hazards or environmental sensitive areas.~~

~~Steep slopes and unstable geologic material create erosion and landslide hazards in some of the Trinidad area. Coastal bluffs are especially subject to these hazards due to continuous wave erosion. Development should be located far enough from the edge of the bluffs so that structures are not in danger of being undercut by wave activity in the design life of the project. Development should also be restricted in areas dominated by the Franciscan Complex, as these clay-rich materials are susceptible to earth flows and debris flows.~~

~~The *Geologic & Seismic Characteristics of Trinidad, CA* (Streamline Planning Consultants, 2007), states that slope failures triggered by ground shaking are likely to occur in areas where the water table is high and steep slopes exist, such as along terrace margins and road cuts. Any of the landslide types described under "stability characteristics" can be caused or accelerated by seismic shaking. According to the Division of Mines & Geology "*Planning Scenario in Humboldt and Del Norte Counties for a Great Earthquake on the Cascadia Subduction Zone*" (1995), which does not provide a detailed damage assessment for Trinidad, most of Highway 101 in Humboldt County would be closed for at least three days under a great earthquake scenario. It is reasonable to assume that landslides would be responsible for closing the portion of highway that runs through Trinidad.~~

~~Surface Rupture~~

~~Surface rupture commonly occurs during earthquakes in California because the earthquakes originate near the earth's surface. Ground on one side of the fault moves relative to ground on the other side, and any structures built across the fault trace will be deformed or destroyed. Displacement can be vertical, horizontal, or a combination of both. Displacement may vary from a few inches to several feet.~~

Erosion

Erosion is a concern because it can lead to bluff instability, result in the loss of topsoil, and deliver sediment to the Trinidad Head ASBS. As previously mentioned, the Franciscan bedrock that underlies Trinidad is composed of pieces of relatively resistant rock within a matrix of sheared, unstable material. Area geology is characterized by outcroppings of this material, especially at the coastline, and by the poorly consolidated

alluvial deposits that cover the surfaces of the marine terraces. These different materials are subject to erosion and various types of slope failure.

Erosion of coastal bluffs is a primary concern because the coastline is continuously eaten away by ocean waves, particularly at high tide and during the winter storm season. In addition, sea level ~~may be~~is rising ~~at~~ and is project to continue an approximate net (considering geologic rates of uplift) rate of up to 12 mm per year, thus intensifying the effects of wave erosion ~~(Streamline Planning Consultants, 2007)~~. Bluff erosion tends to occur episodically however, and is difficult to predict. Beach erosion can also occur with sea level rise, and if the bluff is not allowed to retreat with it, beaches may eventually be lost. Sedimentation of coastal water can impact water quality, biological health and aesthetics. ~~Evidence of past cliff retreat is seen in areas such as College Cove. This small bay was "carved" out of weak Franciscan matrix material, and according to aerial photographs, the shoreline retreated at a rate of 0.4 m per year between 1942 and 1974. Cliff retreat has also been documented as actively occurring at the Tsurai Village site located in the City of Trinidad in the Engineering Geologic Assessment of the Tsurai Village (LACO Associates, 2004).~~

~~***Tsunamis and Seiches***~~

~~Tsunamis (earthquake induced surges of ocean water) are a possible hazard in the Trinidad area. The Humboldt County coast is well known for frequent earthquakes due to the proximity of the Cascadia Subduction Zone. Areas less than 20 feet above Mean Lower Low Water*, except lands devoted to harbor improvements and public access facilities, have been designated as Open Space or Special Environment to reduce or prevent damage to from tsunamis. *Tides are most commonly *semi-diurnal* (two high waters and two low waters each day), and the two low waters on a given day are typically not the same height (the daily inequality), comprising the *higher low water* and the *lower low water*.*~~ [TP3]

Flood Hazards

~~The only flood hazard zone available is mapped by the County.~~ The Federal Emergency Management Agency has recently updated its flood maps. City limits had previously been excluded from flood mapping based on an agreement between the City and FEMA that flood insurance was unnecessary, because steep slopes render the risk of flooding essentially nonexistent. However, there is one area along Mill Creek that was mapped as being within the 100-year flood zone (1% chance of occurrence each year). This zone is located on Mill Creek on the eastern edge of the City boundary. The area extends about 1,640 feet up Mill Creek from its intersection with Highway 101 and 350 feet downstream from the intersection. More recent FEMA mapping has added a coastal 100-year flood zone that includes wave action hazards that affects a portion of the Harbor Area (Figure #). ~~FEMA did not map flood areas for Trinidad because its steep slopes render the risk of flooding is generally nonexistent. FEMA and the City of Trinidad have an agreement that flood insurance is unnecessary in this area, and thus Trinidad and its surrounding State beaches are not included on the National Flood~~

~~Insurance Maps.~~ Though no flood zones are mapped in Westhaven, some areas may have potential for flooding, but it would probably be more related to a storm drainage issue. ~~For further information, flood zones can be viewed on County of Humboldt's web GIS portal (gis.co.humboldt.ca.us/).~~

Fire Hazards

Trinidad is susceptible to wildfires, urban fires, and wildland-urban interface fires where the two areas meet. The California Department of Forestry and Fire Protection (http://www.fire.ca.gov/fire_prevention/fhsz_maps/fhsz_maps_humboldt.php) has mapped areas of significant fire hazards, ranging from moderate to very high, and based on fuels, terrain, weather and other relevant factors. The eastern portion of the City of Trinidad—mostly along Westhaven Dr.—and the eastern rim of the Trinidad Planning Area boundary have a high fire rating. A vast majority of the rest of the Planning Area has a moderate fire rating (Fig. 18). An alternate fire rating map exists in the Humboldt County Master Fire Protection Plan, August 2006, which is being used as the basis for the Humboldt County General Plan, and those zones are also mapped in Figure 18.

The City of Trinidad is built out and natural conditions exist primarily on the edges and bluffs. Westhaven has extensive tree, brush and grass cover and this vegetation coverage—combined the influence of wind and steep slopes—contribute to the fire hazard probability, but the relative humidity of the area is a lessening factor. The majority of Open Space zones within the City limits are not mapped at all on CAL FIRE's fire hazard map, but a small section of the Open Space zone and the entirety of the Special Environment zone are mapped with a high fire risk on the County's fire plan maps.

The Pacific Ocean to the west and the street grid in Trinidad act as a fire break within City limits. Highway 101, Scenic Road, and Westhaven Road are the major roads that contribute to fuel breaks within the Planning Area. The major fire breaks tend to run north to south, but smaller, secondary roads and streets run west-east and have the ability to break fire paths.

For the 9.9 square miles of the Trinidad Planning Area, there are two volunteer fire departments—one in Trinidad proper and the other in Westhaven. CalFire is also stationed on Patrick Point Drive and they respond to emergencies like wildland and structure fires, floods, earthquakes, hazardous material spills, and medical aids. Mutual aid agreements exist between all of the stations, continuing the agreement from the 1980s generated from a fire in Trinidad State Park that threatened residences along Underwood Drive.

Structural Fires demand immediate response from a combination of onsite and Fire Department resources in order to minimize injury and damage. Fire suppression devices such as extinguishers and sprinklers are important for initial response, reduce fire insurance premiums, and satisfy operations requirements for certain types of businesses. These devices are encouraged in new and renovated non-residential

buildings and in all residential structures with more than four units, even when not required by fire and building code. Buildings near forested areas should consider using materials such as non-flammable perimeter vegetation and roofing material to prevent exposure to wild land fires. The City and Trinidad Volunteer Fire Department should continue to take an active role in reviewing new development for compliance with fire safety standards.

The City will continue to incorporate requirements to ensure that driveways, turn-arounds and other access ways have sufficient state-standard width, vertical clearance, and turn-around space for fire-fighting vehicles (osfm.**fire**.**ca**.gov/). Roadways should have an all-weather surface. Road grades should not exceed the Fire Department's maximum slope standards for emergency access. The City should maintain fire hydrant space so that no residential structure is more than 500 feet from a hydrant and no commercial structure is more than 300 feet from a hydrant. Each hydrant should have adequate fittings and be capable of providing adequate water flows to meet Fire Department standards. All buildings should have adequate lighting, street numbering, and access to ensure rapid response.

The City's water supply is provided via Luffenholtz Creek and stored in two 150,000 gallon redwood tanks as part of the filtration process. Based on the *Evaluation of Luffenholtz Creek Diversion Capacity – Trinidad Water System & Proposed Moss Minor Subdivision Project* by LACO Associates in 2009, the available creek flows in Luffenholtz Creek exceed the average and maximum day demands of the Trinidad water system. The evaluation also reported that the City also uses less than 75% of the water available during dry weather flows, implying that there is an adequate supply or storage of water for fire suppression needs. Turbidity is an issue, however. Trinidad's water treatment plant cannot process raw water during periods of elevated turbidity. Prolonged elevated turbidity can impact the City's water supply and water reserves for emergency fire suppression (*Trinidad-Westhaven Integrated Coastal Watershed Management Plan (ICWMP),* City of Trinidad*,* May 2008). The City is currently working on developing plans and obtaining funding to improve the existing water system to address the concerns noted above, particularly because turbidity standards have increased. Future water supply needs are already assessed for development in the City, especially because it is built out, but proposed subdivision projects in the Planning Area require a water supply assessment.

Westhaven has its own water supply. The Westhaven Community Service District (WCSD) is the second largest water supplier in the Trinidad Planning Area and obtains its water from local springs and a groundwater well (City of Trinidad, *Trinidad-Westhaven Integrated Coastal Watershed Management Plan (ICWMP)* (May 2008))Water is stored in a 100,000 potable water storage tank used to supply the entire water system. The Westhaven Fire Department draws water from that supply and thus far, the water supply has been more than adequate for fire suppression needs to date.

Hazardous Materials

State of California legislation AB294B (Tanner) and Government Code Section 41500 et seq. requires that cities adhere to countywide hazardous waste management plans and apply local implementation of applicable actions of the County plan in the General Plan.

There are several sources of hazardous materials that can affect Trinidad. Fuel oil spills are a constant threat from towing, parking and operation of fleet vehicles, visitor/ resident/patron parking and delivery vehicles. Business and household hazardous waste has a tendency to accumulate in and around residential areas in the form of cleaners, solvents, lubricants, paints, and adhesives. Machinery/appliance leaks from businesses or construction sites can potentially be uncontained. If these materials are not properly disposed of or recycled they present a serious threat to the health and well-being of the residents and the environment.

The State Water Resources Control Board (State Water Board), under its Resolution No. 74-28, designated certain Areas of Special Biological Significance (ASBS) in the adoption of water quality control plans for the control of wastes discharged to ocean waters. Areas to the north and south of Trinidad Head were designated as ASBS because of the fluctuating presence of bull kelp beds, *Nereocystis luetkeana*. Since 1983, the California Ocean Plan has prohibited the discharge of both point and nonpoint source waste to ASBS. The Trinidad Pier was constructed in 1946 and its Douglas-fir piles were treated with creosote and the decking was pressure treated. Creosote is composed of a mixture of chemicals that are potentially toxic to fish, other marine organisms and humans. Since construction, the pier has deteriorated, leaching chemicals into the water. However, the pier location is not listed on the current Hazardous Waste and Substance Site List at the Department of Health and Human Service, Agency for Toxic Substances & Disease Registry, or by the California Department of Toxic and Substance Control, Hazardous Waste and Substance Site List. The pier is also currently being rebuilt (2012) and will combat chemical leeching by being constructed of cast-in-steel-shell (CISS) concrete piles and pre-cast concrete decking, respectively.

Air Quality

Emissions of pollutants from motor vehicles, industrial uses, and other sources can be injurious to people's health. Policies and programs to protect the City's air quality are included in the Circulation element.

2. Disaster Preparedness

California State Law requires that all cities and counties adopt a Comprehensive Emergency Plan. The purpose of this plan is to outline policies and procedures with respect to significant events occurring within or threatening the community which would require the deployment of extraordinary resources for the protection of life and property.

The City has an adopted *City Emergency Plan.* The purpose of this plan is to ensure that the City will be prepared to respond effectively in the event of emergencies to save lives, restore and protect property, repair and restore essential public services, and

provide for the storage and distribution of medical, food, water, shelter sites, and other vital supplies to maintain the continuity of government.

State Highway 101 to the north and south, Westhaven Drive to the east and south, and Patrick's Point Drive to the north are considered evacuation routes from the planning area in the event of a major disaster. Due to the slippage potential on Scenic Drive, this road is considered only as a last resort. Stagecoach Road is not recommended for designation due to its narrow width. Trinity Street, Edwards Street, and Main Street are essential to through-City evacuation. These routes should be kept passable in major emergencies recognizing that the type and location of the disaster will determine which routes will be most needed and available for use. There are no evacuation route signs, but in the event of an emergency, Trinidad's small size makes for an obvious flow of traffic out of town.

Trinidad's street pattern is adequate for emergency vehicle access. Most streets and alleys can accommodate large emergency vehicles and have done so to date. Streets such as Pacific and Azalea are being updated in 2012 to accommodate emergency vehicles.

Since serious flooding to the north (Big Lagoon, Klamath River) and south (Little and Mad Rivers) of the planning area can effectively cut off vehicle access, large vacant lands should be designated for points of refuge or as emergency helicopter landing areas. Further, the City should coordinate its disaster preparedness planning with surrounding jurisdictions for mutual assistance.

Training in the Standardized Emergency Management System (SEMS) implementation, is necessary to receive reimbursement from the State of California for disaster response related costs. This training includes instruction about the Incident Command System (ICS), which is used to manage emergency incidents or non-emergency events.
The applications for the incident command system (ICS) include:

- Fires, hazardous materials (HAZMAT), and multi-casualty incidents.
- Multi-jurisdiction and multi-agency disasters.
- Wide area search and rescue missions.
- Pest eradification programs.
- Oil spill response and recovery incidents.
- Single and multi-agency law enforcement actions.
- Air, rail, water, and ground transportation accidents.
- Planned events (celebrities, parades, concerts).
- Private sector emergency management programs.
- State or local major natural hazards management.

