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November 21, 2002

TO: Commissioners and Interested Persons

FROM: Charles Lester, District Director
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Rick Hyman, Deputy Chief Planner
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RECORD PACKET COPY

SUBJECT: **CITY OF CARMEL-BY-THE-SEA: LAND USE PLAN RE-SUBMITTAL (3rd).** For public hearing and Commission action at its meeting of December 12, 2002 to be held in San Francisco at the Hyatt Regency-Embarcadero, 5 Embarcadero Center, San Francisco, CA 94111.

SYNOPSIS

DESCRIPTION OF THE SUBMITTAL This is the Executive Director's Staff Report and Recommendation on the City of Carmel-by-the-Sea Local Coastal Program (LCP) Land Use Plan (LUP). This is the third re-submittal of the Land Use Plan. The previous iterations were prepared in the early 1980's. The current submittal is an entirely new compilation of documents and policies developed over the last several years, and consists of three main chapters and six appendices. It was submitted on December 20, 2001, but could not be filed due to a lack of some supporting documentation. Meanwhile Coastal staff worked with City staff on issues raised by the submittal. The City Council passed and submitted an amended version of the Plan on November 12, 2002. The standard of review of the land use plan is Chapter 3 policies of the California Coastal Act. The City has also forwarded a companion Coastal Implementation Plan that is not yet filed and will be considered at a later date.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends that the Commission hold a public hearing and take the following action for the City of Carmel-by-the-Sea Land Use Plan: First staff recommends Denial of the Land Use Plan as resubmitted. Then staff recommends approval if the re-submittal is modified. The City has six months to accept the modifications or the re-submittal stands denied.

The recommendation for denial of the LUP is based on inconsistencies of the re-submittal with several Coastal Act policies: those requiring scenic and community character protection, providing for public access and recreation and ensuring that

development is commensurate with the level of public services (in this case, water) available.

The recommendation for Certification of the Land Use Plan contains Suggested Modifications to address each of the noted deficiencies as discussed below.

SUMMARY OF UNRESOLVED ISSUES

Community Character:

The proposed land use plan contains several policies designed to ensure that Carmel-by-the Sea's unique community character is retained. Over the years Carmel's community character has changed significantly, as the community has redeveloped. Through the permit review process, and this LCP review, the Commission has identified specific ways that the character is being eroded; including replacing smaller homes with larger homes, increased tree removal, greater lot coverage, incompatible designs, and general loss of potential historic structures. Although the proposed land use plan has several policies that address each of these elements of community character, they are somewhat general, non-directive, and in some cases permissive. If the Land Use Plan were approved as submitted, community character would not be protected.

Therefore, staff recommends that modifications be adopted to bring the LUP into conformance with Chapter 3 of the Coastal Act. These modifications in large part add a series of design criteria to the land use plan. These suggested additions are based primarily on the City of Carmel-by-the-Sea's own Designs Tradition document. While application of these modified policies will still leave considerable discretion to the City decision-makers on matters of design style and elements, it will also better ensure that new development fits within the City's existing community character.

The Land Use Plan has a series of policies designed to protect Carmel-by-the-Sea's historical structures, which are a significant component of the City's overall community character. Generally, these policies define what is historic and limit the amount of alterations that could occur to these structures. However, the Land Use Plan is deficient in describing key components of the identification process and in ensuring that all identified resources are subject to the appropriate regulatory policies, thereby, not assuring that all significant historical structures will be protected. Therefore, modifications are suggested with regard to the Historical Preservation Board, the Carmel Inventory of Historic Resources, the City's Historic Context Statement, the site inspection process, the California Register of Historic Resources criteria, and the development review process.

Public Access and Recreation:

The proposed Land Use Plan has a good description of the various public access and recreational and visitor-serving opportunities available. Carmel-by-the-Sea is a popular visitor destination with a spectacular white sandy beach, bluff-top pathway, vibrant

downtown shopping area, numerous overnight accommodations, and picturesque streets and residences. In general, the Land Use Plan policies call for protecting these facilities and access to them and for some improvements. However, staff has identified three deficiencies with the policies that would have adverse implications for public access and visitor-serving facilities. First, the land use plan places significant restrictions on beach parking in the evening hours, thereby depriving visitors of a way to be able to conveniently access the beach. Second, the land use plan does not address proposed abandonment of a shoreline street that could provide public access. Finally, the land use plan does not address retention of lower cost visitor serving facilities. Therefore, staff is recommending modifications to increase hours of available parking, mitigate the street abandonment, and retain lower cost visitor opportunities.

Hazards

The proposed land use plan generally addresses coastal hazard issues in conjunction with shoreline policies. This is appropriate because, for the most part, coastal hazard issues within Carmel are predominantly shoreline related (including preserving Carmel Beach and shoreline environs consistent with the established character and aesthetic there). The policies propose a series of analytical studies to allow the City and the Commission to better understand the interplay of natural shoreline process and how these processes have been, and will continue to be, affected by the inland urban development, including the seawalls and revetments that cover much of the Carmel's back beach shoreline. Additional policies are proposed that are designed to describe the circumstances under which shoreline armoring is allowed and how to manage the overall shoreline area. The intent of the proposed policies is to preserve and enhance the Carmel Beach shoreline area to ensure that this public access jewel remains in place and retains its charm for current and future generations to enjoy.
The submitted LUP generally responds to Coastal Act hazard policies, but it isn't entirely consistent with the Act in each case. There is also a lack of clarity and some internal inconsistency within the proposed policies that could lead to confusion when the LUP is implemented in the future. Such confusion would be at the expense of the coastal resources it is designed to protect. Therefore, staff is recommending modifications designed to clarify the contextual background, the range of information necessary to adequately understand Carmel Beach shoreline dynamics, the types of armoring projects that may be allowed in the future (and the types of measures necessary to ensure that they are consistent with the character of the beach area), and the measures necessary to preserve the beach area in a hazards context.

Public Works

The proposed land use plan generally adequately describes the City's public infrastructure and offers policies for its future improvements and maintenance.

However, the City of Carmel-by-the-Sea is in an area that basically is out of water and the proposed policies do not adequately address this situation in a manner consistent with the Coastal Act. Therefore, staff is recommending modifications to follow use priorities of the Coastal Act, ensure development applications are complete with regard to available water sources, and prohibit individual private wells or desalination facilities.

Other Issues

By and large the proposed Land Use Plan adequately addresses issues of archaeological resources, ESHA, and water quality protection. There are proposed policies for identification and preservation of archaeological sites and environmentally sensitive habitats. The City also commits to a number of actions to actively manage and improve its habitat areas. Similarly, there are proposed policies to address storm water runoff in a manner to prevent water pollution, ultimately of Carmel Bay. There are a two omissions from having a comprehensive set of water quality policies regarding limiting site coverage and meeting the 85th percentile storm event . There are also a few updates that need to be made to the ESHA discussion. Therefore, staff is recommending modifications to add to the water quality policies and update the ESHA policies.

In terms of other Coastal Act topics, they are not relevant and thus not discussed in this report. The City of Carmel-by-the-Sea lacks any agricultural land, timberlands, boating facilities, dams, coastal-dependent industries, or major energy plants.

PUBLIC PARTICIPATION SUMMARY

The noted issues and others of more local concern were debated in many public forums. The City has provided a detailed summary of public participation available for review at the Commission offices. As described, the Land Use Plan is a compilation of and based on material from different documents. Many of these were subject to local hearings. The City Council, Planning Commission, and other City committees held at least a combined 140 public hearings on various aspects of the Plan.

ADDITIONAL INFORMATION

For further information on the Land Use Plan or the staff report, contact Mike Watson at (831) 427-4863. Correspondence should be sent to the Santa Cruz district office at 700 Front St., Ste. 300, Santa Cruz, CA 95060.

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I. STAFF RECOMMENDATION: MOTIONS AND RESOLUTIONS

Staff recommends adoption of the following resolutions:

Resolution I. (Resolution to certify the Carmel-by-the Sea Land Use Plan as submitted)

Staff recommends a **NO** vote on the motion below. Failure of this motion will result in denial of certification of the land use plan as submitted and adoption of the following resolution and findings. The motion passes only upon an affirmative vote of a majority of the appointed Commissioners.

> ***Motion #1:*** *I move that the Commission certify the Land Use Plan for the City of Carmel-by-the-Sea Local Coastal Program as submitted.*
>
> ***Resolution to Deny Certification:*** *The Commission hereby denies certification of the Land Use Plan of the City of Carmel-by-the-Sea Local Coastal Program for the reasons discussed below and because the City of Carmel-by-the-Sea Land Use Plan fails to meet the requirements of and does not conform to the policies of Chapter 3 of the Coastal Act to the extent necessary to achieve the basic state goals specified in Section 30001.5 of the Coastal Act; is not consistent with*

applicable decisions of the Commission which shall guide the local government in its future actions under Section 30625(c) of the Coastal Act; and does not meet the requirements of Sections 21080.5(d)(2)(i) of the California Environmental Quality Act, because there are feasible alternatives or mitigation measures available that would substantially lessen any significant adverse impact that the Land Use Plan may have on the environment.

Resolution II. (Resolution to certify the City of Carmel-by-the-Sea Land Use Plan if modified)

Staff recommends a **YES** vote on the motion below. Passage of this motion will result in certification of the Land Use Plan with the suggested modifications and adoption of the following resolution and findings. The motion to certify with the suggested modifications passes only upon an affirmative vote of a majority of the appointed Commissioners.

Motion #2: *I move that the Commission certify the Land Use Plan as submitted by the City of Carmel-by-the-Sea , if modified as suggested by the following modifications in this staff report.*

Resolution to Certify the Land Use Plan if Modified: *The Commission hereby certifies the Land Use Plan of the City of Carmel-by-the-Sea Local Coastal Program subject to the following modifications, and adopts the findings set forth below on the grounds that, if modified as suggested below, the Land Use Plan will meet the requirements of conformance with the policies of Chapter 3 (commencing with Section 30200) of the California Coastal Act to the extent necessary to achieve the basic state goals specified in Section 30001.5 of the Coastal Act; the Land Use Plan will contain a specific access component as required by Section 30500(a) of the Coastal Act; the Land Use Plan will be consistent with applicable decisions of the Commission that shall guide local government actions pursuant to Section 30625(c); and certification of the Land Use Plan will meet the requirements of Section 210805(d)(2)(i) of the California Environmental Quality Act, as there would be no further feasible mitigation measures or feasible alternatives which could substantially lessen significant adverse impacts on the environment. The suggested modifications to the submittal are necessary to achieve the basic state goals set forth in Section 30001.5 of the Coastal Act.*

The Commission finds that if the City of Carmel-by-the-Sea adopts and transmits its revisions to the Land Use Plan in conformity with the suggested modifications, then the Executive Director shall so notify the Commission.

II. SUGGESTED MODIFICATIONS

The Commission suggests that the following changes to the submitted City of Carmel-by-the-Sea Land Use Plan are necessary to make the requisite findings. If the local

government accepts the suggested modifications within six months of Commission action, by formal resolution of the City Council, the Land Use Plan will become effective upon Commission concurrence with the Executive Director finding that this has been properly accomplished.

COMMUNITY CHARACTER

1. Add the following new policy to page 37. New residential development shall maintain Carmel's enduring design principles of variety, modesty, and simplicity, and shall draw from and contribute to its neighborhood by generously providing for open space and preserving the City's traditions of simple homes set amidst a forest landscape.

2. Add the following new policy to page 37. New residential development shall be similar in size, scale, and form to buildings in the immediate block and neighborhood. Minimize the mass of building as seen from the public way or adjacent properties. Require building mass of new development to relate to the context of other homes in the vicinity. Larger building masses should be divided into forms that are similar in scale to houses see in the immediate neighborhood.

3. Add the following new policy to page 37. Require preparation of a preliminary site assessment that includes assessing the block and neighborhood as well as the resource constraints of the site prior to submittal of design plans for new development or projects that will alter the building footprint, add a second story or involve excavation. A site plan shall be prepared by a qualified professional and illustrate topography, drainage features, existing trees and structures, street edge, and existing conditions on immediately adjacent properties. Require a Forest Enhancement and Maintenance Plan during the site assessment. The Plan shall address the impacts of the proposed development on the existing forest conditions of the site. Site plan designs shall recognize the constraints of the land and work within these limitations. Minimize the extent of excavation and fill on a site; new development shall follow the natural contours of the site.

4. Add the following new policy to page 37. Maintain and enhance the informal, vegetated, open space character of the City's right-of-way. Trees in the right-of-way shall not be removed to provide parking. With the exception of driveways, new paving in the right-of-way is prohibited.

5. Add the following new policy to page 37. Prohibit the removal of significant trees (i.e., greater than 12" dbh) unless it would prevent a reasonable economic use of the site or pose a threat to health and safety. Locate buildings and other site structures to avoid removal and pruning and otherwise minimize damage to existing significant trees. Avoid impacts to trees by avoiding/minimizing impacts

to the root protection zone (i.e, within the drip-line). Establish continuity of landscape elements throughout each neighborhood. Replace trees removed for construction with several saplings. Require that they be nurtured until well established.

6. Add the following new policy to page 37. All demolitions, remodels, and substantial alterations shall be consistent with the following findings:

- The design uses simple/modest building forms and roof plans, and a restrained employment of offsets and appendages consistent with neighborhood character.
- Mass of the building relates to the context of other homes in the vicinity.
- The development is similar in size, scale, and form to buildings on the immediate block and neighborhood.
- The development does not require removal of any significant trees (> 12" dbh) unless necessary to provide a viable economic use or protect public health and safety. All development will be setback a minimum of 6 feet from significant trees.

7. Add the following new policy to page 37. Limit above grade floor area on single lots (i.e, 4,000 square feet) to a maximum of 1,600 square feet. Projects with less above grade square footage shall be preferred. Structural coverage shall not exceed 40% of the site. Total site coverage (structural and other impervious coverage) on 4,000 square foot lots shall not exceed 50% of the site. Locate open space so that it visually links with adjacent properties.

8. Revise description of land use density for Single-Family Residential on page 29, LAST TWO SENTENCES; Above-ground building intensity in this area may not exceed ~~45~~ 40 percent floor area ratio and all development requires at least ~~45~~ 50 percent open space~~.~~ with proportionately less floor area and greater open space ~~are~~ required on ~~larger~~ lots~~.~~ greater than 4,000 square feet.

HISTORICAL PRESERVATION

9. Add the following text to page 23, END OF 1ST PARAGRAPH; The Carmel Inventory of Historic Resources shall be updated on an ongoing basis as new resources are surveyed. Properties not listed on the Inventory shall be evaluated on a case-by-case basis as the need arises (e.g., when an application is filed for demolition or alteration, etc.).

10. Add the following new policy to page 44. All resources previously surveyed and evaluated by the City that meet the criteria established by the City's LCP shall, as of the date of certification of the Carmel-by-the-Sea LCP, be deemed included in the Carmel Inventory of Historic Resources.

11. Revise policy P9-62 on page 44. Maintain an Historic Context Statement that documents the historic periods, themes, events, people, architects and builders who have contributed to the cultural and developmental history of the City. Use the Historic Context Statement to identify, document and understand the importance of historic resources. Exclusion from this document shall not preclude a finding of significance for any resource. The Historic Context Statement shall be updated at least every five years. Updates shall be submitted to the California Coastal Commission as LCP amendments. ~~periodically to remain current~~ (See Appendix F: Historic Context Statement, Carmel-by-the-Sea, 1997).

12. Revise policy P9-63 on page 45. Apply California Register of Historical Resources (California Register) criteria[1] ~~as the framework~~ to identify and document all historic resources. Use the Historic Context Statement to interpret the California Register criteria in determining the significance of Carmel's historic resources.

13. Revise policy P9-64 on page 45. To qualify for listing in the Carmel Inventory, historic resources shall meet at least one of the California Register criteria, shall be representative of at least one theme included in the Historic Context Statement and shall retain substantial integrity[2]. Integrity (association, feeling, setting, location, design, materials and workmanship) shall be documented by comparing the existing condition of the resource with the original building plans or early photographs or other substantial evidence (e.g. literature review, architectural files, land records, Sanborn maps, etc.) and/or by physical inspection by a qualified historic preservation professional.

14. Revise policy P9-65 on page 46. To qualify for listing in the Carmel Inventory, an historic resource eligible under ~~for the~~ California Register ~~under just~~ criterion #3 only, ~~shall be required to meet a higher standard for integrity than is required for resources qualifying under criteria #1, #2 or #4, and~~ shall: (1) have been designed and/or constructed by an architect, design/builder or contractor whose work has contributed to

[1] The California Register has four criteria for historic significance. These (1) are associated with events that have made a significant contribution to broad patterns of local or regional history or the cultural heritage of California or the United States; or (2) are associated with the lives of persons important to local, California or national history; or (3) embody the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; or (4) has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

[2] Integrity is based on why a property is significant. Ultimately, the question of integrity is answered by whether or not the property retains the identity for which it is significant. The steps is assessing integrity are (1) defining the physical features that must be present for a property to represent its significance, (2) determining whether theses features are still visible enough to convey significance, (3) determining whether the property needs to be compared to other similar properties to understand its significance and (4) determine which aspects of integrity are vital if the property is to qualify as a resource (adapted from the National Register of Historic Resources, Bulletin #15).

the unique sense of time and place recognized as significant in the Historic Context Statement; (2) have been designed and/or constructed by~~. The work of~~ a previously unrecognized architect, design/builder or contractor ~~may be found historically significant only when~~ if there is substantial, factual evidence that the architect, designer/builder or contractor contributed to one or more of the historic contexts[3] of the City to an extent consistent with other architects, design/builders or contractors identified within the Historic Context Statement; (3) be a good example of an architectural style or type of construction recognized as significant in the Historic Context Statement; or (4) display a rare style or type for which special consideration should be given. ~~All such determinations shall be made by the Planning Commission based on recommendations from the Historic Preservation Board~~.

15. Delete policy P9-67 on page 46. ~~Properties that fail to meet the above-established criteria for inclusion in the Carmel Inventory shall not be treated as historic resources under this section or under provisions of the California Environmental Quality Act.~~

16. Revise policy P9-68 on page 46. Establish procedures for the Planning Commission, based on recommendations from the Historic Preservation Board, to add or remove historic resources from the Carmel Inventory based on substantial evidence. ~~incorrect evidence, invalid analysis, or loss of integrity of the identified historic resource~~. An historic resource listed on the Carmel Inventory shall be presumed historically significant and shall not be removed unless ~~a preponderance of the~~ substantial evidence demonstrates that it is not an historic resource.

17. Revise policy P9-70 on page 47. Use the Carmel Inventory to identify historic resources for purposes of required coastal development permit and California Environmental Quality Act (CEQA) review of proposed projects. Historic resources on the Carmel Inventory shall have a presumption of significance pursuant to CEQA § 21084.1 and shall be treated as historical resources under CEQA and the Carmel LCP. Failure to include a property on the Carmel Inventory shall not preclude a future determination that it qualifies as an historic resource based on new evidence.

18. Change policy P9-79 on page 48 to a Goal and revise as follows: Protect and enhance historic resources. Ensure that City ordinances, development review processes and administrative policies support, facilitate and coordinate with preservation activities.

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[3] An historic context is a body of information about historic properties organized by theme, place and time. A single historic context describes one or more important aspects of the development of an area relating to its history, architecture, archaeology and culture. A context may be based on one or a series of events, patterns of community development, or associations with the lives of a person or group of persons that influenced the destiny and character of a place or region (from National Register Bulletin #24). Currently there are five themes developed in Carmel's Historic Context Statement. They are: (1) Prehistory and Hispanic Settlement, (2) Economic Development, (3) Government, Civic and Social Institutions (4) Architectural Development in Carmel and (5) Development of Art and Culture.

19. Change policy P9-80 on page 48 to an Objective and revise as follows: Incorporate historic preservation principles into the City's project review processes. Avoid and minimize potential impacts on historic resources ~~through implementation and enforcement of~~ when developing and enforcing land use, design review, zoning, building code, fire code, environmental review, and other City regulations.

20. Add new policy to page 48. Review all proposed demolition and substantial alteration projects for potential historic resource impacts. Resources older than 50 years shall be evaluated for historic significance by the Historic Resources Board, pursuant to the objectives and policies contained herein and corresponding implementing ordinances. Resources less than 50 years old may be recommended for historic evaluation at the discretion of the Planning Director.