Adequate shelter and continued operation of essential services, including communications, medical treatment, water delivery, fire and police services, and key transportation facilities are vital for responding to emergencies. These facilities and services need to be located and designed to withstand disaster impacts and have backup systems, such as emergency generators and water storage (including private

and open water sources), that allow for their continuous operation during emergencies. These critical facilities should not be located in areas with high physical hazards. Critical facilities should be designed to be functional at peak capacity, following a magnitude 7.7 earthquake.

The Humboldt County Sherriff's Office is contracted with the City of Trinidad for police response. A possible constraint to police response may lie in adequate staffing to meet the response needs of both the existing and future population. Police response can be and is assessed at contract renewal dates.

Tsunami signs have been approved by the City for installation. Other safety hazards in the home and unpreparedness for an earthquake or other disasters can all be reduced by providing information to the general public. Hazard reduction information is particularly effective when presented in the schools. Public safety officials should continue to work with school administrators to ensure that this important information is reaching students and that frequent fire drills are conducted to illustrate appropriate disaster response at school.

3. Safety Element Policies

Hazards & Safety Policies

GOAL SAF-1: ~~Reduce and m~~Minimize impacts of development on bluff tops and shoreline features and other areas that can contribute to hazardous conditions.

SAF-1.1 New development shall: (a) ~~M~~minimize risks to life and property in areas of high geologic, flood, and fire hazard; and (b) ~~A~~assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

SAF-1.2: All ocean-front and bluff top development shall be sized, sited and designed to minimize risk from wave run-up, flooding, and beach and bluff erosion hazards as influenced by SLR over the anticipated life of the development, and avoid the need for a shoreline protective structure at any time during the life of the development.

SAF-1.3 Limit development on the bluff face and within the bluff retreat setback because of the fragility of this environment and the potential for resultant increase in bluff and beach erosion due to poorly-sited development.

SAF-1.4 Applications for development located in or near an area subject to geologic hazards, including but not limited to, areas of geologic hazard shown on Figure #, shall be required to submit a geologic/soils/geotechnical study that identifies all potential geologic hazards affecting the proposed project site, all necessary mitigation measures and demonstrates that the project site is suitable for the proposed development and that the development will be safe from geologic hazards. Such study

shall be prepared consistent with the requirements of the Zoning Code.~~Require that development in areas with identified slope stability constraints to be subject to supervision and certified by a geologist, geotechnical engineer, or engineering geologist to eliminate or minimize hazards.~~

Program SAF-1.4.1 Hazards shall be evaluated using the best available science. If the initial evaluation determines that the proposed development may be subject to coastal hazards over its anticipated duration, a site-specific coastal hazard report should be required to ensure that such development can be built in a manner consistent with applicable LCP coastal hazard policies.

SAF-1.5 All development located on a blufftop shall be setback from the bluff edge a sufficient distance, accounting for bluff retreat over time as exacerbated by projected SLR, to ensure that it will be stable for the anticipated life of the project without the need for a shoreline protective device. Stability shall be defined as maintaining a minimum factor of safety against sliding of 1.5 (static) or 1.1 (pseudostatic). The total setback shall include both the anticipated bluff retreat over the anticipated life of the project and any additional setback necessary to ensure the minimum factor of safety. This requirement shall apply to the principal structure and accessory or ancillary structures. Slope stability analyses and erosion rate estimates shall be performed by a qualified Certified Engineering Geologist (CEG), Registered Civil Engineers (RCE), Geotechnical Engineer (GE) or a group of the aforementioned specialists approved by the City, with expertise appropriate to the site and anticipated hazard conditions.

SAF-1.6 Siting and design of new development shall take into account anticipated future changes in sea level based on the best available, up-to-date scientific information at the time of analysis. In particular, an acceleration of the historic rate of sea level rise shall be considered. Development shall be set back a sufficient distance landward and elevated to a sufficient foundation height to avoid, or, if avoidance is not feasible, minimize to the maximum extent feasible, hazards associated with anticipated sea level rise over the anticipated life of the project, taking into consideration the 100-year storm event and storm surge.

SAF-1.7~~5~~ Land divisions, including subdivisions, lot splits, lot line adjustments, and conditional certificates of compliance which create new shoreline or bluff top lots, shall not be permitted unless the subdivision can be shown to create lots which can be developed without requiring a current or future bluff or shoreline protection structure. No new lots shall be created that could require shoreline protection or bluff stabilization structures at any time.

SAF-1.8~~6~~ Minimize, to the maximum feasible extent, alterations to cliffs, bluff tops, faces or bases, and other natural land forms in the Coastal Zone. Permit alteration in landforms only if erosion/runoff is controlled and either there exists no other feasible environmentally superior alternative or such alterations re-establish natural landforms and drainage patterns that have been eliminated by previous development activities.

SAF-1.9 New development on ocean fronting parcels shall only be approved with conditions requiring that no shoreline protective structure be allowed to be constructed in the future to protect the development from bluff erosion. Prior to the issuance of a coastal development permit for the development, a deed restriction acceptable to the Planning Director shall be recorded memorializing the prohibition on future shoreline protective structures.

SAF-1.10~~7~~ Coastal bluff management considerations address vegetation management, scenic vistas, trail maintenance, and unauthorized activities such as 'piped discharges' of stormwater runoff, disposal of grass and yard wastes over the bank, carving into bluff faces and trespassing on sensitive areas. Public education, combined with ordinance provisions, is the best method for addressing these concerns.

SAF-1.11 Prohibit development on the bluff face and within the bluff retreat setback because of the fragility of this environment and the potential for resultant increase in bluff and beach erosion due to poorly-sited development except that the following uses may be allowed with a conditional use permit: (1) engineered accessways or staircases to beaches, boardwalks, viewing platforms, and trail alignments for public access purposes; (2) pipelines to serve coastal dependent industry; (3) habitat restoration; (4) hazardous materials remediation; and (5) landform alterations where such alterations re-establish natural landforms and drainage patterns that have been eliminated by previous development activities. Findings shall be made that no feasible, less environmentally damaging, alternative is available and that feasible mitigation measures have been provided to minimize all adverse environmental impacts. Require as a part of the conditional use permit, a full environmental, geological, and engineering study as specified in Policy LC-6.1. Such structures shall be constructed and designed so as to neither create nor contribute to erosion of the bluff face and to be visually compatible with the surrounding area to the maximum extent feasible.

SAF-1.12 Prohibit construction of seawalls, breakwaters, revetments, groins, harbor channels, retaining walls, and other structures altering the natural shoreline processes unless a finding is made that such structures are required: (1) to serve coastal-dependent uses; or (2) to protect public beaches or other public coastal access in danger from erosion; or (3) to protect existing structures that were legally constructed prior to the effective date of the Coastal Act; or (4) that were legally permitted prior to the effective date of this Coastal General Plan provided that the CDP did not contain a waiver of the right to a future shoreline or bluff protection structure; or (5) if such structure can be found to be consistent with all of the policies within the certified LCP. In addition, such structures shall be permitted only: (1) when it can be demonstrated that said existing structures are at risk from identified hazards; and (2) no feasible or less environmentally damaging alternative is available; and (3) the structure has been designed to eliminate or mitigate adverse environmental impacts, including impacts upon local shoreline sand supply.

> *Program SAF-1.12.1* The design and construction of allowed protective structures shall respect natural landforms and provide for lateral beach access.

Program SAF-1.12.2 "Existing structures" for purposes of Policy SAF-1.12 shall consist only of a principle structure, e.g. residential dwelling, required garage, or second residential unit, and shall not include accessory or ancillary structures such as decks, patios, stairs, landscaping, etc.

~~*SAF-1.8* City and County Zoning Ordinances should require a use permit for timber harvesting (as defined in the Forest Practices Act) within or nearby unstable lands or lands of questionable stability.~~

Goal SAF-2: Reduce the risk of loss of life, personal injury, and damage to property resulting from seismic and geologic hazards.

SAF-2.1 Reduce the risk of loss of life, personal injury, and damage to property resulting from seismic hazards.~~The City shall utilize its Alquist-Priolo (Fault Rupture) Study Zone to identify parcels that must comply with the provisions of the State Alquist-Priolo Act and comply with conditions of project approval to mitigate for potential seismic hazards for structures.~~

Program SAF-2.1.1 Continue to comply with the provisions of the State Alquist-Priolo Act.

Program SAF-2.1.2 Require measures to mitigate potential seismic hazards for structures as conditions of project approval.

Program SAF-2.1.3 Monitor and review existing critical, high priority buildings to ensure structural compliance with seismic safety standards.

Program SAF-2.1.4 Provide information to the public ~~on protection or damage reduction from earthquakes~~ on ways to reinforce buildings to reduce damage from earthquakes and what to do in the event of an earthquake.

Program SF-2.1.5 Provide information to educate the public about the availability and the benefits of obtaining earthquake insurance and encourage residents to consider earthquake insurance for their homes and businesses

Program SF-2.1.6 Continue to comply with State law regarding reinforcement of unreinforced masonry structures.

~~*SAF-2.2* Continue to comply with State law regarding reinforcing unreinforced masonry structures.~~

SAF-2.2~~3~~ Require professional inspections of foundations and excavations, earthwork, and other geotechnical aspects of site development during construction on those sites specified in soils, geologic, and geotechnical studies as being prone to moderate or high levels of seismic hazard.

~~*Program SAF-2.2.1* Require monitoring, repair, stabilization, or avoidance of active or potentially active landslides, areas of soil creep, or areas with possible debris flow as a condition of project approval.~~

~~*SAF-2.4* Structures, septic tank systems, access roads, and driveways shall not be located on unstable lands, as defined by the Soils Limitations Map (Fig. 9). Structures, septic tank systems and driveways should only be permitted on lands of questionable stability (or when outside the City within 100 feet upslope of unstable lands or lands of questionable stability) if analysis by a registered geologist, or civil engineer with soils expertise indicates that the proposed development will not significantly increase erosion, slope instability or sewage system failure.~~

~~*SAF-2.5* Volunteer Fire Department personnel, the California Department of Forestry, and the City and County Building Inspectors should warn property owners to inspect flues and chimneys for damage after moderate and large earthquakes prior to their use. Occupied structures that appear to have been seriously damaged should be inspected and evacuation required if they are found unsafe and until such time that the problem has been remedied.~~

~~*SAF-2.6* Minimize development in areas subject to tsunami.~~

~~*SAF-2.7* Except for existing harbor and public access facilities and shoreline protection structures, no new permanent structures shall be located less than 20 feet above Mean Lower Low Water.~~ [TP4]

SAF-2.3 Require that development in areas with identified slope stability constraints as shown on Map SF-1 or other areas where City staff determines there is potential slope stability issues be supervised and certified by a geologist, geotechnical engineer, or engineering geologist.

SAF-2.8 Review development proposals to ensure that new development is not in an area subject to tsunami damage ~~and~~or, if such development is otherwise allowable, that it is designed to withstand tsunami damage, not exacerbate tsunami damage, and include safety features appropriate to the size, use and occupancy of the building.

~~*Program SAF-2.8.1* Identify and map potential tsunami inundation zones for land use planning.~~ [TP5]

Other Initiatives for Geologic and seismic safety

- ~~*Program SAF-2.8.2*~~ Periodically ~~R~~review and update tsunami preparation response policies/practices to reflect current inundation maps and design standards~~, and submit these updated policies to the Coastal Commission for certification~~.

- ~~*Program SAF-2.8.3*~~ Allow the necessary testing to ensure the tsunami siren and other public hazard warning technology is properly functioning.

- ~~*Program SAF-2.8.4*~~ Develop a local response plan and/or participate in any regional effort to develop and implement workable response plans for distribution of information on tsunami alerts, watches, and warnings, to appropriate emergency responders and City personnel.

- ~~*Program SAF-2.8.5*~~ Develop and implement a tsunami educational program for residents, visitors, and people who work in the susceptible areas.

Goal SF-3 Reduce the risks from flooding.

SAF-3.1 Ensure adequate standards for development in the 100-year floodplain.

Program SAF-3.1.1 Maintain and update as necessary the zoning and building code standards and restrictions for development in identified floodplains and areas subject to inundation by a 100-year flood.

Program SAF-3.1.2 Ensure all development in flood prone areas meet Federal, State, and local requirements.

SAF-3.2 Continue to maintain effective storm water ~~flood~~ drainage systems and regulate construction to minimize flood hazards.

Program SF-3.2.1 Create a Storm Drain Master Plan.

SAF-3.3 ~~Require, as determined by City staff, a~~Analyz~~esis of~~ the cumulative effects of new development upon runoff, discharge into natural watercourses, and increased volumes and velocities in watercourses and their impacts on downstream properties. Include clear and comprehensive mitigation measures as part of project approvals to ensure that new development does not cause downstream flooding of other properties.

Program SAF-3.3.1 Require development to pay for the costs of drainage facilities needed to drain project-generated runoff. Develop a City-wide drainage policy to assist staff to identify drainage improvements or impact fees required for development.

Program SAF-3.3.2 Require, where necessary, the construction of low impact development features to be incorporated into the design of development projects.

Goal SAF-5 Reduce fire hazards.

SAF-4.1 To ensure urban fire safety, the City shall enforce the Uniform Building and Uniform Fire Codes (UBC & UFC) currently in effect.

SAF-4.2 Upgrades to the City's water supply system shall consider needs from future abatement purposes. Other sources of water, including open-water areas, should be identified for fire-fighting personnel. Fire hydrant spacing and other safety features shall be considered in review of new development projects.

SAF-4.3 Review all development proposals for fire risk and require mitigation measures to reduce the probability of fire.

SAF-4.4 Continue to implement an effective and environmentally-sound vegetation management and weed abatement program.

Goal SAF-5 Protect life and property from adverse effects of the transportation, storage, treatment, and disposal of hazardous materials.

SAF-5.1 Manage activities within the City that transport, use, store, or dispose of hazardous materials in a responsible manner which protects public health and safety.

SAF-5.2 Promote the availability of safe and legal options for the management of hazardous wastes generated by businesses, households and construction sites within the City.