21. Revise policy P9-81 on page 48. ~~Implement~~ Use the Secretary of the Interior's Standards and Guidelines as the standard of review for development projects affecting historic resources. The City shall retain qualified professionals to review proposed exterior changes to historic resources to determine whether they are consistent with the Secretary of Interior's Standards and Guidelines Standards, and to make recommendations, where necessary, to the Historic Resources Board.

22. Revise policy P9-82 on page 49. Prohibit the demolition of all historic resources and prohibit changes to historic resources that are inconsistent ~~conflict~~ with the Secretary of Interior's Standards and Guidelines unless it is determined through environmental and City Council review that rehabilitation of the resource is not feasible. ~~there are no feasible alternatives~~. When completing environmental review of any project affecting an historic resource, require exploration of one or more alternative designs that would be consistent with the Secretary of the Interior's Standards and Guidelines Standards.

23. Revise policy P9-83 on page 49. Apply the ~~Implement~~ Design review guidelines to ensure preservation, protection, enhancement, rehabilitation, reconstruction, and perpetuation of existing structures of historic significance in a manner consistent with the character of the village. Such criteria shall include, but not be limited to, architectural design, size, scale, height, site coverage, spatial relationships, window, dormers, appurtenances, proportion and placement of improvements on the parcel, and landscaping, including planting or removal of vegetation.

24. Add new policy on page 46. Establish a Historic Preservation Board with powers and duties to administer the City's Historic Preservation Program. Establish requirements for Board members to demonstrate historic knowledge of Carmel, knowledge of history, architecture, archaeology, or past experience with preservation.

25. Add new Goal on page 50. Provide incentives for property owners to preserve and rehabilitate Historic Resources.

26. Add new policy on page 50. Pursue and support the use of appropriate federal,

state, local, and private grants, loans, tax credits, and tax relief. Develop or assist financial, technical, and legal assistance programs to encourage or assist with rehabilitation and maintenance. Participate in the State and Federal preservation process and programs. Make application to the State for becoming a Certified Local Government (CLG), which enables the City to receive technical training.

VISUAL/COMMUNITY CHARACTER

27. Add the following new goal to page 35: The incorporated City of Carmel-by-the-Sea shall be designated a special community and a highly scenic area. New development shall protect this special community and its unique characteristics.

PREFERENTIAL PARKING

28. Revise policy P9-134 on page 68. Provide convenient and free public beach parking from 5:00 a.m. until ~~10:30 p.m.~~ 1:00 a.m. daily. Parking outside of these hours along Scenic Road ~~and the Del Mar parking lot~~ shall be limited to residents and guests with a resident's parking permit.

DEL MAR ROAD ABANDONMENT

29. Revise policy P9-101 on page 64. Abandonment of any segments of the Del Mar Avenue roadway shall include on-site mitigation to include provisions for public access. Mitigation shall consider installation of a ~~Improve~~ pedestrian ~~circulation~~ path between the north end of the Beach Bluff Pathway at Eighth Avenue and the beach facilities at Ocean Avenue and the Del Mar Avenue parking lot. ~~as part of the Del Mar and North Dunes Master Plan.~~

VISITOR-SERVING

30. Add the following new policy to page 70: Lower cost visitor and recreational facilities be protected and encouraged and where feasible, provided. Developments providing public recreational opportunities are preferred.

HAZARDS

31. Add Coastal Act Section 30253(1) and (2) into the list of relevant polices in the Coastal Resource Protection Section on page 75 of the LUP:
New development shall:
(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.
(2) 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.

32. Revise Coastal Resource Protection section background as follows:

a) Pages 76-77: "Carmel, like..., appears to derive~~s~~ most of its sand..."
b) Page 77, last paragraph: "If left unmanaged, the bluffs surrounding Carmel Bay would progressively erode from the impact of winter storm waves, ~~and from~~ surface drainage, and other steady and episodic erosion processes.
c) Pages 77-78: "Erosion of Carmel's bluffs is quite variable along the shoreline and ~~is~~ includes both steady erosion and episodic events."
d) Pages 78, second paragraph: Change the reference to Figure 9.7a to Figure 9.6.a.

33. The "Seawalls and Retaining Walls" bullet on page 78 shall be changed as follows:

"...Thus far, anecdotal evidence suggests that the accelerated loss of beach sand that is often associated with seawall construction does not generally appear to be occurring along Carmel Beach. This may partially be due to the unique natural sand transport process that is characteristic of the Carmel shoreline or it may partially be due to the City's annual sand redistribution that artificially moves beach sand from the lower beach to the upper beach to cover revetments and to restore access at the foot of Ocean Avenue. Recent studies, however, appear to contradict the long-held assumption that the beach is not retreating here. In fact, at least one recent study indicates that the beach has actually been decreasing in width since 1949.[4] Further long-term study of beach levels is warranted to provide the best management for Carmel's beach...."

34. Replace LUP Figure 9.6a on page 83 with SMP Figure 8, and rename it as LUP Figure 9.6a.

35. Change title and legend of LUP Figure 9.6b on page 83 to "Sand Redistribution Sites."

36. Revise Policy P9-158 on page 98 as follows:

Obtain and maintain an accurate digitized map of the Carmel shoreline to develop the City's beach management and maintenance policies. Analyze historic beach trends using aerial photo analysis and other available tools. Update topographic information at least every 5 years and analyze shoreline changes to facilitate early identification of erosion hot spots, sand sediment losses/gains, migration of engineered revetments, and other long-term impacts.

37. Revise Policy P9-159 on page 98 as follows:

Place a series of permanent surveyed benchmarks inland of the bluffs running the length of Carmel Beach. The surveyed benchmarks shall be described in relation to National Geodetic Vertical Datum (NGVD) and identified through permanent

[4] A recent article in the International Journal of Marine Geology reported that the beach width at Carmel Beach has narrowed noticeably in the last 40 years (C.D. Storlazzi, M.E. Field / Marine Geology 170 (2000) 289 – 316).

markers, benchmarks, survey position, written description, reference numbers, et cetera to allow measurements to be taken at the same location in order to compare information between years.

38. Revise Policy P9-161 on page 98 as follows:

Protect public access, Scenic Road, and the aesthetic character of the coast by maintaining existing seawalls and engineered revetments ~~and by installing new protective structures when warranted.~~ When any existing seawalls or revetments need to be replaced or substantially reconstructed, review seawall and revetment design alternatives, as well as other beach management strategies and determine the best balance among objectives for access, aesthetics and protection of coastal resources (biological, geological, and recreational). Protect the natural character and features of the Del Mar Dunes by prohibiting the construction of any new shoreline protective structures ~~unless required for public safety, access or habitat preservation.~~ For the beach and shoreline area south of Eighth Avenue, only consider the installation of new protective structures after careful review of alternatives and when found to be ~~warranted~~ required for protection of existing structures and access ~~amenities~~ facilities from erosion risks. Mitigate the impacts of shoreline protective structures on visual quality and beach dynamics using landscaping, sand management and prudent engineering.

39. Revise Policy P9-162 on page 99 as follows:

Construct new shoreline armoring in areas previously unprotected only when required to protect existing structures in danger of erosion ~~or wave action~~ and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Require any approved structures to include native landscaping (screening), be visually compatible with existing seawall designs, address drainage, incorporate visual mitigation, sand coverage for revetments, and golden granite facing for seawalls.

40. Add two new policies following P9-162 on page 99 as follows:

Modification of existing shoreline structures shall adhere to the same standards for establishing need, obtaining permits, as well as landscaping, visual impacts, drainage and design as new seawall projects.

Any project (including but not limited to repair, maintenance, expansion, modification, or replacement) involving the shoreline armoring structure that extends along the Carmel Beach bluff southeast from the mouth of Pescadero Creek shall require the facade to match City-maintained shoreline armoring structures located along the Carmel Beach bluff south of 8th Avenue.

41. Revise Policy P9-165 on page 99 as follows:

Evaluate the storm-water outfall system for purposes of reducing impacts to the beach environment. Develop plan and identify~~Consider~~ options to ~~modify~~ consolidate and/or remove outfalls from the beach and replace or retrofit storm

drains with filters or treatment devices to reduce impacts on the shoreline environment.

42. Revise Policy P9-167 on page 99 as follows:
Prohibit any construction of substantial or permanent structures on the beach or within Carmel Bay except where required to protect existing structures in danger from erosion ~~for public health, safety, access or maintenance~~. Require design review for any structure proposed and minimize conflict with the scenic and aesthetic character of the shoreline environs through such review.

43. Revise Policy P9-169 on page 100 as follows:
Prohibit the placement of loose rock on the beach except where such rock is placed as part of a revetment allowed to protect an existing structure in danger form erosion. When any part of a rock revetment migrates from an engineered structure reposition it to maintain engineering stability or remove it from the beach.

44. Revise Policy P9-170 on page 100 as follows:
Protect the flat area/tidal zone of the beach for recreational use and ~~to the extent feasible,~~ avoid shoreline protective structures that reduce the amount of beach area available for public recreation.

45. Add new policy following P9-170 on page 100 as follows:
Evaluate the potential to replace existing revetments with faced vertical seawalls or seawalls designed to mimic the natural bluff face, to reduce sandy beach area coverage and the need for sand bulldozing. All replacement structures must be found compatible with the area aesthetic without introducing seawalls of significant height. Where the bluffs are very high and a very tall seawall may be required, consider a series of stepped, vegetated tiers supported by walls.

46. Revise Objective O9-29 on page 100 as follows:
Explore alternatives ~~for~~ to maintaining the sand elevation at the foot of Ocean Avenue to ~~facilitate~~ ensure public access and to ~~. C~~cover with sand all exposed engineered revetments along the length of Carmel Beach.

47. Revise Policy P9-171 on page 100 as follows:
Each spring inspect the volume of sand at locations along the backshore and determine if it is appropriate and timely to reestablish the sand to a higher elevation. The use of heavy equipment is authorized for redistributing beach sand to rebuild the dunes and cover revetments. Minimize impacts on beach encroachment and public access and protect public safety during this process.

48. Revise Policy P9-173 on page 101 as follows:
After each ~~ten~~five-year period of monitoring beach sand elevations (beginning at 2005), review all available data and make preliminary determinations regarding the

effects of seawall structures and sand redistribution activities. If the results of the City's beach monitoring program indicate that the beach has been losing sand over time~~warranted~~, investigate options for beach nourishment using offshore deposits or other sources that match Carmel Beach sand to replenish the beach and protect its width. The beach nourishment program shall at a minimum: 1) identify potential sources of beach quality sand; 2) include testing and screening for determining the acceptable quality and quantity of beach material; 3) identify placement locations; 4) establish placement methods and any restrictions on work timing or methods.

49. Revise Policy P9-174 on page 101 as follows:
Maintain Carmel Beach as a public recreational resource. If the results of the City's beach monitoring program ~~conclude~~ indicate that the beach has been losing sand over time, develop, implement, and then further monitor and evaluate a beach nourishment program to maintain or increase the available volume of sand.

50. Revise Policy P9-176 on page 101as follows:
Where unavoidable, ~~Mitigate or~~ minimize and mitigate all impacts to both marine and terrestrial resources when performing sand redistribution.

51. Delete Appendix B, the Shoreline Management Plan, from LUP.

52. Add new heading and policy on page 97 as follows:
Hazards Prevention

New development shall minimize risks to life and property, assure stability and structural integrity over the life of the development, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area.

WATER POLICIES

53. Delete policy P9-36 on page 38: ~~Maintain priorities for water allocations based on the General Plan/Coastal Plan. Give highest consideration to residential uses, including residential lots of records, and to Municipal projects that serve the broader community over other types of uses in the event water supplies are too limited to serve all forms of potential development.~~

54. Replace policy P9-36 with new policy on page 40: Available water shall remain allocated to existing priority uses, including ~~coastal dependent uses,~~ 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.

55. Revise policy P9-43: Establish priorities for ongoing water use in the event that further reduction of water consumption is required (e.g. during droughts or State-ordered cutbacks). ~~Give highest priority to residential uses and essential services.~~

56. Delete policy P9-42: ~~Analyze the potential net increase in water demand that may be generated by any proposed change and/or intensification in land use. Prohibit the approval of any development application if water for the proposed type of project is unavailable within the allocation.~~

57. Add new policy on page 41: Applications for new development shall demonstrate an adequate public (i.e., publicly-managed) water supply (e.g., the Cal-Am / MPWMD system) to support the proposed development. Private water supplies are prohibited to serve existing and new development.

Applications for new development shall not be filed without a City determination that (1) no new water is required to serve the new development; or (2) there is unallocated water available in the City's allocation from the Monterey Peninsula Water Management District to support the new development. This determination shall include an evaluation of the proposed development's water demand, based on MPWMD's water unit value system. All water transfers and corresponding retirements, if any, shall be described and agreed to prior to any City determination.

Prior to the commencement of construction of new development, evidence of water service, in the form of a water use permit from the Monterey Peninsula Water Management District, shall be provided to the City Planning Department.

58. Add new policy on page 41: Public desalination facilities may be permitted provided that its capacity does not exceed demand for additional water (or replacement water, where the source of the water replaced will no longer be used) based on planned build-out and MPWMD's water use formulas and all adverse environmental impacts are fully mitigated.

59. Revise policy P9-40 on page 41: Use appropriate vegetation for all public right-of-ways. Require drought-tolerant plants for at least 75% of the commercial and residential landscaping n each development site. ~~Encourage~~ Require the use of native plants in all landscape~~s~~ plans for new development.

WATER QUALITY

60. Revise Policy P9-348 on page 125. Provide development guidelines and permit conditions which: Limit impervious surfaces and the connection of multiple impervious surfaces; implement simple infiltration techniques throughout drainage areas to efficiently manage storm water; infiltrate runoff into the soil, retain runoff for slower release and convey runoff slowly through vegetation; employ treatment controls to capture and treat the polluted runoff before it enters the city's storm drain system or receiving waters; design structural BMPs to meet the 85th percentile storm event and assure ~~in~~ compliance with the NPDES Phase II permit.

61. Revise Policy P9-356 on page 126. Post-construction structural BMP's should be designed to treat, infiltrate, ~~or~~ and filter the amount of stormwater runoff produced by all storms up to and including the 85th percentile, 24-hour storm event for volume-based BMP's and/or the 85th percentile 1-hour storm event for flow-based BMP's. ~~per the requirements of the City's NPDES permit.~~

ESHA

62. Revise cited policies P9-218 , P9-220 in Appendix D Forest Management Plan to be consistent with policy P9-218 in the Coastal Resources chapter as follows:

P9-218 Permit the ~~Forest, Parks and Beach Director~~ City Forester to act on requests for the removal and pruning of all trees growing on public and private property.

P9-220 Permit the ~~Forest, Parks and Beach Director~~ City Forester to apply special procedures for tree removal and pruning during emergencies.

63. Add a note to the Table of Contents of Appendix D: Forest Management Plan:
A. Municipal Code*

*: Note these citations to the Municipal Code are illustrative of the Code in effect prior to certification of the Coastal Implementation Plan by the Coastal Commission. Please consult the certified portions of the Municipal Code for the current regulations.

III. FINDINGS AND DECLARATIONS

The Commission finds and declares as follows:

A. Background: History of the Local Coastal Program

The City of Carmel-by-the-Sea is located on the Monterey Peninsula and is entirely within the Coastal Zone. It is relatively small (1 square mile approximately) and has a population of roughly 4,500. The City fronts on Carmel Bay and has a world-renown white sandy beach running along its entire, approximate one and one-half mile length. The City also has a unique community character that is described in detail in the next finding.

Carmel first commenced work on its local coastal program in 1978. The first land use plan was submitted in early 1980 and denied by the Regional Coastal Commission on April 14, 1980. The City Council revised the Land Use Plan and resubmitted it on November 26, 1980 with amendments on January 5 and February 2, 1981. The Coastal Commission certified the LUP as submitted in part and denied then certified with suggested modifications in part (private Beachfront area), on April 1, 1981. Again, the City chose not to accept the modifications and to resubmit a new Land Use Plan. This

second resubmitted plan was denied and certified with suggested modifications regarding demolitions and historic buildings on April 27, 1984. The City did not accept the suggested modifications. There was a hiatus in work on the local coastal program until 1988 when a new draft was only partially completed, then sidetracked. In the 1990s several documents were prepared on specific topics that have been incorporated as Land Use Plan appendices. Work on the text of the three Land Use Plan chapters recommenced in earnest in 2000, in part funded by a Coastal Commission grant. These three chapters are based largely on the City's General Plan, which had been amend over the years. The resulting third re-submittal, consisting of an introduction, the three chapters, and six appendices, is quite different from its early 1980 predecessors.

The document was delivered to the Coastal Commission on December 20, 2001, but could not be filed because not all of the required supporting information was received. In the intervening period City and Commission staff have worked closely on modifications to the City submittal. On November 12, 2002 the City Council amended its submittal to incorporate numerous mutually-agreeable modifications. This amended land use plan re-submittal was filed on November 15, 2002. The City has also resubmitted a Coastal Implementation Plan that has not yet been filed.

The standard of review of the land use plan is Chapter 3 policies of the California Coastal Act. The following findings briefly describe the re-submittal in terms of its conformance to Coastal Act policy groups and then support the suggested recommendations.

B. Community Character/Visual

Coastal Act Provisions

One of the primary objectives of the Coastal Act is the protection of scenic and visual resources, particularly as viewed from public places. Section 30251 requires that development be sited and designed to protect views to and along the ocean and other scenic coastal areas. New development must minimize the alteration of natural landforms. This policy also requires that development is sited and designed to be visually compatible with the character of surrounding areas. Where feasible, development shall include measures to restore and enhance visual quality in visually degraded areas.

Another objective is to protect the character of special communities. Section 30253(5) requires that development protect special communities which because of their unique character are popular visitor destinations for recreational uses.

Coastal Act Policies:

Section 30251 of the Coastal Act states:

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

Section 30253 of the Coastal Act states:

New development shall...(5) Where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational uses.

Section 30244 of the Coastal Act states:

Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

Introduction/Background

It is often stated that Carmel, along with such other distinct communities as the town of Mendocino, is one of the special communities for which Coastal Act section 30253(5) was written. Carmel is a very popular visitor destination, known as much for the style, scale, and rich history of its residential, commercial, and civic architecture, as for its renowned shopping area, forest canopy and white sand beach. As a primarily residential community, the web of residential development in Carmel plays a key role in defining the special character of the City, as various architectural styles reflect the historical influences that have existed over time. Carmel is distinctly recognized for its many small, well-crafted cottages, informal streetscapes, and forested landscape. These modest, sometimes quaint residences are associated with the era in which Carmel was known for its resident artists and writers, and functioned as a retreat for university professors and other notables. Homes were nestled into the native Monterey pine/Coast live oak forest, on a grid of streets that yielded to trees more than to engineering expediency.

Early development was greatly influenced by the Arts and Crafts movement, which stressed the use of simple designs and natural materials—quite unlike the extravagantly detailed architecture of the earlier Victorian period. Several European Revival styles became popular in the 1920's and 1930's. The introduction of more modern styles followed post-WWII. Many of Carmel-by-the-Sea's small cottages exhibit

fine craftsmanship as seen in the varied architecture of Carmel. Local builders embellished their work with detailing and individual style creating a unique and appealing building design. Underlying this architectural diversity, are environmental influences (i.e., trees, topography, exposure to sunlight) and patterns of scale and form that consistently reappear to establish Carmel's character.

Historically, most buildings in Carmel had simple forms and were relatively small in scale in relation to the size of their lots and natural surroundings. As reported in the City's Design Traditions project and confirmed in the Commission's analysis of coastal development permit data, homes were small, one to one and one-half stories, averaging approximately 800 square feet to 1,500 square feet. Constructed primarily of wood, most had siding of shingle, vertical board and batten or horizontal clapboard. Roofs were gabled and covered in shingles. Many could be considered vernacular rustic cabins, while others exhibit stylistic influences of the Craftsman movement. The established character of Carmel can be described by the following:

Architecture	Variety of Craftsman-styled cottages.
Size	Smaller structures averaging approximately 1,200 sq ft on 4,000 sq ft lots.
Scale	Small in relation to lot size and natural environment.
Height	Single-story cottages often less than 18 feet.
Setbacks	Generous setbacks often exceeding minimum allowance.
Sensitivity	Small cottages often well screened from streetscape.
Streetscape	Informal meandering roads, unimproved rights-of-way often supporting trees and other vegetation.
Natural Environment	Monterey pine and Coast live oak dominated forest.
Land Use	Primarily residential with a strong commercial core, several public parks including 22 acre white sand beach and recreational blufftop path.

This is the context for Carmel's community life and its built character.

1. Character Resources

Consistency with the Coastal Act

There are several components that together make up Carmel's community character, including the assortment of small eclectic cottages built in the early 20th century. This aspect of community character can be further broken into two related types of resources: Character Resources and Historic Resources. Character Resources are homes that do not meet National or State Register criteria for historic resources, but nonetheless embody attributes identified in Carmel's Design Traditions project as strongly contributing to the City's established character. It is the cumulative loss of these "character resources" that is contributing to the overall sense of loss of Carmel's community character. The issue has come to the forefront of Commission concern in recent years because: 1) the special character of this residential coastal community is considered a unique asset of statewide and national significance, and 2) the volume of requests for coastal development permits which affect community character is substantial. This issue was also identified in local public workshops as one of the primary concerns affecting the community at this time. As a result, the City dedicated the first chapter of the LUP to addressing the issue of community character and its many components.

Much of the background text in the submitted LUP document (pp. 7 –13) is dedicated to describing the natural setting, subdivision patterns, layout of public roads, arrival of Bohemians, and early architectural influences. It generally describes the turn-of-the-century cottages as simple, modest homes set amidst a forest landscape. Recognizing that some amount of development or re-development of these small cottages will be necessary, the LUP maps a two-prong strategy for dealing with historic resources and structures that are not historic (i.e., character resources). Character resources will be handled through a process of *conservation*, that allows for new development and/or re-development as long as it is consistent with the established character of the neighborhood. On page 22 of the Land Use Plan it states:

> The City implements conservation of its character through its Design Guidelines for the residential district, the commercial district, and for the public way. The overall character of the City can be conserved through appropriate polices related to the urbanized forest, roadway design and building design.

The policies, goals, and objectives, directing development, and re-development of Carmel's aging stock of residential homes are stated on pages 35-38 of the re-submitted Land Use Plan. The submitted LUP provides an adequate amount of policies protecting the existing land use and subdivision patterns in the residential and commercial districts. The first 12 policies are dedicated to maintaining the status quo in this area. The next 10 policies fall under the heading of Residential Development and mostly establish a process for evaluating development. However, there is very little policy devoted to specifically identifying and protecting community character. Thus, as submitted, the City's LUP policies do not adequately identify the elements of character or provide enough specificity to protect the residential character of this special community. Specificity is important precisely because of the many factors that intertwine to define community character. Objectives and design principles that are also

well articulated will provide the necessary context to both the development community and the Coastal Commission that new development is protecting community character.

During the course of developing its Design Guidelines, the City's Design Traditions Project identified all of the elements of the established character in Carmel. Suggested recommendations and policies were developed to preserve and maintain those qualities. Many of those recommendations, though, did not carryover into LUP policies and/or current zoning standards. The LUP states that its conservation efforts are implemented through the [Residential] Design Guidelines. However, to be effective, it is important that clear guidelines be *in* the LUP. In the past several years, the Commission has reviewed numerous residential demolitions and rebuild proposals that illustrate the cumulative changes occurring in Carmel. In general these include:

1) Small cottages, usually 1,200 square feet or less, are being supplanted by 1,800 square foot homes, the maximum allowed by current zoning standards.

2) One-story structures are often replaced with two-story structures.

3) Mass, site coverage, and height are increasing substantially.

4) Open space, setbacks, and forest resources are decreasing.

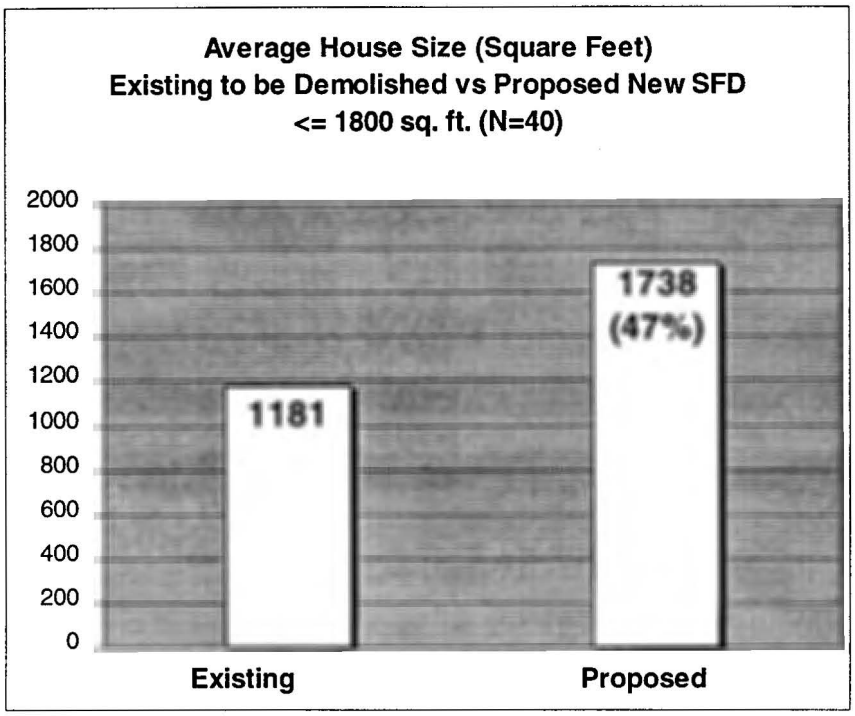
The City has developed a strong set of Residential Design Guidelines that capture the important aspects of Carmel's character. The conservation of character resources could be achieved if the City's Design Guidelines were made to more meaningfully thus apply. One way to achieve this is to capture the essence of the policies and recommendations taken from the Guidelines and place them into the Land Use Plan. The City's Residential Design Guidelines more specifically address the treatment of size, massing, coverage, open space, streetscapes, and the forest landscape than the City's LUP submittal. Primary consideration is given to compatibility with the design traditions of Carmel, maintaining the urban forest character, promoting buildings that are in scale with that context, while encouraging diversity in design. The Commission recommends that the LUP be modified to incorporate various Design Guidelines, while still allowing for discretion by planners in building design.

Other aspects of character not addressed by the re-submitted LUP are the standards for floor area ratio and site coverage. The increase in floor area allowed by the City's current zoning standards has slowly been eroding the small scale aspect of character, as the City's older housing and commercial stock is demolished to make way for new, usually larger in size and scale, developments. According to the Commission's permit tracking database, approximately 170 projects involving demolition have received coastal development permit authorization in Carmel since 1973. Of those, 23 CDP's were issued before 1990. Since 1990, roughly 13 residentially related demolition project applications per year have been received; nearly all of these have been approved. Other than the three-year period from 1992 – 1994 when a total of 13 applications were received, the number of development proposals in Carmel had been rising fairly steadily

until 2000. However, in the year 2000 alone, the Commission received 44 applications; a full quarter of all applications received by the Commission for development in Carmel in the last decade. Of these 44 applications received in the year 2000, 33 of these involved some form of demolition, rebuilding and/or substantial alteration of residential structures. In 2001, 24 applications were received; 16 of these involved residential demolitions/alterations. Thus far in 2002, 17 applications have been received; 12 of these involve residential demolitions/alterations. Clearly the trend for demolition/rebuild/substantial remodel has been magnified in current years as demand for Carmel properties has outstripped the limited supply represented by the approximately 3,200 parcels within the boundaries of this small town. As this trend has continued, it has become increasingly difficult to conclude that the demolition of residential structures is not significantly changing the unique character of Carmel.

Staff recently evaluated a sample of these projects (40 projects), which revealed that the average size of the small cottages to be demolished was approximately 1,180 square feet, whereas the replacement structures approved were just under 1,740 square feet on average –a 47% increase in size (See Figure 1). Staff also found from the sample that nearly 60% of the residential demolition and rebuilds involved the replacement of a one-story structure with a two-story structure. This data analysis is consistent with the results of the City of Carmel's own Design Traditions project released in October 1997. That project evaluated the recent development trends in the City from January 1990 to May 1997 and found that 1,192 building permits were issued for development in the residential district during that time. This represents roughly 180 permits per year. Of those 1,192 building permits issued, only 242 (20%) received design review; 950 did not. The report did not specifically break down by type of development the 950 building permits issued without the benefit of design review, however it did note that the permits were issued for alterations, repairs, and remodels. Of those receiving design review, 128 involved substantial alterations, 49 involved demolitions with a single replacement home, 14 involved demolition with two or more replacement homes, and 39 involved new construction on vacant lots. The vast majority of those projects other than substantial alteration were for new two-story homes. 88% or 90 out of 102 new homes were two-story. The Design Traditions project also found that the established pattern of development was of larger homes on larger lots and smaller homes on small lots. Historically, given the common sized 4,000 square foot parcel, on average houses ranged in size between 800 and 1,500 square feet.

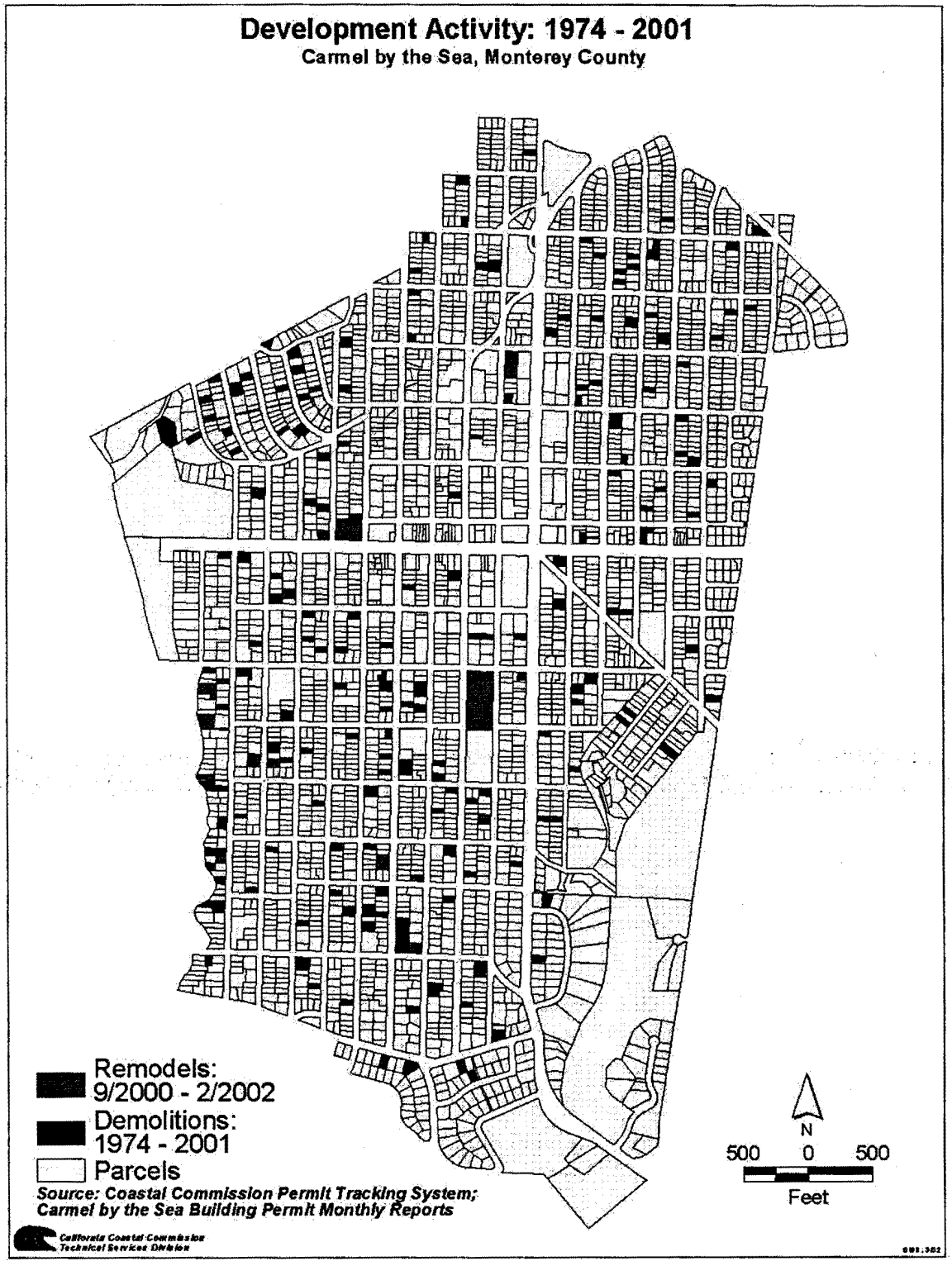
Figure 1. Carmel, Changes in House Size



Since mid-1997, the City has continued to experience unprecedented development activity during one of the most prolific economic expansions in modern times. Staff evaluated building permits issued by the City during one 18 month period at the height of the boom (i.e., 9/2000 – 2/2002) and discovered that more than 80 substantial alterations and remodel permits were issued; 55 of those involved development in excess of $50,000. Though not technically considered demolitions (according to the City's current definition), these types of construction activities have significantly altered the character of existing structures and neighborhoods, but have been excluded from the coastal development permit review process. Please see Figure 2.

Figure 2 illustrates the scope and magnitude of the development activity occurring in Carmel. Of the approximately 170 demolition permits issued by the Commission, only 128 are represented on the figure. Additionally, as noted above, the data from the City building permits monthly reports are from one 18-month period.

Figure 2: Development Activity: 1974 - 2001



This information shows that a significant number of smaller cottages have been demolished or altered or remodeled in a relatively short period of time. Furthermore, the replacement homes and substantial remodels are resulting in larger floor area, mass, and site coverage. The streetscapes and spatial relationships are changing, the forest prominence as a defining character element is declining, open space is disappearing, and more traditional architectural styles are being supplanted by modern eclecticism. There are also as yet unmeasured impacts on the watershed functions of the forest including absorption and conveyance of storm water and filtration of pollutants. Considering the trend of demolition, substantial alteration, and remodel over the past 10 years, it is becoming evident that this development activity is having a significant cumulative adverse impact on the unique character of Carmel and the LUP, as submitted, does not adequately address this trend. As such, it is inconsistent with section 30253 of the Coastal Act.

Modifications

As discussed above, policies addressing the treatment of size, mass, coverage, open space, streetscapes and the forest landscape are critical to maintaining and preserving community character in Carmel. The re-submitted land use plan policies does not fully encapsulate each of these character elements nor is it specific enough to ensure that they would be preserved. Thus, the Commission recommends the following modifications, adapted from the City's Design Guidelines be incorporated into the submitted Land Use Plan:

Modification 1 New residential development shall maintain Carmel's enduring design principles of variety, modesty, and simplicity, and shall draw from and contribute to its neighborhood by generously providing for open space and preserving the City's traditions of simple homes set amidst a forest landscape.

Modification 2 New residential development shall be similar in size, scale, and form to buildings in the immediate block and neighborhood. Minimize the mass of building as seen from the public way or adjacent properties. Require building mass of new development to relate to the context of other homes in the vicinity. Larger building masses should be divided into forms that are similar in scale to houses see in the immediate neighborhood.

Modification 3 Require preparation of a preliminary site assessment that includes assessing the block and neighborhood as well as the resource constraints of the site prior to submittal of design plans for new development or projects that will alter the building footprint, add a second story or involve excavation. A site plan shall be prepared by a qualified professional and illustrate topography, drainage features, existing trees and structures, street edge, and existing conditions on immediately adjacent properties. Require a Forest Enhancement and Maintenance Plan during the site assessment. The Plan shall address the impacts of the proposed development on the existing forest

conditions of the site. Site plan designs shall recognize the constraints of the land and work within these limitations. Minimize the extent of excavation and fill on a site; new development shall follow the natural contours of the site.

Modification 4 Maintain and enhance the informal, vegetated, open space character of the City's right-of-way. Trees in the right-of-way shall not be removed to provide parking. With the exception of driveways, new paving in the right-of-way is prohibited.

Modification 5 Prohibit the removal of significant trees (i.e., greater than 12" dbh) unless it would prevent a reasonable economic use of the site or pose a threat to health and safety. Locate buildings and other site structures to avoid removal and pruning and otherwise minimize damage to existing significant trees. Avoid impacts to trees by avoiding/minimizing impacts to the root protection zone (i.e, within the drip-line). Establish continuity of landscape elements throughout each neighborhood. Replace trees removed for construction with several saplings. Require that they be nurtured until well established.

In order to effectively implement the Design Guideline standards, the Commission is recommending that all approved projects meet the following standard:

Modification 6 All demolitions, remodels, and substantial alterations shall be consistent with the following findings:

- The design uses simple/modest building forms and roof plans, and a restrained employment of offsets and appendages consistent with neighborhood character.
- Mass of the building relates to the context of other homes in the vicinity.
- The development is similar in size, scale, and form to buildings on the immediate block and neighborhood.
- The development does not require removal of any significant trees (> 12" dbh) unless necessary to provide a viable economic use or protect public health and safety. All development will be setback a minimum of 6 feet from significant trees.
- The development will not lead to an increase in water use.

Additionally, in an earlier section of this report, it was demonstrated that the current zoning standards for floor area ratio and site coverage were contributing to the erosion of community character through the approval of larger homes relative to the established

size and scale of Carmel's small cottages. The current standards allow 1,800 square feet of floor area on single 4,000 square foot lots. This is roughly 50% greater in size than the average existing cottage and has resulted in adverse effects on site coverage, setbacks, massing, and the urban forest. Site coverage for a single-story residence including patios, driveways, and walks could exceed 60% of a 4,000 square foot lot. At this size, homes no longer are subordinate to the natural environment but rather they become the dominant feature of the site, often overriding other features such as trees and topography.

To remedy this, the Commission is recommending that the above grade floor area ratio be reduced to 1,600 square feet on 4,000 square foot lots and structural coverage limited to 40% of the site. Other site coverage (i.e., non-structural) would remain at 10% for a 4,000 square foot lot. This allows for a reasonable amount of re-development without significant adverse impacts. The proposed above-grade FAR is roughly one-third greater than the average established size of existing cottages and represents about an 11% reduction in the current floor area standard. Limiting above-grade floor area will increase the amount of open space on these small lots by 200 square feet, providing extra room for trees and other vegetation while avoiding the extra mass associated with the larger home. There will be fewer impacts to the streetscape and less pressure on adjacent small cottages to re-develop. New homes could, of course, be greater than 1,600 square feet with the inclusion of some basement floor area, though this would be allowed only if the proposed design met all the other criteria identified in the LUP (e.g., preservation of trees, etc). There is also a precedent for limiting floor area to 1,600 square feet. Categorical Exclusion Order E-77-13 under which the City currently operates, excludes from the permit requirements of the Coastal Act construction of residential homes in Carmel 1,600 square feet or less. The Commission found at the time of the adoption of the order that development of single-family residents 1,600 square feet or less would not result in any significant adverse impacts. Overall, to achieve consistency with section 30253, the Commission recommends the following modification to the City's submitted LUP document:

> **Modification 7** Limit above grade floor area on single lots (i.e, 4,000 square feet) to a maximum of 1,600 square feet. Projects with less above grade square footage shall be preferred. Structural coverage shall not exceed 40% of the site. Total site coverage (structural and other impervious coverage) on 4,000 square foot lots shall not exceed 50% of the site. Locate open space so that it visually links with adjacent properties.

Thus, with the above required modifications, the Commission finds that the LUP Community Character policies are consistent with section 30253 of the Coastal Act.

2. Historic Resources

Background

Central to the issue of protection of community character in Carmel is the treatment of historical resources. A large part of the community character debate has centered on the loss of potentially historical homes via demolition and redevelopment. Historical resources, like the character cottages described above, embody the attributes and design traditions recognized in the City's Design Traditions Project as providing "character" to the community. However, historical resources are further distinguished from their character resource counterparts for their contribution to the broad patterns of local history. In California, criteria established in the California Register of Historic Resources typically are used to determine historical significance. The criteria for historical significance ranges from architecturally significant historic buildings, to representing the work of a master builder, or to being associated with important persons or events in Carmel's history. It also includes street features, landscaping, and both prehistoric and historic archaeological resources. The City has identified and adopted a Historic Context Statement (See Appendix F) that provides additional context for establishing historic significance under local criteria.