SAF-5.3 Promote community education and understanding of sound management practices for the storage, handling, use, and disposal of hazardous household materials.

SAF-5.4 Enforce the requirement that industrial facilities and construction sites have adequate Hazardous Materials Handling and Spill Response Plans to ensure that the goals of pollutant control are consistent with the City's public safety needs and the General Plan's water quality objectives.

Emergency Preparedness & Services Policies

Goal SAF-6 Ensure emergency preparedness.

SAF-6.1 Maintain an updated Emergency Plan.

SAF-6.2 New and renovated structures, as well as streets, driveways, and alleyways, shall be designed to provide adequate entry and exit by emergency vehicles and personnel. This includes visible street numbering, emergency vehicle turn-arounds, accessible building entry points and stairways, lighting, and interior evacuation routes.

> *Program SAF-6.2.1*: Establish an emergency evacuation route system that assesses and indicates street identification, street widths, and grade standards for the evacuation route system for all hazards.

SAF-6.3 Work with Green Diamond Resource Company, or the current owner of the timberland to the east of the City, to provide access to residents to logging roads as an alternative route to Hwy 101 in the case of an emergency that compromises Hwy 101. (CIRC-1.9)

Goal SAF-7 Maintain effective police services.

SAF-7.1 Consider the impacts on the level of police services of large development proposals in the environmental review and planning process. (City planning suggestion)

SAF-7.2 Utilize shared resources to provide/improve police response. (ft bragg)

Program SAF-7.2.1: Periodically review police needs in the City.

Goal SF-8 Maintain an effective medical emergency response system.

SAF-8.1 Ensure that residents are provided the shortest response time available for emergency medical response.

Program SAF-8.1.1 Periodically review the emergency medical response system.

SAF-8.2 The City shall maintain a mutual aid agreement with CalFire to ensure rapid response to wildland fires within the Trinidad Planning Area.

6. Model Policy Language

All local governments working on addressing climate change impacts in their coastal zone should analyze the possible effects of sea level rise and evaluate how sea level rise planning strategies could be implemented through their LCPs to protect public access and coastal resources and minimize hazards consistent with the Coastal Act. Prior sections of this policy Guidance present background, legal considerations and adaptation planning information to guide use of the model policies presented in Section 6. This Guidance is advisory and not a regulatory document or legal standard of review for the actions that the Commission or local governments may take under the Coastal Act. Rather, it is meant to provide direction on how to address sea level rise in LCPs in a manner that is consistent with the Coastal Act, and to provide detailed policy language that local governments have requested from the Commission. Model policies are provided as a tool to assist local governments in developing their own LCP policies. Utilizing the model policies, where relevant, can help ensure Coastal Act consistency, but jurisdictions remain free to modify the policies or develop different policies, so long as they are consistent with the Coastal Act.

A. UNDERSTANDING SEA LEVEL RISE HAZARDS

Note: The Coastal Act requires new development to minimize hazards and protect coastal resources while using sound science to guide decision-making and supporting public understanding and participation in coastal planning. Policies to define best available science, anticipated duration of development types, coastal hazard zones, and technical studies required in given contexts all provide ways to inform risk assessments, inform property owners and the public, and plan for the future effects of sea level rise and coastal hazards, consistent with the Coastal Act. Assumption of risk policies and real estate disclosures provide important mechanisms for educating property owners about hazards and their options for addressing them in the future.

Best Available Science

A.1 Identifying and Using Best Available Science

The best available, up-to-date scientific information about coastal hazards and sea level rise shall be used in vulnerability assessments, the evaluation of coastal development permit applications that present hazard risks, and the preparation of technical reports and related findings. Analyses shall include multiple sea level rise scenarios, one of which is a worst-case "high" projection for the planning horizon or expected duration of the proposed development ***[insert the minimum anticipated duration of development, e.g., (minimum 75 or 100 years unless otherwise specified)]***, based on best available scientific estimates of expected sea level rise at the time of the analysis. Sources of information may include, but shall not be limited to, state and federal agencies, research and academic institutions, and non-governmental organizations, such as the California Coastal Commission (CCC), Ocean Protection Council (OPC), National Oceanic and Atmospheric Administration (NOAA), the National Research Council, and the Intergovernmental Panel on Climate Change.

As of [***insert date***], the best available science is [***insert reference***]. However, best available science shall be updated, in keeping with regional policy efforts, as new, peer-reviewed studies on sea level rise become available and as agencies such as the OPC or the CCC issue updates to their guidance. Vulnerability assessments and related mapping shall be updated at least every ten years, or as necessary to address significant changes in sea level rise estimates.

A.2 Identifying Planning Horizons

The appropriate time horizon to use to evaluate sea level rise depends on the anticipated duration of development, after which such development is expected to be removed, replaced or redeveloped. For example, if a new structure has an anticipated duration of 75 years, then the hazards analysis will evaluate the site over 75 years, including evaluating the range of projected sea level rise over that time period. Using that evaluation, the structure would be set back or designed to avoid hazards over the planning horizon, if feasible. If avoidance is infeasible, it would be set back or designed to minimize flooding and geologic risk and assure structural stability over the planning horizon, and conditioned to disallow future armoring and require removal or other adaptation measures if the development becomes threatened. However, in areas subject to future hazards, the life of any particular development will be limited by site conditions and may be less than the duration anticipated at the time of construction. The anticipated life of development in the coastal zone is not an entitlement to maintain development in hazardous areas, but should be used for sea level rise planning purposes, and is generally defined by the following timeframes, unless a site or project specific analysis determines otherwise: [81]

a. Ancillary development or amenity structures (e.g. trails, bike racks, playgrounds, parking lots, shoreline restrooms): 5-25 years
b. Manufactured or mobile homes: 30-55 years[82]
c. Residential or commercial structures: 75-100 years
d. Critical infrastructure: 100-150 years

A.3 Mapping Coastal Hazards

Note: Creating hazard maps and keeping them up to date plays a critical role in implementing the Coastal Act and is also consistent with local governments' general plan obligations (Govt. Code § 65302(g)(4)). Local governments should, when possible, create hazard zone maps using Geographic Information System and make these digital data layers available to the public and property owners. In this way, community residents, visitors, investors, natural hazard disclosure companies, realtors, and insurers can be made aware of the risks and prepare for future hazards.

Adopting and maintaining up-to-date LCP coastal hazard maps may also streamline consideration of CDP applications because such maps could be used in lieu of site-specific coastal hazard reports in certain circumstances. Although such maps may provide less detailed or precise information than a site-specific report, local governments may be able to rely on them to ensure consistency with LCP hazard policies if they condition the CDP to address uncertainties related to hazards, such as by requiring that property owners accept the risk of developing in a hazardous location (A.6–Assumption of Risk) and agree to remove development subject to appropriate future triggers (D.1–Removal Conditions). However, site specific factors might also preclude the use of regional maps in some cases, so LCPs should clearly articulate the purpose of the maps and constraints on using them.

[81] Defined by common practice by CCC, local governments and developers.
[82] From U.S. Department of Housing and Urban Development (HUD),https://www.huduser.gov/portal/publications/durability_by_design.pdf

The [***insert name of City or County***] shall map areas subject to existing and future coastal hazards, including hazards that will be exacerbated by sea level rise, that present risks to life and property. These areas require additional review and regulation to minimize risks and protect coastal resources.

a. Coastal Hazard maps shall be developed that show areas of the [***City or County]*** that are subject to current or future coastal hazards, using multiple sea level rise scenarios to identify appropriate design standards and evaluate long term planning opportunities. The maximum anticipated extent of potential coastal hazards based on a worst-case "high" projection of sea level rise using best available science shall be considered. Coastal hazard areas include, but are not limited to the following:

- Coastal bluff erosion areas
- Beach erosion hazards areas
- Storm flood extent areas (estuarine or riverine related)
- Wave run up: Areas subject to direct wave attack and damage from wave runup
- Tidal inundation: Areas where routine inundation from tides occurs now and where inundation is likely to occur in the future with sea level rise
- Groundwater Inundation[83]: Current and future areas subject to hazards caused by elevated groundwater and/or reduced or inadequate drainage

b. Development proposed in potential hazard areas, including those mapped as hazardous [***insert reference to Coastal Hazard maps referenced above***, ***e.g. in Figure X***], shall be evaluated for potential coastal hazards at the site, based on all readily available information and the best available science. If the initial evaluation determines that the proposed development may be subject to coastal hazards over its anticipated duration, a site-specific Coastal Hazard Report is required, the purpose of which is to ensure that such development can be built in a manner consistent with applicable Local Coastal Program coastal hazards policies (see Policies A.4 – Site-specific Coastal Hazard Report Required, and A.5 – Coastal Hazard Report Contents).

c. The [***City or County]*** shall put property owners on notice if their parcels are subject to current or future coastal hazards on the Coastal Hazard maps.

d. Coastal Hazard maps shall be updated periodically as new science and modeling results and/or state guidance become available. This update shall occur every 10 years at minimum, or more frequently as necessary, through an LCP amendment.

[83] Where seawater and overlying groundwater responds to tidal forcing, sea level rise will cause the groundwater table to rise, and in low-lying areas the water table could approach and ultimately rise above the ground surface. Even where the water table does not rise above the land surface, groundwater at shallow depths could present significant challenges to the maintenance of development (Hoover et al., 2017).

Site-specific Coastal Hazard Studies

Note: Site-specific studies for coastal development permits are necessary unless hazards are identified on up-to-date LCP hazard maps at a level of detail adequate to ensure LCP policies and development standards can be complied with in the permitting process, including through use of permit conditions to address any uncertainties related to hazards (as described in the note, above). These site-specific hazard study policies (A.4 and A.5) are intended to apply to residential development and to be used together in an LCP. Local governments could consider not requiring site-specific hazard studies for temporary events or structures, or for other minor, short-term development where it is clear there will be no hazard risks over the project's life.

A.4 Site-specific Coastal Hazard Report Required

All development in areas potentially subject to coastal hazards shall be evaluated by reports that are prepared by a licensed civil engineer with expertise in coastal engineering and geomorphology or other suitably qualified professional. These reports shall be based on the best available science, shall consider the impacts from the high projection of sea level rise for the anticipated duration of the proposed development, shall demonstrate that the development will avoid or minimize impacts from coastal hazards, and shall evaluate the foreseeable effects that the development will have on coastal resources over time (including in terms of impacts on public access, shoreline dynamics, natural landforms, natural shoreline processes, and public views) as project impacts continue and/or change over time, including in response to sea level rise.

A.5 Coastal Hazard Report Contents

Note: Local governments should customize the policy addressing the scope and analysis required for the Coastal Hazard Report in a manner compatible with building code requirements and other applicable zoning and LCP policies and regulations. Potential sea level rise impacts will include more than what might be reported in a coastal hazard report. Biological or water quality impacts are also important for understanding the impacts of a proposed project and it may be appropriate for other reports to also analyze anticipated impacts from sea level rise. Report requirements identifying potential impacts on coastal resources on or near a site will also be necessary in some cases to inform policies like B.1- Siting to Protect Coastal Resources and Minimize Hazards and E.1- Habitat Buffers.

Coastal Hazard Reports required pursuant to Policy A.4 (Site-specific Coastal Hazard Report Required) shall include analysis of the physical impacts from coastal hazards and sea level rise that might constrain the project site and/or impact the proposed development. Reports should address and demonstrate the site hazards and effects of the proposed development on coastal resources, including discussion, maps, profiles and/or other relevant information that describe the following:

a. Current conditions at the site, including the current:
    - tidal range, referenced to an identified vertical datum, including the current mean high tide line
    - intertidal zone
    - inland extent of flooding and wave run-up associated with extreme tidal conditions and storm events
    - beach erosion rates, both long-term and seasonal variability
    - bluff erosion rates, both long-term and episodic
b. Projected future conditions at the site, accounting for sea level rise over the anticipated duration of the development, including:

- Shoreline, dune, or bluff edge, accounting for long-term erosion and assuming an increase in erosion from sea level rise
- intertidal zone
- inland extent of flooding and wave run-up associated with both storm and non-storm conditions

c. Safety of the proposed structure to withstand current and projected future hazards for its anticipated duration, including:
   - Identification of a safe building envelope on the site that avoids hazards
   - Identification of options to minimize hazards if no safe building envelope exists that would allow avoidance of hazards
   - Analysis of the adequacy of the proposed building/foundation design to ensure stability of the development relative to expected wave run-up, flooding and groundwater inundation (e.g., hydrostatic loads, uplift, or possible corrosion) for the anticipated duration of the development in both storm and non-storm conditions
   - Description of any proposed future sea level rise adaptation measures, such as incremental removal or relocation when threatened by coastal hazards

d. Discussion of the study and assumptions used in the analysis including a description of the calculations used to determine long-term erosion impacts and the elevation and inland extent of current and future flooding and wave runup.

e. For blufftop development, the report shall include a detailed analysis of erosion risks, including the following:
   - To examine risks from erosion, the predicted bluff edge, shoreline position, or dune profile shall be evaluated considering not only historical retreat, but also acceleration of retreat due to continued and accelerated sea level rise and other climatic impacts. Future long-term erosion rates should be based upon the best available information, using resources such as the highest historic retreat rates, sea level rise model flood projections, or shoreline/bluff/dune change models that take rising sea levels into account. Additionally, proposals for blufftop development shall include a quantitative slope stability analysis demonstrating a minimum factor of safety against sliding of 1.5 (static) and 1.1 (pseudostatic, k=0.15 or determined through a quantitative slope stability analysis by a geotechnical engineer), whereby safety and stability must be demonstrated for the predicted position of the bluff and bluff edge following bluff recession over the identified project life, without the need for caissons or other protective devices. The analysis should consider impacts both with and without any existing shoreline protective devices.

f. For development on a beach, dune, low bluff, or other shoreline property subject to coastal flooding, inundation, or erosion, the report shall include a detailed wave uprush and impact report and analysis, including the following:
   - The analysis shall consider current flood hazards as well as flood hazards associated with sea level rise over the anticipated duration of the development. To examine risks and impacts from flooding, including daily tidal inundation, wave impacts, runup, and overtopping, the site should be examined under conditions of a beach subject to long-term erosion and seasonally eroded shoreline combined with a large storm event (1% probability of occurrence). Flood risks should take into account

daily and annual high tide conditions, backwater flooding, water level rise due to El Niño and other atmospheric forcing, groundwater inundation, storm surge, sea level rise appropriate for the time period, and waves associated with a large storm event (such as the 100-year storm or greater). The analysis should consider impacts both with and without any existing shoreline protective devices.