Historic preservation is a growing concern nationwide as redevelopment of our aging cities and towns intensifies. In Carmel, a rapid escalation in the value of property has led to an unprecedented amount of acquisitions of existing small cottages and requests for permits to demolish and redevelop the lots with larger modern homes. This has triggered a vociferous response by members of the community to convince the City to establish and implement a historic preservation program to protect historic resources from being demolished and guide future redevelopment of non-historic resources in a manner that is consistent with the established character of the community. In large part, this single issue is driving the City's most recent effort at LCP certification. The City of Carmel has responded by submitting a program for preserving historic resources. The policies implementing this program are presented on pages 44 – 49 of the resubmitted Land Use Plan.

Carmel LUP as Submitted

The City's amended LUP submittal includes a variety of important policies to promote the identification and preservation of historic resources. This includes establishing procedures for identifying historic resources, updating the City's Historic Context Statement, educating the public about historic preservation, applying the Secretary of Interior Standards and Guidelines to proposed modifications of historic resources, ensuring rehabilitation of historic resources is consistent with the character of the City and so forth.

Coastal Act Consistency

The Commission recognizes that the loss of the City's historic cottages has the potential to adversely impact community character and thus the recreational opportunities represented by them. Coastal Act section 30253(5) requires that special communities such as Carmel be protected against the erosion of its character through policies that guide development and redevelopment in a manner consistent with the established character of the village.

In particular, demolition and/or substantial alteration of existing historic homes and cottages result in the loss of the unique character, which they individually represent and which cumulatively, form an important part of Carmel's character. Once a house has been modified, its character is forever changed –replaced by something that may or may not be consistent with the established character of the block, neighborhood, or City. As discussed in the Character Resources section above, the volume of requests for demolitions in recent years has increased substantially, leading to concerns that the character of the community may be slipping away.

As briefly summarized above, Carmel's resubmitted LUP contains a comprehensive set of historic resource policies design to promote the identification and preservation of historic resources including buildings, structures, objects, sites, districts, and archaeological resources (discussed in section 4 below). The primary objectives of the historic preservation element (policies) are:

- Identify and preserve historic resources;
- Incorporate historic preservation principles into the City's design review process

Although, the policies in the resubmitted LUP provide an initial framework for establishing a historic preservation program, they do not adequately achieve the objectives identified above consistent with 30253 of the Coastal Act. Modifications necessary to bring the historic resources element into conformity with 30253 are discussed below.

Modifications

As discussed above, identification and preservation of historic resources is critical to maintaining and protecting community character in Carmel. The City has submitted a historic preservation element that provides general guidance but it is inadequate to carry out the specific requirements of the historic preservation program.

Specifically, the City's submittal is silent on the creation of a Historic Preservation Board that performs the ministerial functions of the historic preservation program. Though

there is reference to the Board in the policies (and the submitted IP contains some detail on the HPB), there is no policy requiring its creation or establishing qualifications for its members. Modification 24 requires the establishment of the Historical Preservation Board. This is important to acknowledge and provide for the heightened review of historic resource issues (Modification 21) by a specialized review body.

Over the course of the past twenty years, a number of historic resource surveys have been prepared and resulted in the compilation of an inventory of potential historic resources. These "lists" have been used by the City of Carmel from time to time to assist planners and city officials in making decisions. These inventories were created by registered Architectural Historians, which evaluated the structures for local historic resource significance. Although, there is still some debate as to the validity and current status of the inventories, they do provide additional context for the City and newly created Historic Resources Board in determining historical significance. Modification 10 requires that all resources previous surveyed and evaluated that meet the criteria for historical significance be incorporated/consolidated with the newly created Carmel Inventory of Historic Resources.

The resubmitted LUP requires that the City's Historic Context Statement be updated periodically. The vintage Statement was developed in 1997. Since that time, at least one partial reconnaissance survey of the City has been performed potentially identifying additional context for Carmel's established character. Modification 11 requires that the Context Statement be updated every 5 years to keep pace with changes and to assure that those updates are submitted as LCP amendments.

P9-64 of the resubmitted LUP established the procedures for determining the Integrity of a potential historic resource and includes employing the original building plans or early photographs. There are other materials available to assist in the determination of Integrity including literature reviews, architectural files, land records, Sanborn maps, etc. Modification 13 broadens the scope of materials to used in making this determination. Additionally, modification 13 clarifies that a physical inspection be conducted by a qualified historic preservation professional.

To qualify as a historical resource under criteria 3 of the California Register of Historic Resources, a structure must "embody the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values." P9-65, as submitted, places additional restrictions on meeting these criteria. In the field of Historic Preservation the criteria for determining the significance of a resource are based in such factors as association with historical events, association with significant persons, embodiment of distinctive types, historic periods, and methods of construction, etc. The California Register, which is managed by the State Office of Historic Preservation, has encapsulated these into four criteria for historic significance: resources that (1) are associated with events that have made a significant contribution to broad patterns of local or regional history or the cultural heritage of California or the United States; or (2) are associated with the lives of

persons important to local, California or national history; or (3) embody the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; or (4) has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

As submitted the Carmel LUP adequately addresses some of these criteria, particularly in its grounding of their interpretation in the adopted Historic Context Statement. However, the City's submittal inappropriately limits the application of category 3, above, by asking that a higher degree of integrity be shown. The LUP already provides that integrity be shown for any resource to be considered historic and there is no good basis for requiring a higher standard for category 3 as distinct from the other categories. In addition, and related, there is insufficient attention in the LUP to the significance criteria for category 3, above. Although it is appropriate to further elaborate on what types of resources may be considered significant under the general category 3 language, Modification 14 further clarifies that resources may be significant if they embody distinctive characteristics in such a way as to be a good example of these characteristics as reflected in the Context Statement for Carmel. Thus, the degree to which a structure represents the characteristics important to any particular historic context is an important and well-accepted criteria for historic significance. Indeed, in a community such as Carmel, where the character is defined by the cumulative look and feel of the built environment, particularly concerning particularly periods, types, and styles of architecture, it is important to recognize the role that category 3 plays in defining this cumulative community character. Finally, as already acknowledged by the City's LUP, structures that are rare are important to acknowledge, and should qualify for listing under category 3.

The Commission recommends deleting P9-67 (Modification 15) because it is not necessary for the LCP, particularly in light of other policies that address identification of historic resources. It also addresses CEQA review, which is not appropriate in the LUP.

A minor modification (Modification 16) to P9-68 is needed to clarify the intent of this policy.

Similarly policy P9-70 was modified to recognize the statutory requirements of the Coastal Act for issuance of a coastal development permit and to recognize the City's LCP as the standard of review for development that affect historic resources. (Modification 17).

Policy P9-79 was changed from a policy to an overriding goal of the element and revised to restate the purpose of the City's mission. "Protect and enhance historic resources. Ensure that City ordinances, development review policies...." (Modification 18)

Similarly, policy P9-80 of the submitted LUP was changed from a policy to an objective of the program. A small revision was made to clarify the intent of the program

consistent with section 30253 of the Coastal Act. (Modification 19)

As noted in the background and coastal act consistency sections above, the loss of character has been facilitated by approvals of demolitions and substantial alterations over the years. The LUP submittal does not include a policy requiring that these types of development be reviewed for potential impacts to historic resources. Modification 22 requires review of all demolition and substantial alterations for impacts to historic resources. Additionally, modification 20 requires all buildings older than 50 years to be evaluated for historical significance as required by the California Register of Historic Resources.

Finally, one aspect of a successful historic preservation program are the incentives granted to homeowners to preserve and maintain their resources. The current submittal of the LUP is silent on establishing incentives to promote historic preservation. Modification 25 is a new goal establishing historic preservation incentives. Modification 26 is a new policy outlining the various incentives available to homeowners for historic preservation.

With Modifications 9 - 26, the Commission finds that the LUP historic resource policies are consistent with Coastal Act section 30253(5).

3. Scenic Resources

Carmel is one of those special communities for which Coastal Act section 30253 was written. Though much is made of the eclectic cottages in the forest and brilliant white sand beach, world-renowned shopping, proximity to Pebble Beach and gateway to Big Sur, the LUP does not designate Carmel a "special community" worthy of protection. Modification 27 acknowledges the significance of City's unique character and designates Carmel a special community and highly scenic area.

Other than the need to protect character by through implementation of land use and landscape policies, the scenic views and resources of Carmel's beach, parks, and open space are adequately protected in the LUP. The re-submitted LUP proposes the adoption of policies that would impose an 18-foot height limit on houses that front North San Antonio and Scenic Drive (P9-18). Additionally, the City's tree and vegetation maintenance program policies require regular pruning to protect views to and along the coast as seen from Scenic Road and the blufftop path (P9-188). New development along Scenic Road, Junipero Avenue, and Torres Street at 3rd Avenue is required to protect the unique scenic quality and public views, minimize landform alteration, and be visually compatible with the character of surrounding areas (P9-201). The LUP also contains a general policy to preserve and protect areas, which due to their outstanding aesthetic quality, historical value, wildlife habitats or scenic viewsheds, should be maintained in permanent open space (P9-199). As such the resubmitted LUP policies are adequate to carry out the intent of Coastal Act section 30251.

4. Archaeology

This aspect of community character has likewise been adequately addressed in the City's LUP policies. The plan calls for the creation of an archaeological overlay district and standard reporting format for all archaeological documentation (P9-86). All development within the overlay is required to perform a phase 1 study to determine if significant archaeological resources are present (P9-87). If sensitive resources are found on a site, all available measures to avoid development shall be pursued (P9-88). The remaining policies require mitigation for impacts incurred during construction, monitoring, safe retrieval, collection and archiving, or preserving in-situ of all identified archaeological resources. All archaeological resource reports are to be transmitted to the Northwest Information Center as designated by the State Office of Historic Preservation (P9-89, 90, 91). As submitted, the archaeological resource protection measures and policies in the re-submitted Land Use Plan are consistent with Coastal Act Section 30244 for the protection of archaeological resources.

C. Public Access and Recreation

Coastal Act Provisions

A broad policy goal of California's Coastal Management Program is to maximize the provision of coastal access and recreation consistent with the protection of public rights, private property rights, and coastal resources as required by the California Constitution and provided in Section 30210 of the Coastal Act. Several additional policies contained in the Coastal Act, which are incorporated into the Land Use Plan, work to meet this objective. The Coastal Act requires that development not interfere with the public right of access to the sea (Section 30211); provides for public access in new development projects with limited exceptions (Section 30212); distributes access to mitigate against overcrowding (Section 30212.5); encourages the provision of lower cost visitor and recreational facilities (Section 30213); addresses the need to regulate the time, place, and manner of public access (30214); specifies the need to protect ocean front land suitable for recreational use (Section 30221); gives priority to the use of land suitable for visitor-serving recreational facilities over certain other uses (Section 30222); and requires the protection of upland areas to support coastal recreation, where feasible (Section 30223).

Coastal Act Policies

Section **30210** of the Coastal Act states that:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

The Coastal Act also requires that development not interfere with the public right of access to the sea in Section 30211:

> *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

Section 30212 of the Coastal Act provides for public access in new development projects with limited exceptions and provides for the distribution of parking over a wide area in Section 30212.5:

> *(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:*
>
> *(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,*
>
> *(2) adequate access exists nearby, or,*
>
> *(3) agriculture would be adversely affected. Dedicated accessway shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.*
>
> *(b) For purposes of this section, "new development" does not include:*
>
> *(1) Replacement of any structure pursuant to the provisions of subdivision (g) of Section 30610.*
>
> *(2) The demolition and reconstruction of a single-family residence; provided, that the reconstructed residence shall not exceed either the floor area, height or bulk of the former structure by more than 10 percent, and that the reconstructed residence shall be sited in the same location on the affected property as the former structure.*
>
> *(3) Improvements to any structure which do not change the intensity of its use, which do not increase either the floor area, height, or bulk of the structure by more than l0 percent, which do not block or impede public access, and which do not result in a seaward encroachment by the structure.*
>
> *(4) The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not seaward of the location of the former structure.*

(5) Any repair or maintenance activity for which the commission has determined, pursuant to Section 30610, that a coastal development permit will be required unless the commission determines that the activity will have an adverse impact on lateral public access along the beach.

As used in this subdivision "bulk" means total interior cubic volume as measured from the exterior surface of the structure.

(c) Nothing in this division shall restrict public access nor shall it excuse the performance of duties and responsibilities of public agencies which are required by Sections 66478.1 to 66478.14, inclusive, of the Government Code and by Section 4 of Article X of the California Constitution.

Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.

In addition, the Coastal Act encourages the provision of lower cost visitor and recreational facilities in Section 30213:

Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.

The Commission shall not: (1) require that overnight room rentals be fixed at an amount certain for any privately owned and operated hotel, motel, or other similar visitor-serving facility located on either public or private lands; or (2) establish or approve any method for the identification of low or moderate income persons for the purpose of determining eligibility for overnight room rentals in any such facilities.

Section 30214 of the Coastal Act addresses the need to regulate the time, place, and manner of public access:

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

(1) Topographic and geologic site characteristics.

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.

(4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.

(b) It is the intent of the Legislature that the public access policies of this article be carried out in a reasonable manner that considers the equities and that balances the rights of the individual property owner with the public's constitutional right of access pursuant to Section 4 of Article X of the California Constitution. Nothing in this section or any amendment thereto shall be construed as a limitation on the rights guaranteed to the public under Section 4 of Article X of the California Constitution.

(c) In carrying out the public access policies of this article, the commission and any other responsible public agency shall consider and encourage the utilization of innovative access management techniques, including, but not limited to, agreements with private organizations which would minimize management costs and encourage the use of volunteer programs.

The Coastal Act specifies the need to protect ocean front land suitable for recreational use in Sections 30220 and 30221:

Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

The Coastal Act also gives priority to the use of land suitable for visitor-serving recreational facilities over certain other uses in Section 30222:

The use of private lands suitable for visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation shall have priority over private residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industry.

Section 30223 requires the protection of upland areas to support coastal recreation, where feasible:

> *Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.*

Finally, the Coastal Act also facilitates public access by providing for public transit, alternative means of circulation and adequate parking in new development in Section 30252:

> *The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service, (2) providing commercial facilities within or adjoining residential development or in other areas that will minimize the use of coastal access roads, (3) providing non-automobile circulation within the development, (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents will not overload nearby coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development.*

Introduction/Background

The beach at Carmel-by-the-Sea is a popular tourist destination for visitors from foreign countries, all 50 states of the U.S., as well as for residents of cities and towns located in Central California. All 22 acres are held in public ownership and open 24 hours each day. In 2002, National Geographic Traveler magazine declared Carmel beach one of America's Best Beaches. At about one mile in length, the beach's white sands extend out below translucent blue waters into Carmel Bay. Wind-sculpted Monterey cypress trees line the shoreline. Views to the north are of the majestic rocky bluffs of Pebble Beach; the south vista is of Carmel Point and Point Lobos beyond. Above the beach on Scenic Road, a recreational trail system offers a unique public pathway experience as it meanders along the undulating bluffs. The decomposed granite pathway passes between Cypress tree and vegetated bluff outcrops and is complemented by nine vertical access stairways and a series of benches and overlooks. The trail provides a complementary experience to the sandy beach for individuals interested in enjoying the shoreline from the bluff.

Aside from its world-class beach, the City also maintains a handful of parks, preserves, and other recreational opportunities within its boundaries including Mission Trails Nature Preserve, Rio Park, Forest Hill Park, and the Carmel Mission. With the

exception of the Mission, these parks are generally undeveloped forest lands with Monterey pine and coast live oaks, though all contain a wide variety of vegetation and habitats. Most of the parks are developed to support passive and active recreational activities (e.g., hiking, nature study, etc). The Carmel Mission (Mission San Carlos Borromeo) is a state and federally-listed Historic Resource. It was originally constructed in the late 18th century and is an excellent example of a restored/reconstructed California Mission, which has the added importance of being founded by Father Junipero Serra. The Mission is open to the public and is the gathering place for a multitude of functions including weddings, masses, concerts and lectures, and as a historical museum.

Carmel-by-the-Sea is also world renown for its shopping. Ocean Avenue is the starting point for a multitude of art galleries, restaurants, jewelry stores, clothing shops, and bistros. The City's commercial core is dominated by ground floor retail shops often with second story visitor-serving accommodations. Hundreds of thousands of visitors each year come to Carmel to stroll through the village, shopping, eating, people watching, and maybe rub elbows or catch a glimpse of some of the town's most famous residents and visitors.

As alluded to above, the City of Carmel-by-the-Sea also provides an excellent amount of overnight visitor-serving accommodations. There are approximately 950 hotel/motel rooms within the city limits occupying roughly 50% of the land area in the business district. Accommodations range from elegant resort-like hotels to smaller whimsical bed and breakfasts. As noted above, most visitor-serving lodging resides in the business district around Ocean Avenue, though there are a few sites sprinkled in the residential-zoned neighborhoods. Based on approximately 3,200 home sites within its boundaries, the City of Carmel provides roughly 1 visitor-serving room per every 3.5 houses.

Consistency with the Coastal Act

On November 15, 2002, the City of Carmel-by-the-Sea resubmitted its Coastal Land Use Plan that includes among other things goals, objectives, and policies designed to protect, maintain, and improve a multitude of pubic access and recreational opportunities along its shoreline and inland parks. The LUP discussion of access and recreational issues appears on pages 51 – 71 and includes policies that are to a great extent, consistent with Coastal Act policies 30210, 30211, 30212, 30212.5, 30213, 30214, 30220, 30221, 30222, 30223, and 30252.

The City's LUP policies identify and maintain the current variety and number of public access points and recreational support facilities along the nearly 1 mile stretch of coastline. Development activity is limited to public information signing and facilities that support active and passive recreational activities, beach access, bluff protection (when warranted) and protection of infrastructure (when warranted). The plan recognizes the Del Mar Avenue parking lot as the principal vertical access point to Carmel beach with

its 125 free public parking spaces, a sand wash-off station, and public restrooms. The access discussion notes that traffic and congestion in this area are a problem and that attempts to redesign or improve circulation need to avoid or minimize the loss of parking spaces at this location. South of Ocean Avenue along Scenic Road, there are another eight improved vertical access stairways and two vertical sand ramps. LUP policies provide additional protection and maintenance of these vertical access points requiring they be repaired or maintained when storm damaged. A pedestrian path follows the undulating bluff on the western edge of Scenic from 8th Avenue south to Santa Lucia. The City has adopted LUP policies to maintain this path as a public recreational resource and has recommended that the entire length of the blufftop path (approximately 1 mile) be designated as a local segment / connection in the California Coastal Trail. Additionally, the LUP directs the City to research and identify a location for replacing the current temporary restroom facility on Scenic with a permanent structure. Accessing the blufftop path is logically gained from one of the roughly 125 free parking spaces spread along Scenic Road. In addition, there is one unimproved vertical access point north at 4th Avenue. In the spirit of maximizing public access and maintaining frequent public access points, the LUP requires that this vertical access be improved for public use and enjoyment. LUP policies were also developed to allow a balance of uses with the City's inland parks and preserves. The LUP contains policies that provide for public access and passive enjoyment of City parks while maintaining and preserving sensitive habitat and natural resource areas. In summary, the City's LUP policies address the access and recreation policies of the Coastal Act by: maintaining the Del Mar dunes in public ownership, retaining existing and providing additional public restroom facilities, designating the blufftop pedestrian path as a segment of the California Coastal Trail, maintaining the existing vertical access stairways, improving the vertical accessway on 4th Avenue, providing public parking, and recognizing public prescriptive rights of access.

The LUP also requires that procedures and regulations for temporary events on the beach be implemented to protect public access and environmental resources. Each year Carmel beach is the scene of a handful of public events including a surf contest, kite festival, sandcastle contest, and movie on the beach. These events are free and open to the public and do not preclude access to the City-owned beach. Additionally, the City receives between 3 and 6 requests annually for special event permits for private beach parties (e.g., weddings, etc).

Visitor-serving accommodations provide an opportunity for overnight visitors to stay in the City, and experience the character and charm of the coastal village. They also facilitate access to the City's beaches, parks, and shopping areas as well as providing an economic benefit to the primarily residential community. As noted above, the City provides roughly 950 visitor-serving rooms within its one square mile boundaries. Although the adopted LUP policies do not require any further expansion of visitor-serving amenities, it does establish that the current balance between visitor-serving,

residential, and commercial uses be maintained. The LUP also requires a periodic evaluation of whether an appropriate balance of land uses is being maintained.

1. Preferential Parking

The LUP includes a preferential parking policy for Scenic Road and the Del Mar parking lot. Under the program, public parking along this stretch of coastline, as well as the Del Mar Avenue parking lot, would be available from 5:00 a.m. to 10:30 p.m. daily. Residents of Scenic Road are allowed to park 24 hours each day with a resident parking permit. This policy was included to address perceived public nuisance concerns associated with nighttime visitors to Carmel Beach. As discussed below, the policy is not consistent with Coastal Act sections 30210 and 30212, which require maximum public access and access from the nearest public roadway.

Scenic Road lies at the western most edge of the City. It follows the naturally undulating bluffs above Carmel Beach and offers magnificent views of the shoreline. Private homes line the east side of Scenic Road. The western right-of-way provides parking for roughly 125 vehicles and a delineated pedestrian blufftop path experience. There are eight vertical access stairways and two sand ramps leading to the beach along this eight-block stretch of coastal roadway. The Del Mar Avenue parking lot at the foot of Ocean Avenue provides another roughly 125 parking spaces and other public recreation improvements. Several homes dot the southern "turn-around" of the lot. Parking or stopping during the evening (i.e., 10:30 p.m. – 5:00 a.m.) would be prohibited for the general public, though residents and their guests would be allowed to park by displaying a parking permit.

The issue of preferential parking arose in 2000 when the Commission discovered that the City had been operating a public parking ban along Scenic Road for several years without the benefit of a coastal development permit. The discovery was made when the City submitted an application for an "after the fact" permit for the Scenic Road parking program and to expand the parking ban to the Del Mar Avenue parking lot. The parking restriction prohibited parking one half hour after sunset to 5:00 am for all except those with a resident parking pass. The City withdrew its application prior to Commission action. The issue was elevated to a Coastal Act violation and passed on to the Commission's Enforcement division. Pending action by Enforcement, the City agreed to remove or make ineffective the parking program until such a time when it could provide evidence in support of the program. The parking program resurfaced in the form of an access policy in the City's re-submittal of its Coastal Land Use Plan.

In this instance, the City of Carmel-by-the-Sea proposes the parking restrictions to address a perceived public nuisance due to evening public parking near the beach.

Over the past two years, staff has suggested that an evaluation of the available supply of parking for the homes along Scenic Road and Del Mar Avenue and demand for off-street parking during the evening, busy weekends, and holidays be submitted within the context of an coastal development permit application or LCP submittal. The City provided:

> "there is some time of day variability and seasonality associated with recreational beach visitors. Most members of this group visit during daylight hours and peak use occurs in the afternoons. Summer is the peak season of use with substantially less demand in the winter season."

Additionally, the City provided nine months of data from its police department (i.e., 2002 year-to-date calls for service) as evidence that a parking program was necessary. See Table 1.

TABLE 1

	8:00 am – 4:00pm	4:00 pm – 12:00am	12:00am – 8:00am
Noise Complaint	9	12	1
Suspicious Person	3	6	2
Suspicious Vehicle	4	3	2
Suspicious Activity	1	3	2
Vehicle Code Violation	3	2	0
Beach Fire Violation	20	56	9
CMC Violation	6	9	1
Parking Violation	82	39	4
Vehicle Lockout	0	1	0

Table 1 breaks out the types of complaints by hour. The first column lists the type of complaints. The second, third, and fourth columns represent the hours and numbers of occurrences. Column two occurrences are outside the affected hours of the parking program, however the data does provide a context for evaluating responses during other hours.

The LUP policy raises issues regarding public use of public streets for parking in order to access the beach, elimination of low-cost recreational amenities during the evening, exclusive use of public property for private use, and absence of adequate parking nearby. To begin with, Carmel Beach is a free resource open to the public 24 hours each day. The ability to take a stroll along the beach or pedestrian path during the evening is substantially dependent upon parking in one of the 300 available public parking spaces on Scenic Road or in the Del Mar lot. The City has offered that nighttime beachgoers (after 10:30 p.m.) could park on adjacent neighborhood streets and access the beach via one of the unimproved connecting easements. San Antonio is located immediately inland of and is parallel to Scenic Road. It is a narrow in width

without any walkways or street lighting. The public owned right-of-ways in many cases have trees and/or other landscaping impeding parking. Often the available undeveloped spaces are used for second or third resident vehicles. There are no through roads to the beach between 8th Avenue and 13th Avenue. There are however, poorly marked unlit easements approximately 3' – 4' in width that can be used to walk down to Scenic Road. Although, adequate for using during daylight hours, these easements contain tree roots and cracked and uneven surfaces that make walking on them in the dark hazardous. Furthermore, because they are not well signed or illuminated, they are difficult for visitors to locate even during daytime hours.

Secondly, displacing visitors and their vehicles onto adjacent neighborhoods may introduce problems associated with additional traffic and parking into an area where there are not the improvements to handle them. Because the street right-of-ways are often used by residents for second and third vehicle parking, reallocating pubic parking onto San Antonio may lead to increased user conflicts as residents and visitors compete for available spaces. Additionally, the limited amount of parking on San Antonio may lead to an increase of parking on or very near sensitive resources such as the root area of significant trees or other vegetated strips. Conversely, both Scenic Road and the Del Mar parking lot have clearly designated parking spaces, a separate and safe pedestrian path, restrooms, and greater street widths to handle the mix of cars, people, bikes, etc.

The City's recommendation for restricting parking at 10:30 p.m. coincides with the 10:00 p.m. curfew on beach fires, but it does not account for the possibility of a midnight walk or late night stargazing or even nighttime fishing. The blufftop pedestrian path similarly provides one of the few coastal recreational opportunities on the Monterey peninsula for persons with disabilities during the evening. Access to this recreational experience is gained from parking along Scenic Road. A 10:30 p.m. ban on public parking along Scenic Road and the Del Mar lot would preclude nighttime access to the coast for this user group. During the summer months the sun sets at 8:30 p.m. and the sky is not completely dark until shortly after 9:00 p.m. People, visitors and residents alike, are still bustling about at 10:00 p.m., 11:00 p.m., even mid-night on warm summer evenings. Restricting parking at 10:30 p.m. substantially decreases the opportunity for all persons to enjoy the beach other than those that live on Scenic or Del Mar or are the guests of these residents.

The City has argued that LUP policy P9-134 is consistent with the intent of Coastal Act section 30210 (maximum public access), 30212 (public access from nearest roadway), and 30214 (regulate time, manner, and place of access) consistent with public safety needs, the need to protect public rights, the rights of private property owners, and natural resources from overuse. As has been demonstrated in the findings above, the LUP policy is clearly not consistent with 30212 because it displaces public parking from the nearest public roadway. This is not consistent with sections 30210 or 30214 as well. Coastal Act section 30210 requires that the provision of maximum public access

consider public rights and the rights of private property owners. In this case, the land on which public parking is provided is public lands. Access to the beach is gained by traversing on public lands. And the beach itself is again on public lands. In no instance is the public trespassing onto private property. However, as proposed, implementation of a preferential parking program would infringe on the rights of the public, the right of access to the coast. Thus, the Commission concludes that LUP policy P9-134 is not consistent with Coastal Act section 30210.

Similarly, Coastal Act section 30214 states that the access policies shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending upon the facts and circumstances in each case including the proximity of the access area to adjacent residential uses. At the time the City's made its application, only one in four homes (16 of 61), which line Scenic Road or the Del Mar Avenue parking lot were owner occupied, the remaining were vacation homes owned by non-residents. Table 1 above provides a summary of request for calls for police service for the first nine months of 2002. There were 128 complaints during the hours unaffected by the parking ban (8:00 a.m. – 4:00 p.m.) and 131 complaints during the 4:00 p.m. – 12:00 a.m. time period. Beach fires and parking violations required the most responses. Parking violations result when a vehicle is parked in an illegal spot such as a red zone or handicap space or is greater than maximum allowed size class. Most of these occur during daylight hours when demand for parking spaces is strong. Beach fire violations result from having a fire in an area prohibited by the City or when they are not extinguished at 10:00pm. The City's beach fire requirements are confusing and not well signed. Coastal visitors unfamiliar with these requirements make up the bulk of these calls for service. Noise complaints followed up the parking and fire responses with 13 complaints during the 4:00 p.m. – 8:00 a.m. period or roughly 1.4 per month. There were 9 noise complaints during the day. Finally, there were a handful of other requests for service, though the numbers are insignificant (i.e., less than one per month). It is notable that there were no violent crimes reported over the past nine months. Several local juveniles did, however, vandalize the portable restrooms at the end of Scenic Road this past summer. Thus, with the exception of a very few incidents, most of the requests for police services were for minor infractions of the City's municipal code. Most could be addressed through educating the public about beach rules and regulations; the remainder are enforcement issues and not atypical of any California community. The information provided by the City does not support the need to regulate time and place of access as stringently as the City proposes. Therefore, LUP policy P9-134 is not consistent with Coastal Act section 30214 either.

Finally, City staff has indicated the need for a preferential parking program to ensure that there was adequate parking for the beach side residents. Allowing that roughly three-quarters of the homes are vacant most of the time along Scenic Road and Del Mar Avenue, the City's argument is weak. Moreover, every home along Scenic Road has a parking garage and adequate driveway space to accommodate a minimum of two vehicles. Furthermore, Commission staff observed during visits to the area in the

evenings, that there were an adequate number of available parking spaces along Scenic Road and the Del Mar Avenue parking lot for resident's guests and visitors alike. Thus, this argument is unconvincing.

This process began roughly two years ago when the City applied to the Commission to legitimize and expand the parking restrictions at Carmel Beach. At that time, City officials and residents predicted significant conflicts between visitors and residents would occur unless beach parking, and by extension, access to the beach was denied to all but the 61 shorefront residents along Scenic Road and Del Mar Avenue. This has not occurred, as the parking signs have been covered over the last 12 months. Based on the evidence provided by the city and over the course of many months of investigation and analysis, it appears the additional restrictions on public access due to the perceived onslaught of public nuisance problems is unwarranted. As a result, LUP policy P9-134 implementing a preferential parking program from 10:30 p.m. – 5:00 a.m. along Scenic Road and the Del Mar Avenue parking lot is inconsistent with the Coastal Act.

Recommended Modification

The loss of coastal recreation opportunities resulting from the implementation of a preferential parking program represents a significant adverse impact to the availability of public access and recreational opportunities in Carmel. Defined broadly, these opportunities include not only the physical availability of access and recreation areas, but also the ability of the public to reach and utilize these sites. The recommended preferential parking policy contained in the Land Use Plan is inconsistent with the intent of the Access and Recreation policies of Chapter 3 of the Coastal Act. The City's LUP policy P9-134 states:

> **P9-134** Provide convenient and free public beach parking from 5:00 a.m. until 10:30 p.m. daily. Parking outside of these hours along Scenic Road and at the Del Mar parking lot shall be limited to residents and guests with a resident's parking permit.

Although the Commission is unconvinced that a public parking ban is needed at the Del Mar Avenue lot, it does recognize that certain benefits can accrue from enacting a limited overnight parking ban along Scenic Road. Thus, in order to insure the protection and provision of public access along with the consideration of public safety needs, the needs to protect public rights, rights of private property owners, and the protection of natural resources consistent with 30210, 30212, and 30214, staff is recommending that LUP policy P9-134 be modified to:

> **Modification 28** Provide convenient and free public beach parking from 5:00 a.m. until ~~10:30 p.m.~~ 1:00 a.m. daily. Parking outside of these hours along Scenic Road ~~and at the Del Mar parking lot~~ shall be limited to residents and

guests with a resident's parking permit.

Based on the findings provided above including the recommended modification to policy P9-134 contained in the Land Use Plan, the Commission finds that the Public Access and Recreation policies contained in the Land Use Plan for the City of Carmel-by-the-Sea meets the requirements of and conforms to all of the Public Access and Recreation policies of Chapter 3 of the Coastal Act.

2. Del Mar Road Abandonment

A second ongoing issue is the abandonment of the Del Mar Avenue road right-of-way. Several segments of public property have been abandoned along a stretch of coastal dune between the Del Mar Avenue parking lot and 8th Avenue without the benefit of a coastal development permit. The abandonment has been elevated to a Coastal Act violation. The loss of this public property represents a loss of potential public recreational opportunities. Central Coast staff has attempted to negotiate with the staff of the City of Carmel to resolve this issue over the past 10 years but has been unsuccessful to date. During the course of the evaluation of the City's LCP, the Commission has reminded City staff of its obligation to resolve the issue either in the context of the LCP or a Coastal Development Permit application. As of the date of this staff report, the Commission has not received an application to abandon the roadway and the City's current adopted LUP has omitted any reference to the issue.

Recommended Modification

Coastal Act sections 30210 – 30213 require public access to the coast be protected and sections 30221 – 30223 require protection of coastal recreational uses. As submitted, the City's LUP is silent on the Del Mar Avenue road abandonment and is therefore inconsistent with the Chapter 3 policies listed above. LUP policy P9-101 states:

> **P9-101** Improve pedestrian circulation between the north end of the Beach Bluff Pathway at Eighth Avenue and the beach facilities at Ocean Avenue and Del Mar as part of the Del Mar and North Dunes Master Plan.

The Commission recommends the following modifications to P9-101 to bring it into compliance with the Coastal Act:

> **Modification 29** Abandonment of any segments of the Del Mar Avenue roadway shall include on-site mitigation to include provisions for public access. Mitigation shall consider installation of a ~~Improve~~ pedestrian ~~circulation~~ path between the north end of the Beach Bluff Pathway at Eighth Avenue and the beach facilities at Ocean Avenue and the Del Mar Avenue parking lot. ~~as part of the Del Mar and North Dunes Master Plan.~~

As so modified by P9-101, the City of Carmel-by-the-Sea LUP is consistent with the Chapter 3 policies for provision of access and recreational opportunities.

3. Low-Cost Visitor-Serving Amenities

As stated previously, the City of Carmel-by-the-Sea and its magnificent beach and parks is a world-renowned destination for visitors from Central California, all 50 contiguous U.S. states, and the world. Overall, a wide variety of recreational opportunities exist within the City such as surfing, diving, hiking, beach-combing window-shopping, nature study, and equestrian use. The City of Carmel provides a substantial number of lower-cost visitor-serving amenities within its roughly one square mile boundaries. It has been estimated that there is 1 visitor-serving room per every 3 homes in Carmel. It follows naturally that the City's LUP contains policies protecting the current balance of land uses including the mix of residential, commercial, and visitor-serving. However, the LUP is silent on preserving low cost visitor-serving amenities. The LUP does reference Coastal Act section 30213 at the beginning of the Access and Recreation chapter. It requires that lower cost visitor and recreational facilities be protected and encouraged and where feasible, provided. Due to the astronomical rising of property values and increased rents in the City's commercial district, it is essential that low cost visitor and recreational facilities be protected. For this reason, the LUP cannot be considered consistent with 30213.

Recommended Modification

Coastal Act section 30213 requires low cost visitor and recreational facilities be protected and encouraged and where feasible, provided. As submitted the City's LUP is not consistent with this policy. Staff recommends adding the following new policy to the City's adopted LUP:

> **(Modification 30)** <u>Lower cost visitor and recreational facilities be protected and encouraged and where feasible, provided. Developments providing public recreational opportunities are preferred</u>.

As modified, the City's LUP policies for the protection and provision low cost visitor serving amenities is consistent with Chapter 3 of the Coastal Act.

D. Hazards

Coastal Act Policies

The Coastal Act addresses coastal hazards through Coastal Act Sections 30235 and 30253. Coastal Act Section 30253 addresses the need to ensure long-term structural

integrity, minimize future risk, and to avoid landform altering protective measures in the future. Section 30253 provides, in applicable part:

Section 30253. New development shall:

(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) 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.

Coastal Act Section 30235 addresses the use of shoreline protective devices:

Section 30235. Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

Policy Summary

In sum, the Coastal Act requires that new development be constructed in such a manner as to assure stability over its lifetime. Such stability is meant to be ensured at the time of construction; future stability problems are to be avoided by ensuring that adequate provisions are made at the time of construction to address coastal hazards. The Coastal Act also includes provisions for allowing shoreline armoring under certain circumstances.

In the case of Carmel, evidence to date does not indicate that there are any areas more prone to 30253 hazard issues than other Monterey Peninsula communities. The primary Coastal Act hazard issue in Carmel appears to be associated with shoreline hazards (including episodic and steady bluff retreat and erosion, storm wave and surf attack, and coastal flooding).

Under Section 30253, new development is to be designed, sited, and built to allow the natural process of erosion to occur without creating a need for a shoreline protective device. In other words, coastal zone development approved and constructed pursuant to 30253 should not require shoreline protection in order to "assure stability and structural integrity" because it was constructed with adequate setbacks and/or other measures in order to negate the need for future armoring.

Coastal Act Section 30235 acknowledges that seawalls, revetments, cliff retaining walls, groins and other such structural or "hard" methods designed to forestall erosion also alter natural landforms and natural shoreline processes. Accordingly, with the exception of new coastal-dependent uses, Section 30235 limits the construction of shoreline protective works to those required to protect existing structures or public beaches in danger from erosion. The Coastal Act provides these limitations because shoreline structures can have a variety of negative impacts on coastal resources including adverse affects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, ultimately resulting in the loss of beach.

LUP Submittal

The proposed LUP includes a range of policies applicable to shoreline hazards and erosion response. The LUP also includes as an appendix a shoreline management plan (SMP) that includes hazard and erosion response components for the shoreline, and also includes information and policies relevant to public access, recreation, and other coastal resource issues associated with that area seaward of the first public road.

Analysis and Required Modifications

The submitted LUP generally responds to Coastal Act hazard policies, but it isn't entirely consistent with the Act in each case. There is also a lack of clarity and some internal inconsistency within the proposed policies that could lead to confusion when the LUP is implemented in the future. Such confusion would be at the expense of the coastal resources it is designed to protect. The following paragraphs discusses these deficiencies and offer suggested modifications to bring the LUP into conformance with the relevant policies of the Coastal Act.

Coastal Act Section 30253 missing

The draft LUP omits reference to Coastal Act Section 30253 parts 1 and 2 in the Coastal Resource Protection Section where Coastal Act polices are listed. These Coastal Act Sections are relevant to ensuring the stability of new development, particularly ensuring that new shoreline development does not require additional shoreline protection measures in the future that could alter natural landforms. Fortunately, this issue can be easily addressed by including a reference to these Coastal Act sections in the applicable policies section of the LUP.

LUP's "Coastal Resource Protection" background section

The Coastal Resource Protection section background component includes a number of small inconsistencies, and some small errors. Fortunately, these can be easily corrected to ensure that the LCP accurately describes Carmel's coastal resource background by incorporating the following changes into the LUP:

- Pages 76-77: "Carmel, like..., appears to derives most of its sand..."
- Page 77, last paragraph: "If left unmanaged, the bluffs surrounding Carmel Bay would progressively erode from the impact of winter storm waves, and from surface drainage, and other steady and episodic erosion processes.
- Pages 77-78: "Erosion of Carmel's bluffs is quite variable along the shoreline and is includes both steady erosion and episodic events."
- Pages 78, second paragraph: Change the reference to Figure 9.7a to Figure 9.6.a.

In the Coastal Resource Protection section, the LUP asserts that historic shoreline structure development along the back beach has not led to the loss of beach sand at Carmel Beach. However, this assertion has not been well verified. Although some anecdotal evidence suggests that the cumulative sand supply impact from the almost complete armoring of the southern portion of the Carmel Beach bluffs over the years may be negligible, there has not been any exhaustive analyses that clearly prove this theory. Moreover, recent studies suggest that the width of the beach has decreased since 1949. Accordingly, the status of the beach resource as indicated in the LUP's background text, and on which the proposed policies are based, is not so clear cut. Fortunately, this issue can be easily addressed by including verbiage qualifying the status of the beach resource as understood from current information and studies.