A range of sea level rise scenarios shall be examined to understand the range of potential impacts that may occur throughout the anticipated duration of the development. At a minimum, flood risk from the highest projected sea level rise over the anticipated duration of the development, based on the current best available science, should be examined. Additionally, the analysis should consider the frequency of future flooding impacts (e.g., daily impacts versus flooding from extreme storms only) and describe the extent to which the proposed development would be able to avoid, minimize, and/or withstand impacts from such occurrences of flooding. Studies should describe adaptation strategies that reduce hazard risks and neither create nor add to impacts on existing coastal resources and that could be incorporated into the development.

Assumption of Risk

Note: A key component of an assumption of risk policy to address sea level rise hinges on property owners acknowledging that shoreline protective devices that would be inconsistent with Coastal Act or LCP policies are not allowed in the future to protect new residential development, and accepting the responsibility to remove or relocate structures and restore the site if it becomes unsafe or removal is required pursuant to adaptation planning requirements.

An important consideration for jurisdictions planning for sea level rise is recognizing that the public trust boundary will migrate inland in some locations as sea levels rise. As this occurs, shorefront development might come to be located on public trust property during its lifespan. LCP policies should recognize that development that comes to encroach on public trust land will likely cause new coastal resource and public trust impacts and will no longer be within the local jurisdiction's Coastal Act permitting authority. The development should therefore be conditioned to clarify that it does not allow encroachment onto public trust lands and that any such encroachment must be removed unless the owner of the structure obtains necessary authorization for it to remain from the Coastal Commission and the State Lands Commission or other tidelands trustee agency. In order to permit such structures to remain on public trust land, the Coastal Commission would need to find that they are consistent with Chapter 3 policies of the Coastal Act and with public trust doctrine principles, and the State Lands Commission would need to find that they do not substantially impair public trust resources.

A.6 Assumption of Risk

As a condition of coastal permit approval for new development in an area subject to current or future hazards, applicants shall be required to acknowledge and agree, and private applicants must also record a deed restriction on the property to acknowledge and agree [***modify following list as necessary to address specific case***]: 1) that the development is located in a hazardous area, or an area that may become hazardous in the future; 2) to assume the risks of injury and damage from such hazards in connection with the permitted development; 3) to unconditionally waive any claim of damage or liability against the ***[insert local government name, and Coastal Commission, if permit is appealed]***, its officers, agents, and employees for injury or damage from

such hazards; 4) to indemnify and hold harmless the ***[insert local government name, and Coastal Commission, if permit is appealed]***, its officers, agents, and employees with respect to approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards; 5) that they have no rights under Coastal Act Section 30235 and related LCP policies to shoreline armoring in the future; 6) that sea level rise could render it difficult or impossible to provide services to the site (e.g., maintenance of roadways, utilities, sewage or water systems), thereby constraining allowed uses of the site or rendering it uninhabitable; 7) that the boundary between public land (tidelands) and private land may shift with rising seas, the structure may eventually be located on public trust lands, and the development approval does not permit encroachment onto public trust land; 8) any future encroachment must be removed unless the Coastal Commission determines that the encroachment is legally permissible pursuant to the Coastal Act and authorizes it to remain, and any future encroachment would also be subject to the State Lands Commission's (or other trustee agency's) leasing approval; and 9) that the structure may be required to be removed or relocated and the site restored if it becomes unsafe or if removal is required pursuant to ***[insert LCP policy specifying adaptation planning requirements (i.e., Model Policy B.2 Removal Plan Conditions for New Development in Hazardous Areas)]***.

Real Estate Disclosure

Note: General plan and zoning laws in California allow local governments to require real estate disclosures related to coastal hazards for all applicable properties within their jurisdiction. Pursuant to the Coastal Act, the Commission has previously required disclosure of hazards during future real estate transactions as a condition in CDPs. In addition to requiring this, local governments could choose to require such disclosures when any property is transferred, regardless of whether it is subject to CDP authorization. Detail on how such a policy would be carried out would likely need to be provided in an Implementation Plan or other ordinance. The purpose of this policy is to disclose sea level rise risk so that property owners are aware of the potential hazards and can internalize the costs. Buyers of properties should know if the properties are located in current or anticipated future coastal hazard zones. Setting reasonable expectations about property use can also mitigate potential takings risks.

See note on Model Policy A.3 regarding how a local government might make hazard zone maps in a Geographic Information System accessible to the public and property owners interested in locating where properties might be at risk. The intent of Model Policy A.7, combined with A.3, is to make vulnerability information available for use in real estate disclosures. Disclosure of hazard risks in all real estate transactions should be required only after the local government maps the hazardous areas in a manner that makes it possible to determine particular parcels' hazard risk, and makes that information publicly available so that natural hazard disclosure companies can find it and disclose it during real estate transactions.

A.7 Real Estate Disclosure of Hazards

Real estate disclosures of all coastal hazards that are identified in ***[City or County]*** adopted hazards maps, including hazards associated with anticipated sea level rise, geologic hazards, groundwater inundation, coastal bluff retreat, coastal flooding, or shoreline erosion, shall be required in real estate transactions. Any site-specific analyses related to sea level rise and the

terms and conditions of any applicable coastal development permits must also be disclosed in real estate transactions.

B. AVOID SITING NEW DEVELOPMENT AND/OR PERPETUATING REDEVELOPMENT IN HAZARD AREAS

Note: The Coastal Act requires development to be resilient, minimize risks from hazards, and assure structural stability, while assuring the protection of shoreline recreational resources, ecological values, and other coastal resources. The policies in Section B are meant to be used together to govern new development on vacant parcels as well as redevelopment in areas with existing residential patterns. The intent of these policies is to site and design to protect coastal resources and minimize risks to life and property as required by the Coastal Act, using setbacks, redevelopment, nonconforming structure, and land division restrictions in areas threatened by sea level rise. Given the more complex redevelopment, takings and public trust issues that some communities will face, as well as the uncertainties inherent in predicting future hazards, policies regarding removal plans and reliance on shoreline protection will be important to ensure development is consistent with Coastal Act policies as sea levels rise.

In addition to requiring a case-by-case analysis to determine sufficient setbacks to minimize risks and assure structural stability, jurisdictions should establish minimum bluff or shoreline setback requirements in their LCPs. This can help establish community-wide norms that may allow for more predictability in permitting decisions and also provide visual benefits and a factor of safety by requiring homes to be set back a minimum distance which may be more or less than the minimum required for safety purposes.

B.1 Siting to Protect Coastal Resources and Minimize Hazards

a. Non-specific:

New development shall be sited to avoid hazards, taking into account predicted sea level rise, including groundwater changes, over the anticipated life of the development. If hazards cannot be completely avoided, then development shall be sited and designed to protect coastal resources and minimize risks to life and property to the maximum extent feasible. New development shall assure stability and structural integrity of the development without reliance on shoreline protective devices that substantially alter natural landforms along bluffs and cliffs or otherwise harm coastal resources in a manner inconsistent with LCP policies or Coastal Act public access policies, and not contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area.

b. Shoreline-specific:

Siting and design of new development on or near the shoreline shall take into account coastal hazards and the extent of shoreline migration and groundwater changes that can be anticipated over the expected duration of the development. Anticipated landward migration of the sea shall be determined based upon historical erosion rates, predicted acceleration of erosion and flooding due to continued and accelerated sea level rise, storm damage, and foreseeable changes in sand supply. Development shall be set back a sufficient distance to prevent impacts to coastal resources, minimize the impacts of coastal hazards on the development over its anticipated life, assure stability and structural integrity of the development without reliance on shoreline protective devices that substantially alter natural landforms along bluffs and cliffs or otherwise harm

coastal resources in a manner inconsistent with LCP policies or Coastal Act public access policies, and not contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area. In addition, when permitted, all development shall be subject to removal plan conditions in [***Model Policy B.2 – Removal Plan Conditions for New Development in Hazardous Areas]***.

c. Blufftop-specific:

New development shall be set back a sufficient distance to ensure its structural integrity for the anticipated duration of the development, taking into account sea level rise, erosion, and other geologic hazards, without reliance on shoreline protective devices that substantially alter natural landforms along bluffs and cliffs or otherwise harm coastal resources in a manner inconsistent with LCP policies or Coastal Act public access policies, including any existing shoreline protective devices associated with the site, pursuant to [***Model Policy B.5 – Determining Bluff Setback Line***]. Site-specific coastal hazard studies shall include a quantitative slope stability analysis demonstrating safety and stability for the predicted position of the bluff following bluff recession for the anticipated duration of the development under historical bluff retreat conditions, as well as with acceleration of bluff retreat due to continued and accelerated sea level rise and other climatic impacts (see [***Model Policy B.5 – Determining Bluff Setback Line]***). In addition, when permitted, all development shall be subject to removal plan conditions in [***Model Policy B.2 – Removal Plan Conditions for New Development in Hazardous Areas]***.

d. Dune-specific:

Siting and design of new development adjacent to dunes shall take into account the extent of landward migration of the foredunes that can be anticipated over the anticipated duration of the development. This landward migration shall be determined based upon historic dune erosion, storm damage, anticipated sea level rise, and foreseeable changes in sand supply. Development shall be set back a sufficient distance to prevent impacts to coastal resources, assure structural stability of the development without reliance on shoreline protective devices that harm coastal resources in a manner inconsistent with LCP policies or Coastal Act public access policies, and avoid coastal hazards over the expected duration of the development. ([***See also Model Policy E.4 – Flood Hazard Mitigation]***). When permitted, development shall be subject to removal plan conditions in [***Model Policy B.2 – Removal Plan Conditions for New Development in Hazardous Areas]***.

B.2 Removal Plan Conditions for New Development in Hazardous Areas

For development subject to coastal hazards, require structures to be designed so that they can be removed without significantly damaging the site or surrounding land, and impose a permit condition requiring preparation and execution of a Removal and Restoration Plan at such time as the development meets any of the removal criteria in ***Model Policy D.1 – Removal Conditions/Development Duration***, and indicating that it will be the property owner's responsibility to remove the structure(s) and restore the site at the owner's expense in a way that best protects the public trust and coastal resources. The plan shall specify that in the event that portions of the development fall to the bluffs, beach or ocean before they are removed/relocated, the landowner will remove all recoverable debris associated with the development from the

bluffs, beach or ocean and lawfully dispose of the material in an approved disposal site. The plan shall also specify that such removal requires a coastal development permit.

B.3 Reliance on Shoreline Armoring

All new development, including redevelopment (as defined in ***Model Policy B.7***), shall be sited and designed to ensure that: 1) it will not require shoreline protective devices that substantially alter natural landforms or conflict with other LCP resource protection policies or the public access and recreation policies of the Coastal Act, and 2) it will be structurally safe from erosion, flooding, and wave run-up for the anticipated duration of the development. These criteria apply even if new development, including redevelopment, is protected by a legally authorized shoreline protective device, in which case the new development and redevelopment on the site shall still be designed and sited in a manner that does not require or rely on the use of a shoreline protective device to ensure geologic stability. As a condition of permitting demolition or modification of development already present on site, any existing shoreline armoring structure associated with the development that is causing adverse impacts to coastal or public trust resources and that is under the applicant's control shall be removed if it is no longer necessary to protect remaining principal structures on the property or adjacent principal structures that are still entitled to retain shoreline armoring.

B.4 Bluff Face Development

Structures, grading, and landform alteration on bluff faces are prohibited, except for the following: public access structures where no feasible alternative means of public access exists, and shoreline protective devices if otherwise allowed by the LCP and the public access and recreation policies of the Coastal Act. Such structures shall be designed and constructed to be visually compatible with the surrounding area to the maximum extent feasible and to minimize effects on erosion of the bluff face.

B.5 Determining Bluff Setback Line

The bluff or geologic setback line is the location on the bluff top inland of which stability can be reasonably assured for the anticipated duration of the development without need for shoreline protective devices. The setback line shall account for the amount of erosion anticipated over the life of the development, plus an additional setback to ensure structural stability under future conditions. To determine and document the setback line, applications for bluff property development must include a geotechnical report from a licensed Geotechnical Engineer or a certified Engineering Geologist that establishes the bluff or geologic setback line for the proposed development. The analysis shall include a quantitative slope stability analysis demonstrating a minimum factor of safety against sliding of 1.5 (static) or 1.1 (pseudostatic, k-0.15 or determined through analysis by the geotechnical engineer), using shear strength parameters derived from relatively undeformed samples collected at the site. Future long-term erosion rates shall be based upon the best available information on bluff failure mechanisms, using resources such as the highest historic retreat rates, sea level rise flood projections, shoreline change models that take rising sea levels into account, future increase in storm, El Niño or other climatic events, and any known site-specific conditions. The analysis shall assume that any current shoreline protective device does not exist, such that the site would erode in a manner similar to unarmored sites in the same vicinity with similar geologic attributes.

B.6 Minor Development in Hazardous Areas

Minor and/or ancillary development, including ***[insert relevant development types based on existing pattern of development and consistent with view protection policies, e.g., public trails, benches, gazebos, patios, etc.]***, may be located seaward of the bluff or shoreline setback line, but no closer than [***insert appropriate distance***] inland of the bluff edge, provided that development

does not use a foundation that can serve as a bluff retaining device, such as caissons, or that requires landform alteration, and that the development is removed or relocated when threatened. In the event that portions of the development fall to the bluffs, beach or ocean before they are removed/relocated, the landowner will remove all recoverable debris associated with the development from the bluffs, beach and ocean pursuant to a coastal development permit (unless no coastal development permit is required) and lawfully dispose of the material in an approved disposal site.