LUP Figure 9.6a refers to "Public Coastal Protection Structures." As a result, it only maps a portion of the shoreline structures along Carmel's shoreline. Although the vast majority of such structures are public, there are also some private structures (e.g., at the mouth of Pescadero Creek). The figure will thus tend to understate the extent of armoring and could, as a result, understate the extent of coastal resource impacts associated with same. To be as clear as possible, the figure should be amended to map all shoreline structures, and then to identify which of those are public versus private. Since SMP Figure 8 already does this, this issue can be addressed by inserting SMP Figure 8 as LUP Figure 9.6a

LUP Figure 9.6b is entitled "Sand Displacement and Deposition" and indicates that is maps "Sand Displacement and Replenishment." However, it is clear from the corresponding the LUP text (and from SMP Figure 9 that is more detailed) that this figure actually identifies areas where the City has historically manipulated beach sands by redistributing sand from the lower to higher beach elevations. While 'displacement' could be accurate, deposition and replenishment, as though terms are understood, has not historically been a part of the City's sand movement program. These inaccuracies can contribute to an incorrect understanding of the beach area resource, as similar to others above, that could lead to both incorrect policies and implementation of them in the future. Fortunately, this issue can be easily addressed by changing the title and the legend of Figure 9.6b.

Shoreline Armoring

The Coastal Act allows shoreline armoring only specific circumstances. The policies suggested, while mimicking Coastal Act requirements in some respects, are internally inconsistent (e.g., P9-167 prohibits structures on the beach, while P9-161 and P9-162 allow them in certain situations; P9-161 and P9-162 establish different criteria from each other) and in some cases overly broad (e.g., P9-161 and P9-162 could be read to allow armoring in situations not envisioned by the Act). Moreover, the policies are somewhat muddled.

Because the City's shoreline is relatively small, the policies should be very specific. In Carmel this boils down to decision points regarding when a armoring project is warranted, what needs to be done to ensure that allowable armoring projects are consistent with the established beach aesthetic and character, and sensitive to maintaining and preserving the beach and the overall beach recreational experience as directed by the Act. Armoring is allowed for existing endangered structures. In the case of Carmel, the Commission has previously recognized Scenic Road and the recreational trail system on the bluff above Carmel Beach as facilities worthy of such protection. Thus, the policies proposed provide a thorough basis, but can be clarified to ensure Coastal Act consistency and ease of implementation (both this LUP and a future IP) in the future.

In addition, the LUP contains a series of policies intended to help coastal managers better understand Carmel Beach dynamics. These policies are directly related to the LUP's Shoreline Management Plan (SMP) that was submitted as part of this proposed LUP. The SMP was a requirement of the CDP 3-00-140 (issued to the City for shoreline armoring), and built upon previous SMP-like requirements of other armoring permits issued to the City. The previous SMP requirements are clear, and were developed to assist the City in just such plan development.

Part of the issue precipitating the SMP, as discussed above, is that it is not clear whether Carmel Beach is shrinking, and what effect shoreline development and armoring has had on this process. Although anecdotal evidence suggests that it is in a state of relative equilibrium, recent studies indicate that the beach may be retreating. Because the bluff has effectively been fixed along most of Carmel's back beach, beach retreat would eventually imply that Carmel Beach would no longer be present eventually. The City has committed to analyzing the dynamics of the Carmel Beach, building upon their significant efforts to date, and to monitor beach erosion, particularly as it is affected by shoreline structures. The SMP goal and policies P9-157, P9-158, P9-159, and P9-160 are specifically related to this task. The same can be said for portions of policies P9-172, P9-173, P9-174. However, such plan development should be consistent with past Commission action and adequately responsive to the types of information necessary to understand the issue.

As to P9-157, P9-158, P9-159, P9-160, P9-172, P9-173, and P9-174, while generally

appropriate, there are a few areas where these policies can be clarified to remove redundancy and to ensure that the analysis and studies are the most useful to the City and the Commission as they can possibly be, and as consistent with past Commission action on this issue as possible. And so that, ultimately, decisions are made as regards the irreplaceable treasure of Carmel Beach with this knowledge available. Thus, modifications are suggested.

Shoreline Management Plan

It is not clear at the current time how best to integrate the submitted SMP and its emergency action response plan into the LUP. Part of the reason for this is that the LUP is arranged by issue area, while the SMP is really more of a specific plan related to the shoreline, including a range of policies applicable to hazards as well as those applicable to ESHA, public access and recreation, and other shoreline issue areas. The SMP includes incredibly valuable background information on the Carmel shoreline and how to preserve it for future generations. Additional analysis is needed, however, to ensure that it integrates seamlessly into the LUP. This is particularly the case as it relates to the SMPs emergency action response plan inasmuch as it appears to pre-authorize development under particular conditions and outside of the coastal permit process. The SMP, and its more detailed information designed to clearly describe the steps necessary for the long term management of the Carmel shoreline, are better dealt with in the IP. A modification is thus suggested that the SMP be included in the IP, and removed from the LUP.

Long-term Stability

The LUP is lacking a general hazard policy that is unrelated to shoreline hazards. Such a policy is necessary to ensure that all development in the City, not just shoreline development, is constructed in such a way as to ensure its long-term stability, as directed by the Act. Fortunately, this is easily addressed by including a new policy applicable citywide

Hazard Conclusion

As modified by Modifications 31 - 52, the LUP can be found consistent with Coastal Act policies 30235, 30253(1) and 30253(2).

E. Water Resources

The following sections of the Coastal Act pertain to the management of available water supplies:

> **Section 30231.** *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means,*

minimizing adverse effects of wastewater discharges and entertainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30250(a). *New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.*

Section 30254. *New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted, consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway 1 in rural areas of the coastal zone remain a scenic two-lane road. Special districts shall not be formed or expanded, except where assessment for, and provision of, the service would not induce new development inconsistent with this division. 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 reaction, commercial recreation and visitor-serving land uses shall not be precluded by other development.*

LUP Reference: Community Infrastructure, Water Resources

Background

Following the severe drought conditions in the late 1970's, voters in Carmel and elsewhere on the Monterey Peninsula, approved the formation of the Monterey Peninsula Water Management District (MPWMD) to regulate water resources on the Monterey Peninsula. The MPWMD regulates the collection, storage, distribution and delivery of water within the 170-square mile area of the district. All of the water used within the MPWMD comes from the Carmel River, from wells in the Carmel Valley, and the Seaside Basin. The MPWMD allocates water from these sources to the various water companies and smaller local jurisdictions.

The largest water distribution system in the Monterey Peninsula is operated by the California-American Water Company, which provides water to the City of Carmel and to nearly 95 percent of the 112,000 residents in the MPWMD. Cal-Am provides water to its users through groundwater extractions and diversions from the Carmel River via the Los Padres Dam. Both of these sources are currently being used at near or above their sustainable yield. Two threatened species, the California red-legged frog (*Rana aurora draytonii)* and the Steelhead (*Oncorhynchus mykiss),* are found in the Carmel River.

In 1995, State Water Resources Control Board Order 95-10 reduced the amount of water Cal-Am could take from the Carmel River aquifer by 20 percent in the near-term and up to 75 percent in the long-term. The MPWMD requested relief through the courts, but the Monterey County Superior Court upheld the 20 percent reduction in water use specified by the order. Since that time, the jurisdictions along the Monterey Peninsula, including the City of Carmel, have been under strict conservation measures, and have focused their efforts on improving water conservation programs while working on other water supply augmentation proposals that will garner community support and help Cal-Am attain the goals established by the Order.

State Order 95-10 also mandates that Cal-Am maintain production below 15,285-acre feet of water per year within the Cal-Am boundaries. All of this water is already allocated to current users or proposed construction that has already been approved, and no additional water source is presently available to serve Cal-Am customers within the district.

A 1998 report on the estimated future water needed for buildable legal lots of record on vacant parcels within the Cal-Am service area states that approximately 923 acre-feet of water would be needed for new buildings as of January 1997 and remodels through the year 2006 (MPWMD 1999 Annual Report). The MPWMD has since been working on completing an update of this report, and while the 2001 update is not yet published, the agency has determined that approximately 1,400 acre-feet of water would be needed for the existing vacant legal lots of record on unimproved parcels within the MPWMD boundaries. Additional water needed for unincorporated County areas with existing vacant legal lots of record that have some improvements on them (such as small sheds or other such structures) have not yet been calculated. However, it is expected that the total water requirement would be somewhat greater than 1,400 acre-feet.

At this time, no new supply of water is on the horizon. Cal-Am and the MPWMD, however, are currently searching for additional water supplies. Possible alternative strategies include implementation of groundwater injection (e.g., storage of excess water from the Carmel River in the Seaside Coastal Basin during winter months), desalinization of seawater, wastewater recycling (i.e., using reclaimed wastewater for irrigation purposes), and additional water conservation efforts that include retrofitting or replacing water-using appliances and fixtures and drought resistant landscaping.

Carmel, like all the cities on the peninsula, has little or no unallocated water for new development according to City Planning Staff. As there are very few vacant lots in the City of Carmel, most new development involves the demolition of older buildings and the subsequent construction of replacement structures. In order to ensure that the City stays within their allocation, these replacement buildings must demonstrate that they will not use additional water beyond that used by the demolished structure. Although the replacement buildings, particularly new homes, are often significantly larger than the demolished structures, water parity is maintained by the use of water conserving fixtures and landscaping that does not require extensive irrigation.

Given that water is an important coastal resource, especially within the Monterey Peninsula area where water supplies are extremely limited, it is vitally important that the LUP contains policies that adequately regulate development to protect water resources. These policies must be consistent with Coastal Act policies requiring that new urban development be located in urban areas with adequate public services, and that give priority to certain types of development when public services are limited.

LUP Policies

The Carmel LUP contains a number of policies directed to the preservation and allocation of water in the City. (Pages 40-41. LUP) Most of these policies are directed towards ensuring that new and existing development comply with the various water conservation policies relevant to fixtures and landscaping and City coordination with other cities and agencies to monitor the allocations and seek new sources of water. (Policies G9-3, 09-6, P9-35,P9-37, P9-38, P9-39, P9-40, P9-41, and O9-7). These policies are mostly consistent with the policies in the Coastal Act that require the protection of water resources and that new development should be directed to existing areas able to support it through adequate public services (PRC 30231 and 30250 (a)). Water supplies are so limited, however, that a stricter policy on the use of native (and thus less needful of irrigation) plants in new development landscaping is needed. Please see modification 59.

The LUP also contains two policies that establish priorities for water when supplies for new development are very limited as is the case now. Policy P9-36 gives priority for water to residential uses and to Municipal projects. In contrast, the Coastal Act, in Section 30254, gives priority 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.*" In the case of Carmel, there is no existing development that is " coastal dependent" and none is planned for in the LUP. Carmel is also not developed with any basic industries and no land is designated for such use in the LUP so these Coastal Act priority land uses are not relevant to Carmel and thus don't need to be given any priority for scarce water supplies. Carmel is, however, a popular visitor destination and has significant public recreation facilities and visitor serving development. Virtually all of the land designated

for such uses is built out with those uses and as currently developed, there is neither room nor need for much additional public recreational or visitor serving development with the exception of the planned permanent restrooms on Scenic Drive. In order to ensure that these uses are not reduced in the future and Coastal Act consistency is achieved, policy P9-36 must be revised to provide for the reservation of water capacity for these types of development. As revised by Suggested Modification 53 to acknowledge these priorities, the policy is consistent with the requirements of Coastal Act Section 30254. Proposed policy P9-43 must also be revised to be consistent with the proposed modifications to P9-36. (Please see Suggested Modification 54)

As discussed in a preceding section of this report, most of the new development in Carmel is, and will continue to be, demolitions and re-builds because the City has virtually no unallocated water. Coastal Act Section 30250(a) requires that new development must be able to be served by adequate public services. In order to comply with this requirement by ensuring that the City's water allocation will not be exceeded, new replacement development cannot require more water the development it replaces. Proposed Policies P9-42 and P9-44 partially address this issue but more specific policy language is needed to ensure consistency. Suggested Modifications ensure that all new development will be carefully analyzed to ensure that it remains within the available water allocated to the use it replaces. (Please see Suggested Modifications 56 and 57)

Section 30250(a) requires urban uses to be served by public services for water and sewer service. Carmel is entirely urban. Public water service is provided by the Cal Am Water Company, a privately owned purveyor that is regulated by the public through the PUC. This policy derives from one of the most fundamental principles of the Coastal Act, as well as modern urban and environmental planning: *the establishment and maintenance of stable urban/rural boundaries for the protection of sensitive resources and to provide for the rational planning of public services to support new urban development.*

In particular, the benefits of urban/rural boundaries include the prevention of urban sprawl, protection of agricultural land, efficient use of land, and the rational planning and construction of urban infrastructure (e.g., roads, utilities, and sanitation systems) to support urban intensities of land use. Urban-level intensity land uses are then directed to locate within urban areas, preserving rural lands for low intensity rural land uses. Certainly the services that are required to support urban uses (e.g., water supply and storage/conveyance/treatment systems, sewer connections, wastewater treatment plants, etc.) are greater and different than those needed for rural land uses (e.g., small wells and individual septic systems). Coastal Act policy 30250 states this premise as follows:

> ***Section 30250(a)*** *New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas* ***able to accommodate it*** *or,*

> *where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually* ***or cumulatively****, on coastal resources...* [Emphasis added].

This policy provides that if an urban area lacks critical infrastructure - e.g., water, sewer, or road capacity – to support further urban development, then new development must be delayed until the capacity of the limited service can be increased, through a comprehensive urban planning process, in order to support it. It does not mean that urban uses should proceed incrementally, using what are essentially rural-level services (e.g., private wells and septic systems). The proliferation of rural services within an urban area causes practical problems (e.g., wells run dry, lot sizes are too small to accommodate septic systems) and planning problems. Ultimately, incremental development without comprehensive planning may lead to serious environmental resource impacts such as groundwater overdraft, polluted groundwater, degraded riparian habitat, and so on.

Since water supplies are limited, the City has been very careful to ensure that all new development can be served by public water and keep within their allocation from Cal Am and the Monterey Water District. Authorization of private wells or private desalination facilities within this public service area, whether for potable water or supplemental non-potable water for irrigation purposes, is contrary to the planning principals discussed above and could lead to potential cumulative impacts which undermine Cal-Am's ability to provide adequate water supplies to existing service connections within the Monterey Peninsula Water Management District. Suggested Modification 54 is needed to ensure that the Coastal Act requirement that urban uses be served by public utilities is met.

Finally, Section 30254 of the Coastal Act limits the capacity of public infrastructure to be consistent with planned build out of urban areas rather than allow these facilities to be oversized which would promote urban sprawl. In the event that a desalination plant is ever chosen as a method to increase the public water supply, a policy limiting it's size is needed to meet the requirements of Section 30254. (Please See Suggested Modification 58)

Therefore, as revised by Suggested Modifications 53 through 59, the Water Resources Section of the Carmel LUP can be approved as consistent with the cited Coastal Act policies.

F. Water Quality

Coastal Act Policies

Section 30230 of the Coastal Act states that:

> *Marine resources shall be maintained, enhanced, and where feasible, restored.*

Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231 of the Coastal Act states that:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Background

Carmel-by-the-Sea lies within and at the bottom of the Carmel River watershed. Runoff from the City flows into Carmel Bay, which is designated both as an Area of Special Biological Significance (ASBS) in the California Ocean Plan, and as a California Fish and Game Ecological Reserve. It is also part of the Monterey Bay National Marine Sanctuary. An ASBS is an area designated by the State Water Resources Control Board that requires special protection of species or biological communities that could be impacted by water quality degradation. As discussed in the Public Access finding, Carmel Beach and the shoreline also is a highly popular public recreation area. Maintaining and restoring water quality throughout the Carmel River watershed, and in this case, Carmel's urban landscape, is necessary to protect these sensitive coastal resources.

The Commission shares responsibility for regulating nonpoint source water pollution in the Coastal Zone of California with State Water Resources Control Board (SWRCB) and the coastal Regional Water Quality Control Boards (RWQCBs). The Commission and the SWRCB have been co-leads in developing and implementing the January 2000 Plan for California's Nonpoint Source Pollution Control Program (Plan), which outlines a strategy to ensure that management measures and practices that reduce or prevent polluted runoff are implemented over a fifteen-year period. Some of these management measures and practices are best implemented at the local planning level, since they can be most cost effective during the design stage of development.

The Commission and the Central Coast Water Quality Control Board (CCWQCB) are both working to protect water quality in the Carmel area, although each has different authorities and responsibilities in that effort. The Commission has primary responsibility

for protecting many coastal resources, including water quality, from the impacts of development in the coastal zone. The SWRCB and RWQCBs have primary responsibility for regulating discharges that may impact waters of the state through writing discharge permits, investigating water quality impacts, monitoring discharges, setting water quality standards and taking enforcement actions where standards are violated.

Carmel LUP as Submitted.

The City's amended LUP submittal includes a variety of important policies to address water quality issues. These include policies to develop a City-wide Storm Water Utility Program that will also address the City's need to implement a National Pollution Discharge and Elimination System permit; policies to regulate illegal discharges; watershed protection policies to retain natural drainages; restore areas beneficial to water quality; and so forth.

The submitted LUP also includes development policies that require the protection of natural drainage systems, site planning to address drainage and polluted runoff, and the use of Best Management Practices (BMPs). Specific standards include requirements to: design post-construction BMPs to treat, infiltrate, storm runoff; minimize impervious surfaces; use a water quality checklist in project reviews; and incorporate BMPs into commercial developments. Please see Attachment xx, pages xx-xx for the entire listing of LUP water quality policies submitted by the City.

Coastal Act Consistency

The Commission recognizes that new development in Carmel-by-the-Sea has the potential to adversely impact coastal water quality through the removal of native vegetation, increase of impervious surfaces, increase of runoff, erosion, and sedimentation, and the introduction of pollutants such as petroleum, cleaning products, pesticides, and other pollutant sources. Coastal Act Sections 30230 and 30231 listed above require that coastal water quality be protected through policies that manage these types of new development impacts.

In particular, new development often results in an increase in impervious surface, which in turn decreases the infiltrative function and capacity of existing permeable land on project sites. As discussed in the community character finding, redevelopment activity in Carmel has the potential to lead to increased impermeable surface, particularly on the smaller, 4000 square foot lots in the City where typically small structures are located. In the last several years the Commission has reviewed permits for residential demolition and rebuilds that have generally resulted in significant increased impervious coverage. For example, in the last year the average proposed increase in site coverage on 4000 square foot lots was approximately 375 square feet or 9%. This includes, though, a wide range of proposed changes in coverage, including some projects that reduced coverage slightly to projects that increased coverage by over 70% or greater than 1000

square feet.

The reduction in permeable surface therefore leads to an increase in the volume and velocity of stormwater runoff that can be expected to leave the site. The cumulative effect of increased impervious surface is that the peak stream discharge is increased and the peak occurs much sooner after precipitation events. Changes in the stream flow result in modification to stream morphology. Additionally, runoff from impervious surfaces results in increased erosion and sedimentation. In a setting such as Carmel, where informal street design (no curbs and gutters generally; unpaved road edges, etc.) and drainage are the norm, increased site runoff could have a significant impact on existing runoff patterns, ultimately resulting in increased erosion and a future need to manage runoff through engineered drainage structures. Thus, minimizing impervious coverage is essential to both protecting water quality, and maintaining the informal streetscape of Carmel.

Maintaining permeable surfaces and managing runoff onsite also helps to limit the impacts of pollutant runoff. Pollutants commonly found in runoff associated with new development include:

- petroleum hydrocarbons such as oil and grease from vehicles;
- heavy metals;
- synthetic organic chemicals including paint and household cleaners;
- soap and dirt from washing vehicles;
- dirt and vegetation from yard maintenance;
- litter and organic matter;
- fertilizers, herbicides, and pesticides from household gardening or more intensive agricultural land use;
- nutrients from wastewater discharge, animal waste and crop residue; and
- bacteria and pathogens from wastewater discharge and animal waste.

The discharge of these pollutants to coastal waters can cause cumulative impacts such as:

- eutrophication and anoxic conditions resulting in fish kills and diseases and the alteration of aquatic habitat, including adverse changes to species composition and size;

- excess nutrients causing algae blooms and sedimentation increasing turbidity, which both reduce the penetration of sunlight needed by aquatic vegetation that provide food and cover for aquatic species;
- disruptions to the reproductive cycle of aquatic species;
- acute and sublethal toxicity in marine organisms leading to adverse changes in reproduction and feeding behavior; and
- human diseases such as hepatitis and dysentery.

These impacts reduce the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes, reduce optimum populations of marine organisms and have adverse impacts on human health. They are particularly important to manage in the vicinity of significant marine resources such as Carmel Bay – an Area of Special Biological Significance and Ecological Reserve.

As summarized above, Carmel's submitted LUP contains a comprehensive set of water quality policies designed to protect and enhance water quality and the beneficial uses of local coastal waters and ground waters from adverse impacts related to land development. The objectives of the policies are three-fold:

- Protect, enhance and restore wetlands, streams, and groundwater recharge areas.
- Promote the elimination of pollutant discharge, including nonpoint source pollution, into the City's waters through new construction and development regulation including but not limited to site planning, environmental review and mitigation, and permit conditions of approval.
- Promote Best Management Practices to limit water quality impacts from existing development, including septic system maintenance and City services.

With the exception of two areas, -- minimizing impervious surfaces, and managing polluted runoff -- these policies contained in the Carmel LUP provide for the protection and enhancement of water quality and the beneficial uses of local coastal waters and ground waters from adverse impacts related to land development. Thus, as submitted, with the exception of the policies discussed below, the LUP is consistent with the water quality protection policies of the Coastal Act (30230, 30231).

Modifications

Minimizing Impervious Surfaces

As discussed above, minimizing impervious surfaces is critical to maintaining and protecting water quality in Carmel. As discussed in the Community Character finding, it is also critical to protecting the urban forest and informal streetscape of Carmel – both

essential pieces of Carmel's unique community character.

The City has submitted a water quality policy that requires the new development minimize development footprints and directly connected impervious surfaces, as well as the increase in new impervious surfaces. The LUP also includes a policy to require new development to protect the absorption, purification, and retention functions of natural systems on the site of proposed developments. Nonetheless, given the critical importance of this issue to the protection of water quality, particularly on the smaller, more constrained 4000 square foot lots of Carmel, it is necessary that the LUP have a specific impervious surface limitation for the small lot scenario. Without such specific limitation, it will be more likely that the small lots of Carmel will redevelop over time with more impervious surfaces, and that the cumulative impacts of these surfaces on water quality will be substantial.

Modification 7, therefore, requires that impervious surface on the 4000 square foot lots not exceed 50% or 2000 square feet. Such a limitation allows for a reasonable development envelope on these lots, while assuring that at least half of the available site area is available for natural percolation, as well as for the design of on-site drainage features. As previously discussed, most redevelopment projects in Carmel are resulting in increased impervious surfaces. In the last year, 4 out 7 proposed redevelopment projects proposed impervious surface coverage greater than 50% (ranging from 55% to 65%). Three other projects, though, were proposed at less than 50%. Thus, it is reasonable and feasible to limit coverage in this way. In conjunction with other proposed limits to protect community character, this limit also provides reasonable development options even with the 1600 square foot single story house. Thus, such a project would have an additional 400 square feet of impervious surface to work with, which might include, for example, a driveway of 150 square feet, and 250 square feet of walkway and outdoor patio surface.

Finally, it should be emphasized that this water quality modification also supports and works with the community character policies of the modified LUP that seek to protect the small scale look and feel, as well as the urban forest resources, of Carmel's residential neighborhoods. The coverage limitation will also assure that the informal streetscapes of Carmel do not gradually convert to hardscapes, with concrete gutters and other drainage features made necessary by increased impervious surfaces the watershed. Given the significant potential for redevelopment in Carmel, and the associated increases in coverage that will occur, even with the proposed limitations of the modified LUP, a specific coverage limitation is the only mechanism to assure water quality protection over the long run. Therefore, to assure consistency with Coastal Act sections 30230 and 30231, Modification 7 is necessary to require the 50% coverage limit on the 4000 square foot lot.

Managing Polluted Runoff

The application of appropriate design goals for sizing BMPs is critical to the successful

function of post-construction treatment Best Management Practices (BMPs) in removing pollutants in stormwater to the maximum extent practicable,. The majority of runoff is generated from small storms because most storms are small. Additionally, stormwater runoff typically conveys a disproportionate amount of pollutants in the initial period that runoff is generated during a storm event. Designing BMPs for the small more frequent storms, rather than for the large infrequent storms, results in optimal BMP performance at lower cost .

The Commission finds that sizing the proposed post-construction structural BMPs to accommodate the stormwater runoff from the 85th percentile storm event, in this case, is equivalent to sizing BMPs based on the point of diminishing returns (i.e. the BMP capacity beyond which, insignificant increases in pollutants removal (and hence water quality protection) will occur, relative to the additional costs). Therefore, the Commission requires that the proposed post-construction structural BMPs (or suites of BMPs) shall be designed to treat, infiltrate and filter the amount of stormwater runoff produced by all storms up to and including the 85th percentile, 24-hour storm event for volume-based BMPs, and/or the 85th percentile, 1-hour storm event, with an appropriate safety factor (i.e., 2 or greater), for flow-based BMPs. As submitted, the City of Carmel has not provided a specific design goal for BMPs, although it does have a policy generally addressing the treatment and filtering of runoff. Therefore, to assure consistency with Coastal Act sections 30230 and 30231, Modifications 60 and 61 are necessary to incorporate the 85th percentile design goal into submitted policies P9-348 and P9-356.

Conclusion

As modified above, the Carmel-by-the Sea LUP includes a comprehensive and adequate set of policies to address water quality. Therefore, the Commission finds that the LUP water quality policies as modified are consistent with Coastal Act sections 30230 and 30231.

G. Environmentally Sensitive Habitat

Coastal Act Sections 30107.5, 30231, and 30240 define ESHA and afford protection of such areas and their associated biological productivity, and state:

> **Section 30107.5** *Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*
>
> **Section 30231.** *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment,*

controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30240. *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Additional Section 30233 in part provides wetland protection as follows:

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:...

(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(7) Restoration purposes.

(8) Nature study, aquaculture, or similar resource dependent activities.

Although the City of Carmel-by-the-Sea is largely built out over most of its acreage, it does contain some areas of environmentally sensitive habitats. The proposed Land Use Plan re-submittal does an adequate job of ensuring that ESHA is protected pursuant to the Coastal Act policies.

First, the Land Use Plan identifies known ESHA in the City. The introduction to the Coastal Resource Protection chapter (pages 83 –92) and Appendix E: ESHA Study map describes the City's ESHAs including Monterey pine forest, wetlands, riparian forest, wet meadow, and coastal terrace prairie, and known occurrences of special-status plant and wildlife species, including Hickman's onion, and Monterey dusky footed woodrat. These are located in Pescadero Canyon, Mission Trails Park, and Carmel beach. The Commission notes that although Monterey Pine is identified as ESHA, it is not identified as a Special Status Species. This is apparently because when Appendix

E was writing in 1995, it did not yet have that status. Now it is universally recognized as a Special Status Species (CNPS 1B, Federal Species of Concern).

Second, the Land Use Plan provides for identification of additional ESHA in the future (Policies G9-22; P9-256), and also makes it clear that the maps show just currently designated ESHA (page 84).

Third, the Land Use Plan provides for protection of ESHA from most new development. Most of the ESHA is designated "Open Space." Public recreational and cultural uses and activities that are compatible with the natural resources are allowed (page 29). Policy 9-256 mimics Coastal Act language to " protect environmentally sensitive habitat areas against any significant disruption of habitat values. Only uses dependant upon those resources shall be allowed." Additionally, the Land Use Plan provides many very specific management measures for the three main ESHA areas to ensure that the public development is compatible with resource protection.

Private lots in ESHA are allowed limited single family development to address Constitutional takings issues (Policy P9-323). However, the Land Use Plan also provides for transfer of development credits (Policy P9-313) and/or public acquisition programs (see policy citations below) to hopefully prevent the remaining private ESHA parcels from developing.

In addition to the noted open space areas, Monterey pine (and other) trees occur throughout the City. The Land Use Plan contains numerous policies designed to maintain these trees (through not cutting them, appropriate pruning, avoidance of root damage, and other measures) and planting new ones. Appendix D is a detailed Forest Management Plan which covers the entire City.

Fourth, the Land Use Plan provides for buffers to ESHA consistent with Section 30240b. One-hundred foot buffers to riparian areas for chemical applications are established (Policy P9-315), as is a minimum 50 foot development buffer of Pescadero Creek (Policy P9-323). The ESHA appendix further indicates that a 100 foot buffer is recommended for Pescadero Creek (page 5-11 of Appendix ESHA Study) and mitigation measures are required for adjacent development (page 5-11 of Appendix ESHA Study). The Land Use Plan also commits to a program of notifying residents adjacent to ESHAs of protective measures (Policy P9-317). Elsewhere, a 30 foot ESHA buffer is required (Figure 9.7; page 5-24 of Appendix ESHA Study), including specifically a 30-foot vegetation buffer along the perimeter of Mission Trail Nature Preserve (Policy P9-321).

Finally, the Land Use Plan provides for many maintenance, rehabilitation, and improvement measures to ensure that EHSA remains vibrant. Examples of such measures include restoring native dune habitat (Policies P-9-181; P9-329), controlling invasive non-natives (Policy P-9-182), pruning so as not to disturb nesting birds (Policy P9-240). Almost all ESHA is within City owned land and the cited policies and others represent a commitment to maintain the City's ESHA. Furthermore, several policies

(e.g., O9-35, P9-199, O9-46, P9-310) commit the City to acquiring additional existing or potential habitat areas.

In conclusion, the sum total of cited and related policies will ensure protection of ESHA consistent with the cited Coastal Act policies.

However, there are two structural problems with the Land Use Plan ESHA related policies. Appendices A-1 through A-4 of the Forest Management Plan contain outdated ordinance references. These need to be evaluated in the context of the Implementation Plan and can not be certified at this time. Section IV of the Forest Management Plan repeats policies of the Coastal Resources chapter, but fails to update all those that reference the City Forester (as opposed to the Forest, Parks, and Beach Director).Therefore, modifications (see Modification 62 and 63) are necessary to correct and update these deficiencies. If so modified, the Land Use Plan will be fully consistent with Coastal Act ESHA policies.

H. California Environmental Quality Act (CEQA)

Section 21080.9 of the Public Resources Code (CEQA) exempts local governments from the requirement of preparing an environmental impact report (EIR) in connection with a Local Coastal Program (LCP). Instead, certification of an LCP by the Coastal Commission is subject to the requirements of CEQA. The Coastal Commission's regulatory program involving the preparation, approval and certification of local coastal programs has been certified by the Resources Agency under Public Resources Code Section 21080.5 as the functional equivalent of CEQA review. As a result of this certification, the Coastal Commission is exempt from the requirement of preparing an EIR in connection with a local coastal program. As set forth above, the Commission finds that the Carmel-by-the-Sea Land Use Plan as modified conforms with the Coastal Act policies regarding protection of the environment. The Commission finds that approval of the modified Land Use Plan will not result in significant adverse environmental impacts within the meaning of CEQA. The Commission further finds that there are no feasible alternatives or additional mitigation measures that would substantially lessen any significant adverse impact on the environment from approval of the Land Use Plan as modified.

Th7b

CITY OF CARMEL-BY-THE-SEA

LOCAL COASTAL PROGRAM

Volume I

COASTAL LAND USE PLAN

REVISED SUBMITTAL

FORWARDED TO:

CALIFORNIA COASTAL COMMISSION

By:

City of Carmel-by-the-Sea

November 12, 2002

City of Carmel-by-the-Sea

Local Coastal Program
Coastal Land Use Plan

Revised Submittal Forwarded to
The California Coastal Commission
By Resolution No. 2002-128
Carmel-by-the-Sea City Council
On November 12, 2002

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Appendix F: Historic Context Statement, Carmel-by-the-Sea

Introduction, Purpose and Organization

This element of the General Plan sets forth a Coastal Land Use Plan, which together with the Coastal Implementation Plan (published separately) constitute Carmel-by-the-Sea's Local Coastal Program.

The Coastal Land Use Plan sets forth goals, objectives, and policies that govern the use of land and water in Carmel-by-the-Sea consistent with Chapter 3 of the California Coastal Act of 1976 (as amended through January 2000). Chapter 3 of the California Coastal Act contains coastal resources planning and management policies that address public access, recreation, marine environment, land resources, development, and industrial development. This Coastal Land Use Plan groups these topics under three larger headings:

> **Community Character and Development.** This heading includes policies for topics in sections 30244 and 30250 through 30254 of the Coastal Act.
>
> **Access and Recreation.** This heading includes policies for topics covered in sections 30210 through 30224 of the Coastal Act.
>
> **Coastal Resource Management.** This heading includes policies for topics in sections 30230 through 30243 and 30251 of the Coastal Act.

Each of these topical headings begins with an identification of the Coastal Act sections relevant to Carmel followed by a discussion of the local setting and policy direction adopted by the City to address the requirements of the Act. Specific Goals, Objectives and Policies are then listed. Much of the background information and policy contained in this Coastal Land Use Plan is incorporated directly from existing elements of the *Carmel-by-the-Sea General Plan*. In addition, background information and policy from plans that address special topics are included as part of this Coastal Land Use Plan. Each of these plans is attached as an appendix:

- *Forest Management Plan*
- *Shoreline Management Plan*
- *Mission Trail Nature Preserve Master Plan*
- *Final Results of the Environmentally Sensitive Habitat Area Study Conducted for the City of Carmel-by-the-Sea* (ESHA Study).
- *Historic Context Statement, Carmel-by-the-Sea*

Cross-references appear in each of these original source documents to facilitate future coordination of amendments.

Goals, Objectives and Policies

Throughout this document goals, objectives, and policies are differentiated by an alphanumeric system. Goals, objectives, and policies are identified by the letters "G," "O," and "P," respectively. The second character identifies the General Plan element in which the goal, objective, or policy is found. Thus, "P9-1" refers to Coastal Land Use Plan Element (Chapter 9 of the *Carmel-by-the-Sea General Plan*) policy number one.

Background

In the general election of November 1972, the people of the State of California approved a ballot initiative known as Proposition 20, which established the California Coastal Commission and six regional commissions. The charge of these commissions was to manage the coastal zone as a resource of statewide interest through the exercise of permit authority. Under the provisions of Proposition 20, any proposed development occurring in the designated Coastal Zone required approval of a coastal use permit from the appropriate Regional Coastal Commission.

In 1976, the California Legislature replaced Proposition 20 with the California Coastal Act. Under this Act, the Coastal Commission retains permit authority until each coastal city and county prepares a local coastal program that addresses statewide policies in Chapter 3 of the Coastal Act. These Local Coastal Programs (LCPs) include a policy document (Land Use Plan or LUP) and a set of ordinances and resolutions to implement those policies (Coastal Implementation Plan or CIP). Once these two documents are adopted by the local government and certified by the Coastal Commission, permitting authority is returned to the local government.

Carmel is unique in terms of State coastal regulation. Under Proposition 20, the City was granted a "categorical exclusion" that exempted the City (except for approximately the first line of lots inland from the ocean) from the Regional Coastal Commission's permit authority. Following passage of the 1976 Coastal Act, the City was granted another "categorical exclusion" that remained in effect until Carmel's Coastal Program was certified and adopted. The categorical exclusions were granted in recognition of Carmel's local ordinances and practices that, with few exceptions, were already consistent with the Coastal Act.

The City was not, however, exempted from preparing a Local Coastal Program. Because the entire City falls within the Coastal Zone, all of Carmel's policies, practices, ordinances and plans must be in conformance with the requirements of the 1976 Coastal Act. The City achieved certification of a Land Use Plan in 1980 and nearly received certification of its Implementation Plan in 1983. However, disagreements over how to protect historic resources as part of community character stymied final certification of the LCP and resulted in loss of certification for the LUP. The City's efforts to complete its LCP were rekindled in the late 1990's and led to the certification of this document in December 2002.

The overriding policies of the Coastal Act, relevant to Carmel, require that the City:

- Protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and man-made resources.
- Protect special communities and neighborhoods, and retain their unique characteristics.
- Assure orderly, balanced utilization and conservation of coastal zone resources, taking into account the social and economic needs of the people of the state.
- Maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resource conservation principles and constitutionally and Coastal Act protected rights of private property owners.
- Assure priority for coastal-dependent and coastal-related development over other development on the coast.
- Encourage state and local initiative and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone.

Work Program and Issue Identification

The first step in preparing the LCP began in early 1978 with a review of local issues of concern to the community, related to the coastal policy groups. Through this analysis, over twenty different areas were identified which offered a possible conflict with the

larger size and more open space. As lots were sold and re-sold, the original lots were combined into larger holdings and often re-divided. This activity created a mix of lot sizes that responded more rationally to the unique site constraints in each block. Early homebuilders also planted and protected trees as an asset to the property and the community. The subdivision's east-west lot axis proved beneficial. Most lots have a long southern exposure providing maximum access to the sun's light and heat. This increased the popularity of outdoor living in garden and patio spaces and influenced residential building design. The subdivision orientation also maximized the number of lots with a potential ocean view.

The aftermath of the 1906 earthquake sent a stream of refugees down from San Francisco. Others came from East coast communities in New York and New Jersey where the Arts & Crafts movement and Bohemian lifestyle had already taken hold. Development in Carmel-by-the-Sea was rapid in the 1920's and 30's. By 1922, nearly the whole village was subdivided. This coincided with the arrival of artists, poets, writers, photographers, musicians, actors, and professors—the first of the Bohemians.

From simple beginnings, the City quickly developed a residential community and a strong, centralized business district. By 1940, just 24 years after incorporation, Carmel had a population of 2,837 and a housing stock of 1,575 units. This developmental period was critical in establishing community character. The dominant themes that continue to shape the City today were formed in these early years:

- Meeting the full range of local human needs, including health, safety shelter, social interaction, culture, commerce and growth, while accommodating the needs of coastal visitors;
- Designing buildings, infrastructure, and other improvements to a human scale;
- Enhancing and protecting the Monterey Pines, Coast Live oaks and other species of the natural environment that contributes to the high quality of life;
- Respecting the past as a continuing legacy that challenges each citizen to preserve the City's character in spite of on-going change;
- Preserving Carmel's primarily residential character with business and commerce subordinate to its residential character.

Residential Development

Early Influences

The single-family residential district is characterized by it architectural diversity, its informal roads and by its forest of pines and oaks. Residential neighborhoods surround the business district and display a wide architectural variety due to age, aesthetic and architectural preferences, lot size and through each building's response to site conditions. No tracts of similar homes were constructed in Carmel, and no one block was constructed in a single period of time.

Carmel City was the vision of Santiago Duckworth who purchased part of the Las Manzanitas Rancho from Honoré Escolle in 1888. Duckworth subdivided 164 acres bounded by Monte Verde, Pescadero Canyon and First Street, Monterey Street, and Ocean Avenue. In 1902, James Devendorf and Frank Powers took over the unsold land from Duckworth and formed the Carmel Land Company.

Although Devendorf inherited Duckworth's County-approved map of Carmel City with its conventional grid pattern, he did not hesitate to curve roads around trees or topographical features in later additions. His respect for the natural environment was in contrast to many developers who flattened hills and cleared trees. Devendorf encouraged the planting of trees so much that an illusion has been created of an area more wooded than it was originally. When he sold a lot, he threw in a few trees for good measure. If he actually got cash for the lot—which rarely happened—the buyer might have had a whole grove presented to him as a bonus. Early photographs show open meadows or coastal scrub with few trees west of Monte Verde except in natural canyons or near watercourses. The efforts of Devendorf and others who followed have created a more forested character for Carmel-by-the-Sea.

Many of the earliest homes built in Carmel-by-the-Sea were one-story cottages typical of turn of the century housing elsewhere in the country. Details of such cottages related them either to the Queen Anne style, the Colonial Revival style or the Craftsman style. Cottages of these types were built through the first decade of the twentieth century.