Improvements, Alterations and Additions to Existing Structures

Note: New development, including redevelopment, must be regulated to ensure it meets safety and structural stability standards and adequately protects coastal resources under expected future conditions. As required by California Code of Regulations Section 13252(b), at a minimum, improvements and alterations that result in replacement of 50% or more of the existing structure shall be considered a replacement structure and treated as new development/redevelopment. To best protect coastal resources consistent with the Coastal Act, local governments should also define additions that result in an enlargement of more than 50% as redevelopment that requires the whole structure to be brought into conformance with the LCP. They could also use other triggers to ensure that existing structures aren't significantly redeveloped in hazardous areas unless the entire structure is brought into conformity with any relevant Coastal Act and LCP coastal protection standards. For example, in cases where development might not meet the 50% threshold for redevelopment related to replacement of structural members, it could still be considered redevelopment if the cost of alterations exceeds 50% of market value. Again, to ensure Coastal Act consistency, redevelopment should be defined, at a minimum, to include replacement of 50% of a structure. However, local governments should consider going beyond this minimum in order to ensure that current development in hazardous areas is not completely redeveloped, in piecemeal fashion, over time.

Improvements, alterations, and additions can constitute redevelopment regardless of whether they are undertaken all at once or in piecemeal fashion over time. Redevelopment policies should be drafted to ensure that owners may not avoid the need to bring redeveloped structures into compliance with current LCP standards by, for example, replacing 49 percent of structural components one year and then replacing another 40 percent the next year. In calculating cumulative work that counts toward the definition of redevelopment, jurisdictions should consider all work undertaken after the date the Coastal Act went into effect. Local jurisdictions may wish to customize this policy to better conform with their regulations and deal with the challenges inherent in searching old records. As an application requirement, jurisdictions could also require applicants to provide evidence of any prior renovations undertaken after January 1, 1977.

The long-term effectiveness of a redevelopment-based adaptation strategy depends on at least two factors. First, policies should clearly define the threshold of improvements that constitute "redevelopment." If non-exempt improvements or repair and maintenance fall short of the definition of redevelopment, a landowner could maintain the existing structure for its remaining life and make any improvements that meet current LCP and, if applicable, Coastal Act standards. However, the whole structure need not be brought up to current standards so long as the improvements do not increase the structure's non-conformity with hazard or other LCP policies. Second, an adaptation strategy should include downzoning of hazardous areas so that buildings destroyed by disasters are rebuilt in safer locations rather than being allowed to be rebuilt in the same location pursuant to Coastal Act exemptions for rebuilding after a disaster (See Public

Resources Code § 30610(g)). Instituting rebuilding restrictions in advance of damage will give property owners and real estate markets time to adjust before disasters strike.

When non-conforming structures are redeveloped, they should be brought into conformity with all coastal resource protection standards in an LCP. However, local governments may choose to allow the redeveloped structure to remain in non-conformity with non-coastal protection standards contained in an LCP, which might include, for example, parking or front yard setback standards. Doing so would provide more flexibility for allowing reasonable redevelopment in hazardous areas.

B.7 Redevelopment

A development proposal reaches the threshold of being a replacement structure or redevelopment if it meets criteria a or b below. Development meeting this definition must be brought into conformance with all coastal resource protection policies in the LCP.

a. Development that consists of alterations including (1) additions to an existing structure, (2) exterior and/or interior renovations, and/or (3) demolition or replacement of an existing home or other principal structure, or portions thereof, which results in either:

    1. Replacement (including demolition, renovation or alteration) of 50% or more of major structural components including exterior walls, floor, roof structure or foundation, or a 50% increase in gross floor area. Alterations are not additive between individual major structural components; or

    2. Replacement (including demolition, renovation or alteration) of less than 50% of a major structural component where the proposed replacement would result in cumulative alterations exceeding 50% or more of that major structural component, taking into consideration previous replacement work undertaken on or after January 1, 1977; or an alteration that constitutes less than 50% increase in floor area where the proposed alteration would result in a cumulative addition of 50% or greater of the floor area, taking into consideration previous additions undertaken on or after January 1, 1977.

OR

b. Development that consists of any alteration of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction, based on the documented construction bid costs and either an appraisal by a professional property appraiser or County assessor data, if it is based on current market values.

B.8 Nonconforming Structures in Areas Subject to Coastal Hazards

When proposed development would involve redevelopment of an existing structure that is legally non-conforming due to a coastal resource protection standard, the entire structure must be made to conform with all current coastal resource protection standards and policies of the LCP and, if applicable, the Coastal Act. Non-exempt improvements to existing non-conforming structures, regardless if the proposed improvements meet the threshold of redevelopment, shall not be permitted when the improvements increase the degree of non-conformity of the existing structure by, for example, increasing the hazardous condition, developing seaward, or increasing the size of the structure in a non-conforming location.

Land Division

B.9 Restrict Land Division in Hazardous Areas

Limit land divisions, including lot line adjustments, in areas vulnerable to coastal hazards, including hazards exacerbated by sea level rise. Prohibit the creation of new lots (including adjusted lots) in such areas, unless it is demonstrated either that: 1) the new lot(s) would be permanently protected for open space, public access, or other similar purposes consistent with the LCP, or 2) resultant parcels contain a buildable area in which development on new lots would comply with LCP policies protecting coastal resources, would remain located on private property despite the migration of the public trust boundary, not require the future construction or augmentation of a shoreline protective device, be adequately served by public services (e.g., water, sewer, and safe, legal, all-weather access as applicable) over the anticipated duration of the development, and otherwise be consistent with all LCP policies.

Exceptions

Note: Despite the Coastal Act's requirements to minimize hazards and protect coastal resources, local governments must still ensure that actions on coastal development permits do not result in an unconstitutional taking of private property. Many LCPs already contain takings policies to address this need. The model language below notes that background principles of property law like the public trust doctrine or nuisance abatement might change the context of decisions related to sea level rise adaptation actions in the future. This policy helps clarify when a taking might not be a consideration.

Communities might also create adaptation plans on a neighborhood scale (see Model Policy G.3– Adaptation Plan for Highly Vulnerable Areas) to provide strategies for hazardous areas where development must be approved to avoid an unconstitutional taking of private property.

B.10 Takings Analysis

Where full adherence with all LCP policies, including for setbacks and other hazard avoidance measures, would preclude a reasonable economic use of the property as a whole, the **[*city or county, or Commission if on appeal*]** may allow the minimum economic use and/or development of the property necessary to avoid an unconstitutional taking of private property without just compensation. There is no taking that needs to be avoided if the proposed development constitutes a nuisance or is otherwise prohibited pursuant to other background principles of property law (e.g., public trust doctrine). Continued use of an existing structure, including with any permissible repair and maintenance (which may be exempt from permitting requirements), may provide a reasonable economic use. If development is allowed pursuant to this policy, it must be consistent with all LCP policies to the maximum extent feasible.

C. DESIGN FOR THE HAZARD

Note: The Coastal Act requires hazards to be minimized. Accommodation strategies rely on methods that modify existing developments or design new developments to minimize hazard risks and thus increase the resiliency of development to the impacts of sea level rise. Design options for accommodation can be an important part of phasing a community's response to sea level rise impacts, especially when it is not feasible to avoid hazards altogether. The policy below is general, but could be customized to the applicable hazards a community is confronting. Also see Model Policy E.4 for flood hazard mitigation design options.

Adaptive Design

C.1 Adaptive Design

For new development, where relocation and/or structure removal might be necessary at some time in the future, ensure that foundation designs or other aspects of the development will accommodate future relocation and/or structure removal. Such relocation and/or removal shall be demonstrated in final plans, and may be phased over time. Alternative design options should be considered and employed where appropriate and if site conditions allow, such as constructing smaller structures, increasing finished floor elevations, and installing wall flood vents.

C.2 Design Guidelines to Reduce Greenhouse Gas Emissions

Encourage property owners to reduce greenhouse gas emissions by using weatherizing techniques, as well as solar panels, and wind energy, where compatible with community character, coastal views and protection of biological resources.

D. MOVING DEVELOPMENT AWAY FROM HAZARDS

Note: Coastal Act Section 30235 permits shoreline protective devices when necessary to protect existing residential structures in danger of erosion and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Section 30253 requires new and redeveloped residential structures to be located or designed so that they minimize risks from flooding and other future hazards and will assure structural stability without the need for shoreline protection that alters natural landforms. Other Coastal Act policies require protection of sensitive habitat, public access, and other coastal resources. Thus, as sea levels rise and hazardous areas, habitat, and public trust lands migrate inland, the Coastal Act will require new development to be located further inland in situations where other adaptation measures are infeasible, essentially resulting in managed retreat on a parcel scale. On a neighborhood or community scale, there may also be cases where a managed retreat program provides the best way to comply with Coastal Act policies that require minimizing hazards, protecting coastal resources and maximizing public access. The following polices help ensure that new development minimizes hazards, assures structural stability, is located in areas where present and future services are able to accommodate it, protects sensitive habitat and public recreational areas, and does not substantially impair uses of public trust lands, consistent with the Coastal Act. Also see the model policies in Section G for options related to community scale managed retreat.

Managed Retreat

D.1 Removal Conditions/Development Duration

New development on private property located in hazardous areas shall be conditioned to require that it be removed and the affected area restored at the applicant's expense if: (1) any government agency with relevant authority and jurisdiction has ordered that the structures are not to be occupied due to hazards, or be removed; (2) essential services to the site can no longer feasibly be maintained (e.g., utilities, roads); (3) removal is required pursuant to LCP policies for sea level rise adaptation planning; or (4) the development requires new and/or augmented shoreline protective devices that conflict with LCP or relevant Coastal Act policies. In addition, permits shall include a condition stating that the development approval does not permit encroachment onto public trust lands and that any future encroachment must be removed unless the Coastal Commission determines that the encroachment is legally permissible pursuant to the Coastal Act and authorizes it to remain, and any future encroachment would also be subject to the State Lands

Commission's (or other trustee agency's) leasing approval. Such condition shall be recorded on a deed restriction against the subject property.

D.2 Contingency Funds

Require property owners proposing new development in hazardous areas to document that financial contingencies are in place if it becomes necessary to modify, relocate and/or remove development that becomes threatened in the future by sea level rise and/or when removal triggers are met. For significant new development, such as hotels or multi-family housing, financial contingencies must be in the form of a bond, letter of credit, cash deposit, lien agreement or other security deemed adequate by the ***[insert City or County]*** Attorney.

D.3 Mean High Tide Line (MHTL) Survey Conditions

Note: The MHTL is the intersection of the shoreline with the elevation of the average of all high tides calculated over an 18.6-year tidal epoch. A MHTL survey provides a piece of evidence for the MHTL—and thus the property line—at a specific point in time, but it does not indicate a permanent property line. This property line is referred to as "ambulatory" for two reasons: first, gradual changes to the shoreline due to factors such as variations in the height and width of sandy beaches, shoreline erosion or accretion, and uplift or subsidence of land can change the location of where the mean high tide line meets the shoreline. Second, the elevation of the mean high tide line itself changes over time and is likely to increase at an accelerating rate in the future due to sea level rise.

As part of any development application, jurisdictions should ensure that the applicant has appropriate legal title to the land being developed. In locations where sea level rise may cause the public trust boundary to move inland over the life of the development, it is important to ensure that the development remains on private land over time. Imposing a condition requiring at least one initial MHTL survey, and periodic MHTL surveys thereafter, will help provide evidence that the development is located on, and remains on, private property. Such surveys also provide baseline data that can be useful for understanding an area's shoreline dynamics and sea level rise over time, which in turn can inform a jurisdiction's vulnerability assessments and adaptation plans. Jurisdictions may want to modify the model policy to more precisely define the situations in which MHTL surveys are required—e.g., they may not be useful or appropriate in situations where a boundary line has been fixed by law, where development is located on filled tidelands bounded by bulkheads, or where a jurisdiction already has clear evidence of the public trust boundary and there is no risk that the proposed development will encroach on public trust lands during its expected lifetime.

As a part of any application for low-lying development adjacent to coastal waters, the applicant shall submit a Mean High Tide Line (MHTL) survey prepared by a licensed professional land surveyor of the Subject property based on field data collected within 12 months of the date submitted. Such survey shall be at the landowner's expense and shall be conducted in consultation with the California State Lands Commission (CSLC) staff. Prior to submitting this survey to the Commission, it must be approved by the CSLC as compliant with CSLC survey standards. In addition, every ***[5-10]*** years, or in the event of reaching a specified trigger ***[(i.e., new tidal datum epoch, seismic event of magnitude 5.5 or greater, rise in annual local MSL records of [x] above current MSL datum (where [x] might be based upon difference in elevation between lowest portion of the development and the current MSL datum)]***, the landowner shall submit additional MHTL surveys. Such surveys shall:

a. Use either the published Mean High Water elevation from a National Oceanic and Atmospheric Agency published tide station closest to the project or a linear interpolation between two adjacent tide stations, depending on the most appropriate approach in light of tidal regime characteristics.
b. Use the most current tidal epoch.
c. Use local, published control benchmarks to determine elevations at the survey site. Control benchmarks are the monuments on the ground that have been precisely located and referenced to the local tide stations and vertical datum used to calculate the Mean High Tide elevation.
d. Match elevation datum with tide datum.
e. Reference all elevations and contour lines to the North American Vertical Datum 1988 (NAVD88).
f. Note survey date, datum, and MHTL elevation.

E. MOVING HAZARDS AWAY FROM DEVELOPMENT

Note: The model policies below should be considered for relevant shoreline types. Certified LCPs are already required to have policies and standards to ensure that environmentally sensitive habitat area (ESHA), wetlands, and other coastal habitats and resources are protected; however, in light of sea level rise, additional protections might be needed. An additional buffer area can allow for the migration of wetlands and other shoreline habitats caused by sea level rise over the anticipated duration of development, thus avoiding significant disruption or degradation to sensitive habitat, and allowing for the continued existence of the habitat.

E.1 Habitat Buffers

Provide a buffer of at least ***[insert distance of buffer]*** feet in width from the edge of wetlands or other environmentally sensitive habitat areas and at least ***[insert distance of buffer]*** feet in width from the edge of riparian habitat. A sea level rise buffer area shall be added to the habitat buffer if necessary to allow for the migration of wetlands and other shoreline habitats caused by sea level rise over the anticipated duration of the development. Except for temporary uses, as described below, uses and development within sea level rise buffer areas shall be limited to minor passive recreational uses, with fencing, desiltation or erosion control facilities, or other improvements deemed necessary to protect the habitat, to be located in the upper (upland) half of the buffer area. Water quality features such as drainage swales required to support new development shall not be constructed in wetland buffers. Temporary uses may also be placed in the sea level rise buffer area until such time as sea level rise causes the wetlands or other shoreline habitat to migrate to within 100 feet of the temporary uses, at which time, they shall be removed. All habitat and buffers identified shall be permanently conserved or protected through a deed restriction, open space easement or other suitable device. All development, such as grading, buildings and other improvements, adjacent to, or draining directly to an environmentally sensitive habitat area must be sited and designed so it does not significantly degrade habitat values, impair functional capacity, or impair the continuance of the habitat area.

Note: The Coastal Act requires approved shoreline protection to be the least environmentally damaging feasible alternative. Soft shoreline protection is often an alternative that enhances natural coastlines and provide some natural storm protection as well as habitat benefits. Soft protection alternatives are sometimes hybrids of hard and soft approaches. For example, a horizontal levee consists of hardened protection (levee) set back from the coastline with a wide expanse of natural habitat such as coastal marsh between the water and the levee. The intent in this case is to use a setback of a harder structure such as a levee or shoreline protection to allow marshes to provide natural buffering to reduce the impacts of coastal flooding, storm surge and wave action. It is also important to note that the term "soft" shoreline armoring can refer to shoreline restoration projects, or to shoreline armoring that includes a natural component, such as a revetment that is buried beneath sand and vegetated. While the former may be a permissible restoration project in many circumstances, the latter constitutes shoreline armoring that is generally not permitted to protect new development, though may be approved if it is necessary to protect an existing structure or coastal dependent use in danger from erosion, and is the least environmentally damaging feasible alternative, as required by the Coastal Act.

E.2 Soft Shoreline Protection

Encourage the use of soft or natural shoreline protection methods, such as dune restoration, beach/sand nourishment, living shorelines, horizontal levees, and other "green" infrastructure as alternatives to hard shoreline protective devices. Soft shoreline protection devices shall be fully evaluated for coastal resource impacts, and shall only be approved if found consistent with the LCP policies related to shoreline protection. The ***[City or County]*** should consider how these options may need to change over time as sea level rises.

E.3 Avoid Adverse Impacts from Stormwater and Dry Weather Discharges

New development shall provide adequate drainage and erosion control facilities that convey site drainage in a non-erosive manner to minimize hazards resulting from increased runoff and erosion. Runoff shall be directed inland to the storm drain system or to an existing outfall, when feasible. If no storm drain system or existing outfall is present, blufftop runoff shall not be channelized or directed to the beach or the ocean.

E.4 Flood Hazard Mitigation

If it is infeasible for new development to avoid flooding hazards, development should be designed to minimize risks from flooding, including as influenced by sea level rise, over the anticipated life of the development, and otherwise constructed using design techniques that will limit damage caused by floods. Residential design shall incorporate appropriate flood hazard mitigation measures, including: ***[include all applicable, and add any other appropriate measures]*** elevating the finished floor (e.g., above the estimated combined 100-year storm flood elevation considering sea level rise and wave uprush scenario); locating only non-habitable space below the flood hazard elevation; elevating and storing hazardous materials out of the flood hazard area; elevating mechanical and utility installations; prohibiting basements; and using flood vents and anchoring structures where appropriate. However, elevation should be limited to ensure consistency with visual resource protection policies, and to ensure that access to utilities, including water, sewer, and roads, can continue over the anticipated duration of the development. If such access cannot be ensured consistent with LCP policies, then conditions shall be added requiring assumption of risk, removal triggers, and retreat management plan.

F. BUILDING BARRIERS TO PROTECT FROM HAZARDS

Shoreline Armoring

Note: The Coastal Act limits the use of shoreline protective devices and requires coastal resources to be protected when shoreline protection is allowed. In areas between the first public road and the sea, where shoreline protection is located, the standard of review is not only the LCP, but also the public access and recreation policies of the Coastal Act. In addition, many shoreline armoring projects are located partly or wholly on tidelands, within the Commission's retained jurisdiction. In such cases, applicants will need to apply to the Commission for a permit, and Chapter 3 of the Coastal Act will be the standard of review, at least for the portion within the Commission's jurisdiction, or for the whole project if the applicant, local government, and Commission agree to process a consolidated permit for the whole project.

Coastal Act Section 30253 requires new development to minimize risks from hazards, to avoid creating or contributing significantly to erosion and geologic instability, and to not in any way require construction of armoring that substantially alters natural landforms along bluffs and cliffs. Other Coastal Act provisions also limit the circumstances in which shoreline armoring may be permitted. For example, Section 30251 requires that new development minimize the alteration of natural land forms and be visually compatible with the character of surrounding areas, and Section 30210 requires provision of maximum public access to the coast. A common way to comply with these requirements is by establishing bluff-top and shoreline setbacks so that new development will not require armoring that impacts landforms, visual resources or access.

Despite this strict limitation on shoreline armoring for new development, Section 30235 allows armoring that alters natural shoreline processes when it is needed to protect existing structures, coastal dependent uses, or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. However, such protection is only required to be permitted if it is necessary – i.e., if the existing structure is in fact in danger – and if the proposed shoreline protection is the least environmentally-damaging alternative to abate the danger. As described in the Commission's 2015 Sea Level Rise Policy Guidance, the Commission interprets the term "existing structures" in Section 30235 as meaning structures that were in existence on January 1, 1977—the effective date of the Coastal Act. In other words, Section 30235's requirement to permit shoreline armoring in certain circumstances generally only applies to structures that existed as of January 1, 1977.

Managing shoreline armoring has been challenging for many local governments because urban areas are frequently made up of both developed and undeveloped lots. In addition, many structures in existence in 1976 have since been "redeveloped" through renovations, remodeling, additions, and complete demolition and rebuild. The reality of effective shoreline management is that the Coastal Act and LCPs must address and be applied to a wide variety of physical and legal circumstances that may not be addressed by a simple application of the Coastal Act distinction between existing structures, which may be allowed shoreline armoring even if that armoring has impacts that would otherwise be prohibited by LCP or relevant Coastal Act policies, and new development, which is generally not entitled to armoring that is inconsistent with any resource protection policies of the LCP or access policies of the Coastal Act. See further discussion in section entitled 'Adaptation Strategies for Development Constructed after January 1, 1977'.

A suite of shoreline armoring policies can offer guidance for many of the shoreline armoring contexts, laying out the general policies first, then offering details on prioritization, siting and design, mitigation, and expectations for the shoreline armoring in the future. Policies F.1 through F.9 can help achieve Coastal Act consistency in areas where shoreline protection that would alter the natural shoreline may be needed now or in the future. In areas where bulkheads that do not alter the natural shoreline process are involved, Policy F.10 may be appropriate.

F.1 Shoreline and Bluff Protective Devices

Shoreline protective devices, including revetments, breakwaters, groins, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes, shall be permitted when required to serve coastal-dependent uses or protect existing principal structures or public beaches in danger from erosion, when designed to eliminate or mitigate adverse impacts on local shoreline sand supply, and when there is no less environmentally damaging alternative, unless a waiver of rights to shoreline protective devices applies on the property. Any such structures shall be sited to avoid sensitive resources, if feasible, and adverse impacts on all coastal resources shall be mitigated. Existing marine structures causing water stagnation or contributing to pollution problems and fish kills shall be phased out or upgraded where technically feasible. For the purposes of this policy, "existing structure" means a principal structure (e.g., residential dwelling or second residential unit) that was legally permitted prior to the effective date of the Coastal Act (January 1, 1977) and that has not subsequently undergone redevelopment ***([pursuant to Model Policy B.7])***.

F.2 Prioritization of Types of Shoreline Protection

Shoreline protective devices shall only be permitted if no other feasible, less environmentally damaging alternative, including but not limited to relocation of the threatened development, beach nourishment, non-structural drainage and native landscape improvements, or other similar non-structural options, can be feasibly used to address erosion hazards and to minimize risk of flooding and provide structural stability. Such non-structural options shall be identified, used and prioritized wherever feasible to protect coastal resources, including coastal habitats, public recreational uses, and public access to the coast. Where such non-structural options are not feasible in whole or in part, soft protection (e.g., sand bags, revetments that are combined with dune restoration, etc.) shall be used and prioritized wherever feasible before any more significant hard shoreline protective devices (including, but not limited to, seawalls, revetments, breakwaters, groins, bluff retention devices, and caisson foundation systems) are permitted.

F.3 Siting and Design to Avoid and to Mitigate Impacts

New shoreline protective devices shall be sited and designed to eliminate or mitigate adverse impacts on local shoreline sand supply. They shall also be sited and designed to avoid other coastal resource impacts to the maximum extent feasible, including through: eliminating or mitigating all adverse impacts on beach area; protecting and enhancing public recreational access; protecting and enhancing public views; minimizing alteration of, and being visually subordinate to, the natural character of the shoreline; avoiding or mitigating impacts to archeological resources; avoiding encroachment onto public trust lands and interference with the natural migration of the public trust boundary; and protecting other coastal resources in a manner consistent with applicable Coastal Act and LCP policies and the public trust.

Impacts from shoreline protective devices on beach area and local shoreline sand supply generally include: losing sand and beach area through the device's physical encroachment on a beach, fixing of the back beach, preventing new beach formation in areas where the bluff/shoreline would have otherwise naturally eroded, and losing sand-generating bluff/shoreline materials that

would have entered the sand supply system absent the shoreline protective device. If such impacts cannot be avoided, they shall be mitigated through options such as providing equivalent new public access or recreational facilities or undertaking restoration of nearby beach habitat. If such options are not feasible, proportional in-lieu fees that consider the full value of the beach—including with respect to impacts on shoreline sand supply, sandy beaches, public recreational access, public views, natural landforms, beach ecology, and water quality—may be used as a vehicle for impact mitigation provided that such in-lieu fees are deposited in an interest bearing account managed by the ***[insert City or County]*** and used only for acquisition or improvements of coastal public access, biological restoration, or other relevant mitigation in the vicinity of the project. New shoreline protective devices may not be approved if they cannot adequately eliminate or mitigate adverse impacts on local shoreline sand supply.

F.4 Repair and Maintenance of Shoreline Protective Devices

Non-exempt repair and maintenance of existing, legally permitted shoreline protective devices may be permitted as repair and maintenance only if the activities do not result in an enlargement or extension of armoring. Repair and maintenance activities shall not result in a seaward encroachment of the shoreline protective device or substantially impair public trust resources. Repair and maintenance projects shall include measures to address and mitigate all coastal resource impacts that the repair and maintenance activities may cause, including with respect to local sand supply, public views and public recreational access. Replacement of 50 percent or more of the protective device shall not be considered repair and maintenance but instead constitutes a replacement structure subject to provisions applicable to new or replacement shoreline protective devices.

F.5 Evaluation of Existing Shoreline Armoring

Applications for new development or redevelopment on property that is protected by existing shoreline protective devices shall not rely on the existing device for protection (see B.3 - Reliance on Shoreline armoring) and shall be required to provide an assessment of the continued efficacy and necessity of such protective devices. This must include an evaluation of whether the shoreline protective device can feasibly be removed or modified (and affected areas restored to natural conditions) in connection with demolition or modification of the existing structure that the protective device was built to protect. If the assessment indicates that existing shoreline protective devices can feasibly be removed or modified, and that there is a greater coastal resource and/or public access benefit to removal or modification, and if the shoreline armoring is under the applicant's control, then removal or modification shall be required as a condition of approval for the demolition or alteration of the existing structure(s). However, if the device continues to be necessary to protect other existing principal structures on the property, other adjacent existing principal structures, or coastal dependent uses entitled to protection, then it may remain for so long as it is necessary for those purposes and its duration is addressed pursuant to ***[Model Policy F.6]***.

F.6 Shoreline Armoring Duration

Shoreline protective devices shall only be authorized until the time when the existing principal structure that is protected by such a device: 1) is no longer present; 2) no longer requires armoring; or 3) is redeveloped. Permittees shall be required to submit a coastal permit application to remove the authorized shoreline protective device within six months of a determination that the shoreline protective device is no longer authorized to protect the structure it was designed to protect because the structure is no longer present or no longer requires armoring and the device is not needed to protect adjacent development that is still entitled to shoreline armoring. In the case of redevelopment, any potential rights to protection are terminated and removal of the shoreline

protective device shall be required as part of demolition and alteration of the structure being redeveloped.

F.7 Shoreline Armoring Mitigation Period

As a condition of approval for new, redeveloped or non-exempt repairs to shoreline protective devices, require mitigation of impacts to shoreline sand supply, public access and recreation, and any other relevant coastal resource impacts in 20-year (or smaller) increments, starting with the building permit completion certification date. Permittees shall apply for a coastal permit amendment prior to expiration of each 20-year mitigation period, proposing mitigation for coastal resource impacts associated with retention of the shoreline protective device beyond the preceding 20-year mitigation period, and such application shall include consideration of alternative feasible mitigation measures in which the permittee can modify or remove the shoreline protective device to lessen its impacts on coastal resources.

F.8 Shoreline Armoring Monitoring and Mean High Tide Line Surveys

As a condition of approval for new, redeveloped or non-exempt repairs to shoreline protective devices, require a monitoring plan to identify the impacts of the shoreline armoring on the surrounding area and determine when a shoreline protective device is no longer needed for protection. The monitoring plan shall specify requirements for periodic inspection ***(e.g., every [5 years])*** for structural damage, excessive scour, or other impacts from coastal hazards and sea level rise, impacts to shoreline processes and beach width (both at the project site and the broader area and/or littoral cell as feasible), and impacts to public access and the availability of public trust lands for public use. Every ***[x]*** years, or in the event of reaching a specified trigger, the landowner shall submit a new Mean High Tide Line (MHTL) survey of the Subject property based on field data collected within 12 months of the date submitted. Such surveys must comply with the standards in ***[Model Policy D.3].***

Note: The intent of a policy describing limits on future shoreline armoring is to inform property owners about the risks of placing new development or redevelopment in a hazardous area subject to sea level rise impacts and to ensure consistency with Coastal Act policies that limit shoreline armoring. As described above, Coastal Act Section 30253 and other Coastal Act provisions significantly limit the ability to approve shoreline armoring for new development. The first part of Model Policy F.9 ensures that applicants for new development, as well as future property owners, are aware that they may not claim a right under Section 30235 to obtain shoreline armoring for the new development. However, this policy would not restrict an owner's ability to later apply for and obtain shoreline armoring that is fully consistent with the LCP and with the Coastal Act's public access provisions. This part of the policy is appropriate for any new non-coastal dependent development located in a hazardous area where there is a possibility that wave action, flooding, erosion or other sea level rise impacts could someday threaten the structure.

The second part of F.9 provides an alternative, broader limitation that may be appropriate for new development in locations where any future shoreline armoring would clearly be inconsistent with relevant LCP policies and the public access policies of the Coastal Act. In areas of the coast where the local government has determined, through its LCP, that armoring is inappropriate, use of this policy language will help ensure that applicants for new development are clearly informed that they will not be able to construct armoring to protect their new structures. This broader policy carries out Section 30253's mandate that new development not in any way require the construction of shoreline protection that substantially alters natural landforms along bluffs or cliffs, and the requirements of other relevant Coastal Act policies (e.g., Sections 30210 , 30240, 30251) to protect access, recreational resources, visual resources, and other coastal resources. Local jurisdictions should consider which policy to apply in different areas, depending on the adaptation strategies chosen in those areas and the possibility that Coastal Act-consistent armoring could be a part of that adaptation strategy. For an approach that local governments can use to implement F.9, see Model Policy G.4 Sea Level Rise Hazard Overlay Zone.

F.9 Limits on Future Shoreline Armoring

As a condition of approval of a coastal development permit for new development or redevelopment on a beach, shoreline, bluff, or other area subject to coastal hazards, applicants shall be required to acknowledge that the new development or redevelopment does not qualify as a structure entitled to shoreline protection under Coastal Act Section 30235 [***or corresponding LCP provision Model Policy F.1***]. The applicant shall also waive any right to claim that the structure is entitled to shoreline protection under Coastal Act Section 30235 [***or corresponding LCP provision Model Policy F.1***]. Private property owners shall be required to record that acknowledgment and waiver in a deed restriction [(***see also Model Policy A.6 – Assumption of Risk***)]. For purposes of this policy, the term *coastal hazards* includes, but is not limited to, tidal and storm flooding, storm conditions, waves, wave run-up, bluff retreat, erosion, and landslides, as influenced by sea level rise over time.

Alternative language to use where appropriate,
OR as an additional policy to apply in particular areas

As a condition of approval of a coastal development permit for new development or redevelopment on a beach, shoreline, bluff, or other area subject to coastal hazards, applicants shall be required to acknowledge and agree that no bluff or shoreline protective device(s) shall ever be constructed to protect the approved development, including if it is threatened with damage or destruction from coastal hazards in the future. As a condition of approval, applicants shall also waive any rights to construct such devices that may exist under applicable law. Private property owners shall be required to record that acknowledgement, agreement, and waiver in a deed restriction [***(see also Model Policy A.6 – Assumption of Risk***)]. For purposes of this policy, the term *coastal hazards* includes, but is not limited to, tidal and storm flooding, storm conditions, waves, wave run-up, bluff retreat, erosion, and landslides, as influenced by sea level rise over time.

F.10 Bulkheads for Waterfront Development

New development or redevelopment on property currently protected from flooding by bulkheads is permitted to rely on those bulkheads to demonstrate that the project will protect life and property from coastal hazards if: 1) the existing bulkheads, and feasible augmentation of them necessary to protect the proposed structure over its life, do not alter natural shoreline processes along bluffs or cliffs or cause adverse impacts to public access, marine habitat, aesthetics or other

coastal resources protected in the LCP, including when considering migration of public trust lands and impacts from anticipated groundwater changes; and 2) property owners record a waiver of any rights to seaward expansion of the bulkhead as a condition of approval of a coastal development permit for new development when a coastal hazards report (see Policy A.4 –Site-specific Coastal Hazard Report Required) establishes that an existing bulkhead cannot be removed and/or an existing or replacement bulkhead is required to protect existing principal structures and adjacent development or public facilities on the site or in the surrounding area. Waiver of rights to future shoreline protection includes repair or maintenance, enhancement, reinforcement, or any other activity affecting the bulkhead, that results in any encroachment seaward of the authorized footprint of the bulkhead. The principal structure(s) should be set back a sufficient distance 1) to allow for repair and maintenance of that bulkhead including access to any subsurface deadman or tiebacks and 2) to allow for realignment of necessary bulkheads as far landward as possible and in alignment with bulkheads on either side.

Note: 14 California Code of Regulations Section § 13009 defines an emergency as, "a sudden unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property, or essential public service." Local vulnerability assessments should give some indication of where emergency hazards are more likely to emerge, and can allow a community to begin planned adaptation strategies for segments of their coastline to respond proactively. However, emergency applications for shoreline protective devices are still likely to increase as risks of storm damage are exacerbated by sea level rise. It is important to note that the emergency permit is only a temporary authorization of development. The Commission often authorizes emergency work for 90 days, but local governments may choose other timeframes, based on particular circumstances. The regular coastal development permit process for such development allows for an alternatives analysis to determine the best way to implement adaptation measures that consider impacts on neighboring properties as well as cumulative impacts on shoreline processes and coastal resources.

Local governments can avoid emergency permit requests unintentionally resulting in permanent armoring by enforcing temporary armoring expiration dates, requiring a regular coastal permit application after issuance of emergency permits, and specifying conditions for removal of emergency shoreline armoring if it is not authorized in a subsequent regular coastal permit.

F.11 Emergency Permits

In the event of an emergency, the [***Planning Director***] may issue an emergency Coastal Development Permit to authorize emergency work in compliance with Section 30624 of the Coastal Act. The [***Planning Director***] shall not issue an emergency Coastal Development Permit for any work to be conducted on any tidelands, submerged lands, or on public trust lands, whether filled or unfilled, or any other area within the Coastal Commission's retained coastal permit jurisdiction; requests for emergency work in these areas shall be referred to the Coastal Commission. The emergency approval shall conform to the Local Coastal Program. The emergency permit process is intended to allow for emergency situations to be abated through use of the minimum amount of temporary measures necessary to address the emergency in the least environmentally damaging short- and long-term manner, including that the development is easily removable. The [***Planning Director***] may request, at the applicant's expense, verification by a qualified professional of the nature of the emergency and the range of potential solutions to the emergency situation, including the ways such solutions meet these criteria.

a. Application. An application for an emergency Coastal Permit shall be filed with the [***Planning Director***] in writing if time allows, or in person or by telephone if time does not allow.

b. Required information. The applicant shall report to the [***Planning Director***] the following information, either during or as soon after the emergency as possible (and in all cases before the emergency Coastal Permit expires):

1. The nature and location of the emergency;
2. The cause of the emergency, insofar as this can be established;
3. The remedial, protective, or preventive work required to deal with the emergency; and
4. The circumstances during the emergency that appeared to justify the course(s) of action taken, including the probable consequences of failing to take action.
5. An application for an emergency shoreline protective device shall be accompanied by a hazards report [(***see Policy xxx***)]. If the applicant is unable to provide all such information due to the nature of the emergency, then the applicant shall provide at a minimum: (a) a description of what measures, if any, were taken in advance in order to mitigate the hazard and (b) an analysis of alternatives, including use of sand bags, as well as the "no action" alternative.
6. All required technical reports and project plans.

The Director shall verify the facts, including the existence and nature of the emergency, as time allows.

c. Notice. The [***Planning Director***] shall provide public notice of the proposed emergency work, and determine the extent and type of notice based on the nature of the emergency. The ***[Planning Director***] shall notify the Executive Director of the Coastal Commission as soon as possible about potential emergency coastal permits, and shall report, in writing, to the Executive Director after the emergency coastal permit has been issued, the nature of the emergency, and the work involved.

d. Emergency permit approval. The [***Planning Director***] may grant an emergency permit upon reasonable terms and conditions, including an expiration date, if the [***Planning Director***] finds that:

1. An emergency (i.e., a sudden unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property or essential services) exists that requires action more quickly than permitted by the procedures for a Coastal Development Permit, and the work can and will be completed within 30 days unless otherwise specified by the emergency permit;
2. Public comment on the proposed emergency action has been reviewed, if time allows; and
3. The proposed work is consistent with applicable Local Coastal Program policies.
4. The proposed work is the minimum amount of temporary development necessary to abate the emergency in the least environmentally damaging short- and long-term manner.

The decision to issue an emergency permit is at the sole discretion of the [***Planning Director***], provided that subsequent Coastal Development Permits required for the project shall comply with all applicable provisions of the LCP.

e. Coastal Permit required. All emergency Coastal Development Permits shall expire ninety (90) days after issuance, unless extended for good cause by the [***Planning Director***], if such extension is limited as much as possible in duration. All emergency development pursuant to

this section is considered temporary and must be removed and the affected area restored if the development is not subsequently permitted by a regular coastal development permit within 6 (six) months of the date of emergency permit issuance, unless the [***Planning Director***] authorizes an extension of time for good cause. Within 30 days of issuance of the emergency Coastal Permit, the applicant shall apply for a regular Coastal Permit. Failure to file the applications and obtain the required permits may result in enforcement action.

G. COMMUNITY SCALE ADAPTATION PLANNING

Note: The Coastal Act calls for public understanding of, and maximum public participation in, coastal planning. The Coastal Act also requires protection of coastal resources for current and future generations, including through orderly development that reduces risks and preserves public access. To achieve consistency with these Coastal Act requirements, much of sea level rise adaptation for residential land use will require a community approach, as the scope of parcel level actions is too limited to address all coastal hazard impacts, especially when existing residential development is already located in hazardous areas. For example, unless individual bulkheads in a community are raised together, the lowest one will be the weak link and will expose larger areas (homes and roads) to flooding. Community scale adaptation approaches should reflect public participation in the planning process (LCP steps 3 and 4) and may require regional collaboration depending on the extent of anticipated shoreline impacts from the anticipated community-wide adaptation options. Community participation in adaptation planning can highlight unique coastal resources and different opportunities for maintaining them within the adaptation pathways approach.

Community scale adaptation plans should also take into account other climate change impacts (e.g. changes in precipitation patterns, fire frequency, etc.), and jurisdictions should work with other counties and cities to develop and incorporate expectations for potential future impacts given other watershed scale changes. These changes may be related to climate change effects, other development upstream, or management decisions and processes.

Developing Adaptation Planning Information

G.1 Management of Sea Level Rise Hazards

a. Gather information on the effects of sea level rise, including identifying the most vulnerable areas, structures, facilities, and resources; specifically areas with priority uses such as public access and recreation resources, including the California Coastal Trail, Highway 1, significant ESHA, wetlands or wetland restoration areas, open space areas where future wetland migration would be possible, and existing and planned sites for critical infrastructure.

b. The [***Insert city or county***] shall conduct a vulnerability assessment [by ***insert date***] and establish baseline conditions using best available science identified pursuant to Policy A.1 - Identifying and Using Best Available Science - and use multiple sea level rise scenarios including estimates of high projections of expected sea level rise.

c. The [***Insert city or county***] shall update Sea Level Rise Maps at least every 10 years or as necessary to allow for the incorporation of new sea level rise science, monitoring results, and information on coastal conditions.

d. Research the potential to increase setbacks for or relocate existing and planned development to safer locations in order to minimize hazards and protect coastal resources. Explore the feasibility of a managed retreat program, which may involve protecting vacant land through zoning or conservation easements and/or removing development from areas vulnerable to sea level rise and restoring those areas to a natural state for open space or recreation. Identify potential mechanisms and incentives for implementation, which may include options to:
    1. Acquire vacant vulnerable properties.
    2. Acquire developed vulnerable properties before damage occurs.
    3. Acquire developed vulnerable properties after significant destruction by storms, erosion, or high tides.
    4. Explore the feasibility of public parkland exchange programs that encourage landowners to move out of hazardous areas.
    5. Identify and make available (e.g., through rezoning) land outside the hazard areas to allow owners of vulnerable properties to relocate nearby.
    6. Explore clustering of development density in areas not vulnerable to coastal hazards and limiting development in areas that are vulnerable.
    7. Develop Transfer of Development Rights programs.
    8. Develop programs to phase out the use of homes in coastal hazard areas, such as through leasebacks.
    9. Work with entities that plan or operate infrastructure, such as Caltrans, public utilities, railroads, water districts, etc., to plan for potential relocation or realignment of public infrastructure impacted by sea level rise.
    10. Support development of Geologic Hazard Abatement Districts (GHADs), County Services Areas (CSAs), or other similar entities to address the prevention, mitigation, abatement, and control of geologic hazards for specific neighborhoods

e. Join and/ or facilitate collaborative sea level rise adaptation efforts with other local, regional, state and federal entities to promote restoration or enhancement of natural ecosystems, such as coastal wetlands and sandy beaches.

f. Support efforts to monitor sea level rise impacts to recreational resources, natural resources and ESHA, including ***[insert names of beach areas]***; ***[insert names of wetland areas]***; and ***[insert names of creeks]***and other creeks; rocky intertidal areas, beaches and other habitat types vulnerable to sea level rise. Collaborate with other local, regional, state and federal entities to establish monitoring methods and track the effects of sea level rise.

g. Promote natural infrastructure pilot projects (horizontal levees, dune restoration, etc.) with environmental benefits that enhance natural and recreational resources while protecting assets from sea level rise and increased storm surges. Study and monitor such projects over time and share lessons learned with other jurisdictions.

h. Update standards for ESHA buffers and setbacks to account for sea level rise, based on the best available science and considering the effects of shoreline development on landward migration of wetlands.

G.2 Adaptation Plan

Develop and implement an adaptation plan that examines priorities for adaptation, timelines, options, specific projects to be implemented, phasing and action triggers. As components of the adaptation plan, assess seasonal and long-term shoreline changes and the potential for flooding or damage from erosion, sea level rise, waves, storm surge or seiches. Plans should provide recommendations for adapting existing development, public improvements, coastal access, recreational areas, and other coastal resources. Plans should evaluate the feasibility of hazard avoidance, managed retreat, restoration of the sand supply and beach nourishment in appropriate areas.

G.3 Adaptation Plan for Highly Vulnerable Areas

(Reference Policy B.1 Siting to Protect Coastal Resources and Minimize Hazards)
If development cannot be located and designed in a manner that meets the coastal hazard avoidance and minimization requirements of [***insert relevant policy, e.g., Model Policy B.1***] over the full anticipated life of the development, the development may nevertheless be approved if it meets all of the following criteria:

a. The LCP includes a Sea Level Rise Adaptation Plan for the area that: (1) analyzes resources and development that are vulnerable to coastal hazards, including as exacerbated by sea level rise, (2) evaluates adaptation alternatives, (3) identifies preferred strategies to protect coastal resources consistent with the Coastal Act, and (4) provides programs and policies to implement those strategies;
b. The proposed development is the least environmentally damaging feasible alternative, and is sited-and designed to protect coastal resources and minimize hazards to the extent feasible;
c. The approval is conditioned to require removal or other adaptation measures when specific triggers are met to ensure that the development does not: (1) interfere with the continued existence of adjacent environmentally sensitive habitat areas or recreation areas, (2) substantially impair public trust resources, (3) become structurally unstable, or (4) pose unacceptable risks to life or property or otherwise create a nuisance;
d. The proposed development is consistent with the public access and recreation policies of the Coastal Act, as well as all relevant LCP policies except ***[insert relevant policy, e.g., Model Policy B.1]***.
e. A hazard assessment must demonstrate that the development appropriately minimizes risks to life and property and ensures structural stability for a minimum of ***[insert relevant timeframe based on type of development, such as twenty years for primary residential structures]*** years.

Sea Level Rise Overlay Zones

Note: Sea Level Rise Overlay Zones (hazard overlay zones and beach open space zones) can be useful tools for overall, long-term adaptation strategies. Policies on Sea Level Rise Overlay Zones should cross reference relevant LCP policies that provide the actions triggered by the presence of the zone. An overlay zone can meet multiple objectives, set boundaries based on a worst case scenario, and define the policy considerations for those areas. For example, policies in Sea Level Rise Overlay Zones might trigger downzoning, redevelopment restrictions, structure removal, or other adaptation measures for development. A Sea Level Rise Overlay Zone could also be incorporated into a shoreline management plan that preserves coastal resources in the long term, allows for inland shoreline migration, and defines future expectations for what development will be permitted in sea level rise hazard zones going forward.

G.4 Sea Level Rise Hazard Overlay Zone

(Reference Policy A.3 Mapping Coastal Hazards)
Minimize risks to life and property associated with sea level rise through application of policies and standards specific to the Sea Level Rise Hazard Overlay Zone [***insert reference to maps, e.g., (see Figure X)***]. Policies in this section ***[insert section or policy numbers]*** shall apply to all properties within the Sea Level Rise Hazard Overlay Zone.

G.5 Beach Open Space Zone

Establish a 'Beach Open Space' zone located in ***[the defined hazard/management area]*** to provide for current and future beach access and management, including inland migration of the beach as sea level rises. The purpose of the zone is to provide for protection of the migrating/ambulatory beach and public access to and along it. All existing development that is not for public access or recreation would become non-conforming in the zone district. Unless otherwise required to be approved pursuant to other LCP policies, new development would be prohibited within the zone, with the exception of: 1) new development on properties that participate in the Managed Retreat Program as specified in ***[Model Policy G.10–Managed Retreat Program]***, and 2) development related to habitat restoration, public access or beach/ocean recreational opportunities.

Community Scale: Beach and Dune Adaptation

Long term planning for all urban beachfront development should consider that the adaptive capacity of beaches may diminish where shoreline armoring prevents the natural migration of the beach as sea levels rise, even with continued sand nourishment. Additionally, communities need to consider the availability of sand resources for their future nourishment needs given increasing beach erosion and limited sand supplies.

G.6 Beach Nourishment

In coordination with the Coastal Commission and other permitting agencies (e.g., State Lands Commission, U.S. Army Corps of Engineers), develop and implement a comprehensive beach nourishment program to assist in maintaining beach width and elevations. The beach nourishment program should include measures to protect water quality and to minimize and mitigate potential adverse biological resource impacts from deposition of material, including measures such as sand compatibility specifications, restrictions on volume of deposition, timing or seasonal restrictions, and identification of environmentally preferred locations for deposits. The [***insert City or County***] should consider developing an opportunistic sand program and determining how replenishment options may need to change over time as sea level rises.

Community Scale: Bluff Erosion Adaptation

G.7 Improve Drainage on Bluffs to Reduce Erosion

Investigate areas which could be significantly contributing to increased groundwater flows to the bluffs and determine whether improving drainage and/or reducing irrigation could potentially reduce bluff erosion. If measures to improve drainage or reduce over-watering are found to have the potential to reduce bluff erosion, the ***[insert City or County]*** should inform property owners about appropriate irrigation practices and drainage improvements as part of existing water conservation outreach programs.

Trigger-Based Adaptation Approaches

Note: Trigger-based adaptation approaches present a mechanism by which adaptation actions can be phased over time. Local governments must first understand baseline vulnerability conditions (potentially through vulnerability assessment per Policy G.1) to identify thresholds that might have been exceeded in the past, or that may be exceeded in the future on a community scale. Trigger-based policies should also be developed through a community adaptation planning process that identifies appropriate trigger types and responsive actions (e.g., beach nourishment) or programs (e.g., managed retreat program).

Model Policies G.8 – G.10 contain conceptual elements or triggers that could be written in a single customized policy for a particular location. For example, a managed retreat program could use repetitive loss or beach width triggers to set community priorities for targeted buy-outs. Additionally, a similar policy to the managed retreat program for beaches could be applied for wetlands or other habitat areas subject to sea level rise.

G.8 Repetitive Loss

The ***[insert City or County]*** shall develop a Repetitive Loss Program to eliminate or reduce damage to property, impacts on coastal resources, and the community disruption caused by repeated flooding or storm damage. A Repetitive Loss Structure is a structure that has suffered damage and filed FEMA claims or coastal development permits or exemption applications for residences damaged beyond ***[insert percentage: XX%]*** on two or more occasions during a rolling 10-year period. The Repetitive Loss Program shall require properties with Repetitive Loss Structures to be rezoned to less intensive uses that limit reconstruction and to accommodate shoreline migration, increased coastal flooding, inundation, and related sea level rise impacts. The Program shall include maintaining a database of property flooding and damage to further identify and monitor local hazard areas, as resources are available. Where hazards make it difficult for private owners to achieve a reasonable use of the property, acquisition of the property by the ***[insert City or County]*** shall be encouraged.

G.9 Beach Management Plan

Establish a comprehensive beach management plan within the framework of adaptation planning and regular LCP updates to protect and enhance existing beach areas. The Plan shall identify actions and programs that can be implemented in the near term or would be implemented based on pre-determined future triggers to preserve recreational, habitat, and other coastal resource values and should include research into opportunities for additional adaptation actions that would be implemented based on future impacts. The beach management plan shall also include and expand upon the following actions:

a. Establish a minimum beach width that maintains optimum public recreational access and habitat function. The analysis used to establish the minimum width shall include considerations of daily tidal range, seasonal erosion, and short-term, storm driven erosion.
b. Coordinate with sediment management plan actions and establish appropriate triggers for sediment management activities and/or implementation of the Managed Retreat Program (***[Model Policy G.10***]) so that width is maintained as the beach naturally migrates over time in response to erosion, sea level rise, and other coastal processes
c. Monitor beach width, mean high tide line and bluff toe elevation.
d. Monitor public access, beach use, and any impacts to public trust lands. Identify and track locations, times, and durations throughout the year when the beach is too narrow to be adequate for recreation and/or lateral access.

e. Pursue opportunities for beach nourishment or otherwise increasing beach widths and enhancing beach access.
f. Evaluate adaptation opportunities for vulnerable roads and highways that provide beach access, and pursue opportunities that would maintain vehicular, bicycle and pedestrian access while protecting the beach and public access to it.
g. Revise the ***[City or County's]*** Local Hazard Mitigation Plan to provide for and support the Managed Retreat Program and to incorporate findings of relevant Vulnerability Assessments or Adaptation Plans.

Note: Multiple community-scale policy mechanisms (e.g., buy-outs, transfer of development rights, beach management plans) provide potential approaches to allowing the preservation of coastal resources (such as beaches or wetlands) despite natural shoreline change as sea levels rise. These approaches tend to function as rolling easements when planned in advance and coupled with overlay zones and accompanying downzoning of residential uses. Rolling easements can lead to the removal of structures that are designed and approved with managed retreat triggers (e.g., based on surveys of minimum beach width or mean high tide line). LCPs that include triggers and establish adaptation programs for addressing sea level rise impacts can help communities maximize habitat and natural resilience benefits while accommodating residential use during the time that the site can effectively support both habitat and development.

G.10 Managed Retreat Program

Establish a Managed Retreat Program to remove, modify or relocate development when necessary to protect and provide for the migrating shoreline and associated coastal resources, such as sandy beach area. The Managed Retreat Program must consist of at least the following components:

a. When the beach area of [***insert jurisdiction or specific beach name(s)***] is reduced below the minimum beach width established pursuant to [***Model Policy G.9***], development adjacent to the beach that is enrolled in the Managed Retreat Program must be moved, modified or removed and the area restored to open space to ensure the minimum beach width of ['[***XXX feet' or 'to restore adequate public access to the beach' feet or 'for more than XX percent of the calendar year***']].
b. All new development, which includes redevelopment including but not limited to modification of the foundation for elevation, in the Beach Open Space zone must enroll in the Managed Retreat Program. Permits for such development shall be conditioned to require its modification or removal when necessary to maintain the minimum beach width, and a deed restriction must be recorded to carry out this requirement and notify all new owners of this condition.
c. Property owners with existing development may voluntarily enroll in the Managed Retreat Program. The [***insert City or County***] shall pursue funding to purchase easements or development rights from such property owners who voluntarily enroll in the Managed Retreat Program. Restrictions applied pursuant to voluntary enrollment may be structured such that removal for the purpose of maintaining beach width as required in subsection (a) above cannot be triggered on the subject property for a minimum length of time, such as a minimum of 30 years, unless the structure is damaged or threatened and modifications to the structure itself (such as elevation or floodproofing) cannot address the threat, or unless any other removal triggers apply (such as pursuant to [***Model Policy D.1***]). Funding for the voluntary program may come from in-lieu fees, grants, or other state or federal funds.
d. The [***insert City or County]*** shall pursue funding to acquire non-conforming structures from willing sellers within the Beach Open Space zone and lease these residences to

provide residential or vacation rental use until such a time that the structure routinely blocks lateral public access; is within the minimum beach width area ['***for more than XX percent of the calendar year']***; is damaged ***[beyond XX% or is threatened with imminent damage;%];*** is no longer habitable; is otherwise required to be removed pursuant to ***[Model Policy D.1]***; or leasing becomes otherwise infeasible.

Transfer of Development Rights

Transfer of development rights (TDR) is a market-based tool that can help implement phased retreat from shoreline hazard zones. TDR programs enable individual transactions to transfer development rights from privately owned parcels (i.e., sending sites) to areas that can accommodate additional growth (i.e., receiving sites). Property owners in sending areas receive compensation for giving up their right to develop, while developers in receiving areas pay for the right to develop at greater densities or heights than would otherwise be allowed by current zoning. TDR is not intended to limit growth, but can allow communities to identify which areas are suitable to receive development rights and how much additional development is appropriate.

G.11 Transfer of Development Rights Program

The City shall encourage the protection of ***[insert description of shoreline such as coastal bluff tops, dunes, or beaches]*** by establishing a Transfer of Development Rights program that concentrates development in receiving districts that are outside of areas vulnerable to sea level rise and provides for the transfer of development rights from sending districts that are in areas vulnerable to sea level rise.

Financing Adaptation

Note: Implementation of adaptation approaches will require significant funding in the future. Geologic Hazard Abatement Districts (GHADs), County Service Areas (CSAs), and other similar entities provide a potential means for funding sea level rise adaptation measures on a neighborhood scale. By accumulating a funding reserve for anticipated future needs, a GHAD or CSA can provide the financial resources necessary for adaptation approaches that extend beyond a single parcel. Typically, these entities can borrow from lenders or issue bonds with very attractive credit terms. Another avenue to consider is identifying options for project funding that might overlap with LCP adaptation from other programs such as the Federal Emergency Management Agency's Hazard Mitigation Assistance (HMA) grant programs. Appendix A lists some potential funding sources.

G.12 Geologic Hazard Abatement Districts (GHADs) and County Service Areas (CSAs)

Explore the feasibility of forming Geologic Hazard Abatement Districts (GHADs) and/or CSAs to fund measures to address the prevention, mitigation, abatement, and control of geologic hazards within a designated sea level rise hazard zone.

G.13 Aligning LCPs with LHMPs

Coordinate across [***City/County***] departments and seek to align the Local Hazard Mitigation Plan (LHMP) with the LCP to ensure that proactive adaptation efforts are coordinated and responses to damage from future coastal hazards are streamlined. Identify future adaptation projects that meet the goals of both the LCP and LHMP and leverage FEMA funding opportunities for hazard mitigation and other related funding mechanisms to implement such projects.