As Carmel continued to develop, its architecture was strongly influenced by the Arts and Crafts Movement. A reaction against the impersonal production of the Industrial Revolution and the loss of pride of craftsmanship, the movement had its roots in England but gained momentum in the United States after the 1893 Colombian World's

Exposition in Chicago. After 1893 dozens of arts and crafts societies were formed across the nation, including one in Carmel. Both the aesthetic characteristics of the Craftsman style, and its philosophic underpinnings, which linked it to progressive political, social, and artistic movements in the early twentieth century, made it popular with Carmel's academic, literary, and artistic residents.

Craftsman homes were characterized by horizontal proportions seen in the spreading lines of low-pitched, overhanging gable roofs and informal building plans; reliance on the honest use of materials such as wood, brick, and stone; the use of undisguised structural elements such as exposed beams, braces, and rafters for architectural beauty; and the enjoyment of the natural setting through porches, outdoor spaces, and the clustering of windows into horizontal bands. The architectural precedents for Craftsman homes were the wood traditions of Japan and India, as well as past styles such as the American Colonial and The English Tudor. M.J. Murphy, Charles Summer Greene and many others worked in Carmel with this style. Typical features of Craftsman homes in Carmel include stucco or shingled siding, "L" or "U" shaped plans which enclose a patio, and windows-either sliding, hinged casement, or double-hung sash in operation—which are framed by extended lintels and sills. The heyday of Craftsman building in Carmel lasted from about 1905 to 1930.

In the 1920's the emerging popularity of architectural revival styles set the stage for a burst of individualism and creativity in Carmel during the 1920's and 1930's. The English, French, Spanish, Italian, and other revival styles provided architectural inspiration. This fashion coincided in Carmel with an increase in building of summer homes by the well-to-do, as well as with new demands for traditional amenities by year-round residents. Many of Carmel's early larger homes date from this era. The rich diversity created by this tradition, as well as the earlier periods of Craftsman building, continues to influence each street and neighborhood today.

In the decades that followed, Carmel embraced many other architectural traditions such as Modern, the Bay Area Tradition and other styles. The LUP includes policies to update the Context Statement periodically as future amendments to the Plan to document these and other more recent architectural expressions that continue to shape Carmel.

Responding to Change

With its aging housing stock, the City is undergoing a remarkable turnover of housing that is likely to continue over the next several decades as older homes are replaced or remodeled to meet the needs of current owners. The City is charged with protecting and preserving the established design character of Carmel as well as its historic

resources. The City must plan for this change in a way that preserves the community character. This does not mean that changes should be avoided, but that when change occurs, it should not be out of character and, indeed, can be welcomed as a neighborhood improvement. To achieve this there must be community consensus on the elements essential to the City's character. Citizens must have confidence that building, zoning, and design ordinances will preserve these essential elements through new construction and remodels.

Were there a single architectural style that exemplified Carmel's character it would be easy to define and encourage this style in new construction. However, one of the unique strengths of Carmel has been its ability to embrace a multitude of architectural styles—indeed to encourage creativity and invention in its buildings. The result is an eclectic mix of architecture that nonetheless fits well together and with the environmental setting. There are several attributes that serve to bind these different designs together:

Scale. Underlying much of Carmel's design character is a respect for scale. Scale can be defined as a relationship of size among two or more objects. In Carmel, the scale tends to be small and related to human size. The City itself is compact, its lots are small, and its streets are narrow. The character established by existing small homes and cottages reinforces this intimate size relationship. All of these contribute to a human scale and a pedestrian-friendly, built environment.

Site Design. Another characteristic that transcends architectural style is good site design. Houses that follow the topography tend to complement the land rather than override its constraints. A respect for trees, preserving natural drainages and carefully integrating new landscaping with belts of existing native vegetation are all examples of the good site design principles that are characteristic of Carmel.

Sensitivity. When the City was young, few lots were developed and houses were often smaller. Under these conditions it was easy to avoid crowding neighboring buildings. However, as each lot develops and as houses grow to maximum allowed floor area it becomes increasingly difficult to preserve a visual separation between houses. This can impact privacy, views, and neighboring properties.

These brief descriptions are only a beginning. If the character of the residential districts is to be conserved through the coming years of rebuilding and remodeling, the City's implementing ordinances must guide rebuilding, rehabilitation and remodeling processes to ensure that new construction fits in with the design traditions and historical character that are already established. Policies in this element provide guidance to achieve this result.

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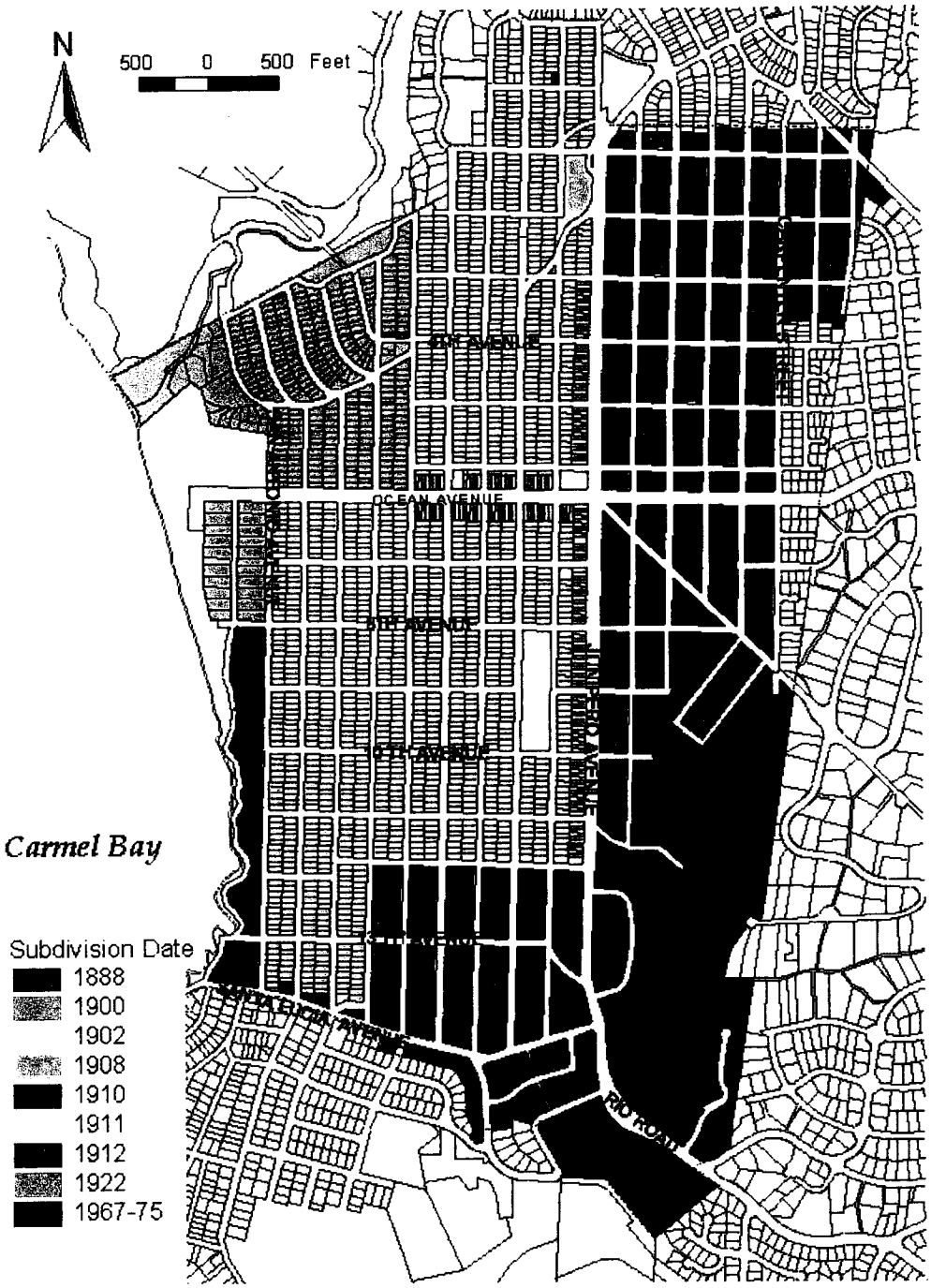

Figure 9.1 **CHRONOLOGY OF MAJOR SUBDIVISIONS**

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Commercial Development

Carmel's commercial district is a 39-acre area located near the center of the City and is surrounded by residential neighborhoods. The core of the commercial district (See Figure 9.3) is dominated by ground floor retail activity operating from relatively small shops located in many of Carmel's oldest commercial buildings. This area supplies goods and services to residents and visitors alike. Unique shops and the design qualities of this core area encourage pedestrian exploration and discovery making the city's downtown a strong visitor attraction. Architecture in the commercial core is diverse with many of the revival styles typical of the 1920's and 1930's on display. Scattered throughout this area are landscaped courtyards and intra-block walkways that provide important visual breaks and variety in building form and commercial business locations.

Surrounding the core area of the commercial district is a less intensively developed buffer area dominated by motels and apartments. This area forms a transition from the busy central core to the relative quiet of the surrounding residential neighborhoods. Since this buffer area is not retail-oriented and most sites are developed to provide a setting for permanent and transient residential uses, the buildings tend to have greater setbacks, more open space, more landscaping and more parking. These characteristics are appropriate for the land uses present in a buffer district. Design regulations for the core and buffer areas should support these differences.

Carmel is host to hundreds of thousands of visitors each year who come to enjoy its unique character, its beautiful beach, its cultural attractions and other amenities. This visitor industry is consistent with the purposes of the Coastal Act and the commercial uses found in Carmel's commercial area reflect a predominance of visitor-serving commercial use. For example, in spite of its small population of 4,081 residents Carmel has:

- 32 jewelry stores;
- 50+ restaurants;
- 120+ art galleries;
- 120+ clothing stores; and
- 50 hostelries with 948 authorized lodging units.

To provide visitors with overnight accommodations, 50 percent of all commercially zoned land in Carmel-by-the-Sea has been developed and occupied by hotel and motel

uses. A significant number of single-family residences also accommodate visitors on a monthly rental basis to augment commercial motel and hotel lodgings. Along with the City of Monterey, Carmel-by-the-Sea has the highest ratio of hotel/motel rooms to residential housing units of any City in Monterey County. There is approximately one hotel or motel room for every three residential dwelling units in the City. Table 1 compares the number of hotel/motel rooms to the number of housing units for various cities in northern Monterey County.

Table 1: Hotel and Motel Rooms per Dwelling Unit
Northern Monterey County Coastal Cities

City	Number of Lodging Rooms	Number of Dwelling Units	Approximate Number of Dwelling Units per Hotel/Motel Room
Carmel-by-the-Sea	948	3,433	3.6
City of Monterey	4462	13,448	3.0
City of Pacific Grove	1,087	8,071	7.4
City of Marina	543	8,699	16.0
City of Seaside	664	11,190	16.8

Sources: Monterey County Convention & Visitors Bureau; California Department of Finance, January 2000; EMC Planning Group

This data demonstrates that Carmel provides more than adequately for visitor commercial uses and is fully consistent with the intent of the Coastal Act.

Indeed, there is some risk that further visitor commercial development could unbalance the community in ways that would diminish its character and make it less of an attraction for visitors. Part of what makes Carmel so unique and attractive is the way that it has carefully balanced visitor and local needs over the years. Carmel remains a functioning city where residents live, work, and play as they engage in community life and pursue their dreams and aspirations. The fact that Carmel remains a full-time community, and not just a commercial tourist trap, is not lost on those who visit here. Tourists seek destinations that have unique qualities where they can see new things and have new experiences. The existence of village life is part of Carmel's attraction and needs to be protected if the City is to fulfill the intent of section 30253 of the Coastal

Act. For these reasons this Land Use Plan includes well-established policies that support existing hotels and motels, prohibits new units and supports a healthy balance in other resident and visitor commercial uses.

Community Infrastructure

The ongoing improvement of public and private property must rely on adequate public services. When such services are constrained, efforts must be made either to increase their capacity or to allocate their use for the greatest benefit.

In Carmel-by-the-Sea, the most critical infrastructure needs for the future are water, roads, and drainage. The improvement of property creates opportunities to implement long-term infrastructure plans that benefit the whole community such as utilities undergrounding and improved communications infrastructure.

Water Resources

Water is a critical resource for development throughout the Monterey Peninsula. Carmel-by-the-Sea is one of eight land use jurisdictions that are part of the Monterey Peninsula Water Management District. This special district coordinates water supply planning, distribution infrastructure and environmental protection. Water sources include the Carmel River system (river, aquifer, and reservoirs) and aquifers that underlie the City of Seaside. No water is imported from State or Federal water projects.

After reaching its safe, long-term capacity in the late 1980's, the Water District declared a moratorium on new connections and imposed limits on the remodeling of homes and expansion of commercial buildings. A strong conservation program and the development of a well in the Seaside Aquifer allowed the District to end the moratorium in 1993. Water is now distributed as a finite resource to each member jurisdiction through a District-wide allocation program. This supply is again nearly exhausted and constrains most development projects.

The City's share of District water resources is internally allocated to land use categories based on policies in the Local Coastal Program and secondarily in the Conservation, Land Use, and Housing Elements of the General Plan. These policies affirm the City's commitment to lots of record, and residential use (new homes, apartments, and remodeling) as the largest allocation for new development. In particular, existing subdivided lots of record zoned for housing should always be considered "first in line" for limited water resources. New subdivisions of land should be limited until existing

subdivided lots have a secure water supply to serve full build-out and additional water allocation units have been obtained from the District. As documented above, visitor-serving uses throughout the City have been well accommodated with prior water allocations to achieve consistency with the Coastal Act. Augmenting scarce water supplies to serve planned growth continues to be a City policy.

The City will monitor activities of the Water District and cooperate in developing programs to conserve water as well as to increase supplies. The City will support water projects that are financially and environmentally sound. Water projects and programs also must not lead to unacceptable levels of rationing during droughts.

Transportation, Roads and Drainage

The grid network of roads serving the community is a vital infrastructure asset that is under stress and deteriorating. A challenge facing the City is how to plan for the long-term maintenance of roads, and provide adequate road capacity while preserving their unique design character.

Many roads serve as part of the City's storm water drainage system, and therefore these two infrastructure systems are linked. As existing homes are rebuilt or enlarged their connection to roads and impact on drainage often changes. Larger homes cover more site area with impermeable surfaces causing more runoff. New driveways must interface with road edges without causing damage or interfering with drainage capacity. The City has adopted water quality and drainage control measures that apply during design review and building permit review of new and remodeled homes. Additionally, the amount of site coverage and impermeable surfaces proposed in new development has been limited to protect some percolation and infiltration capability on each site.

Urban drainage carries pollutants to Carmel Bay, an Area of Special Biological Significance and part of the Monterey Bay National Marine Sanctuary. Long-term planning must reduce these pollutants to comply with the Clean Water Act. This will require the development of improved drainage standards, storm water treatment and a means of funding Citywide improvements. The City has established a Storm Water Utility to address these issues and Best Management Practices that serve to minimize runoff and direct it onto permeable surfaces before it is conveyed to Carmel Bay. Likewise, the City is evaluating the feasibility of consolidating some storm water drains and fitting them with debris filters and oil and water separators. Street design topics are covered in this section of the Land Use Plan. Drainage issues and pollution mitigation are covered in the third section under Protection of Coastal Resources.

As development throughout the City continues, road and drainage improvement programs must continue to include aesthetic considerations as well as safety and function in the design. Street and drainage design should retain a "hand crafted" as opposed to "machine made" appearance, yet still perform the intended functions. Construction should use equipment that has the least environmental impact possible. Care must be taken not to overbuild City streets through excessive widening or unnecessary realignments that might make Carmel streets appear more broad, straight or urban.

The historic character of Carmel's narrow roads, with their respect for topography and their protection of trees, should be retained as a contributing element of neighborhood design. Often, there is a perception of too many vehicles and excessive traffic throughout the City. Narrow roadways and roadside vegetation help to slow traffic and, if designed properly, can make the City's streets safer for pedestrians. This is important in a village without sidewalks, where so many residents include walks in their daily routine.

Cultural Resources and Historic Preservation

Historic resources are an important element of Carmel-by-the-Sea's community character. These resources and the City's approach to protecting them are discussed below.

Architecture and Community Character

Each generation has left its imprint by contributing to the diversity of architecture found in Carmel. The rich, visual experience found here owes much to this mix of architectural styles. As noted above, early development in Carmel was greatly influenced by the Arts and Crafts movement. This movement stressed the use of simple designs and natural materials—quite unlike the extravagantly detailed architecture of the earlier Victorian period. In the 1920's and 1930's several European Revival styles became popular. Later periods saw the introduction of more modern styles. Underlying this architectural diversity, are environmental influences and patterns of scale and form that consistently reappear to establish Carmel's character.

Environmental influences include natural elements such as topography, vegetation and climate. As Carmel-by-the-Sea has developed over time, efforts have been made to adapt man-made elements to these underlying natural conditions. In the residential districts, roads are typically not built to full width and they curve and undulate to follow the topography and to make room for trees. In the commercial districts,

sidewalks often curve or are frequently interrupted by trees and mini-parks. Most shops and businesses are built to face sidewalks and courtyards to promote an open exchange between interior and exterior.

In recognition of this close relationship between the natural and built environments, and perhaps intended to enhance this fit, many of the City's buildings have been designed with natural materials, pleasant open spaces and abundant landscaping with native plants. Carmel Stone, local granite and the frequent use of wood in hand carved doors, window frames, sills, moldings, roofing materials and signs are all design features that contribute to the village character of the City. These form a contrast to the glass, steel, plastic and featureless gray concrete so often found in other, more urban cities.

Attention to detail and emphasis on fine craftsmanship can be seen in the varied architecture of Carmel; local builders have embellished their work with detailing and individual style, which creates a unique and appealing building design. Most of Carmel-by-the-Sea's historic buildings exhibit myriad detailing, some of it intricate and some bold: surfaces are broken up by ridges, insets, decorative tiles, cavities, niches and abrupt changes of material; textures exhibit a great variety, from smooth-troweled plaster, brick, stone, rock or exposed aggregate to painted, carved or unfinished wood; corners often include bevels, bullnoses, cornices and moldings.

The open spaces between buildings in the commercial district are an integral part of the design of the community. The significant buildings in this district tend to use open space, particularly courtyards, and building spaces and shapes that encourage pedestrian exploration and circulation. Courtyards invite pedestrians onto private property away from the street. These courts increase the amount of building surfaces and facades on a building, and encourage the creation of additional and smaller shop spaces. In this way, the building design within the central commercial district has subtly influenced the land use patterns and economic vitality of the City as a whole.

Courtyards also tend to conceal many open spaces and building forms from the direct view of pedestrians along the street. Through such concealment, pedestrians are encouraged to explore the limits of these open spaces and discover hidden shops off the beaten path. This alternative pedestrian circulation pattern is encouraged in the City's commercial buildings through the use of arches to define building openings, inviting textures on pedestrian walking surfaces, directory signs at court entrances to identify what lies within, and the unfolding mystery of revealed open spaces and new building forms as pedestrians wander through the commercial courts and walkways. These courtyards are even more effective when they are linked from street to street, or from one property to another. Through-block interconnections also serve as shortcuts for

local residents who, by knowing these alternate routes, can avoid crowded sidewalks. These unique open spaces and intra-block connections are an important part of the design character of the commercial district and, when associated with significant buildings, should be protected in a similar manner as the buildings to which they relate.

Protection of Historic Resources

Although the Coastal Act does not specifically discuss historic preservation, this topic is related to the preservation of character required by sections 30251 and 30253 of the Act. The purpose of this component of the Land Use Plan is to provide a framework for policies that address the preservation of the diverse and valuable historic resources in Carmel. Its primary goals are to educate residents and visitors about the unique architectural, cultural and historic identity of Carmel-by-the-Sea, and to promote the identification and preservation of structures and sites that best represent this history. The addition of this component to the Coastal Plan reflects Carmel's commitment to the preservation of its important historic resources and the City's recognition of the role that historic resources play in defining community character.

The types of historic resources in Carmel are classified using the criteria established in the California Register of Historic Resources.[1] These range from architecturally significant historic buildings and collections of residences that form distinctive neighborhoods to those associated with important persons or events in Carmel's history. It also includes street features, landscaping, and both prehistoric and historic archaeological resources. (A more definitive discussion of historic resources found in Carmel is contained in the Historic Context Statement. See Appendix-F.) All these significant historic resources contribute to the City and its Sphere of Influence. They help to create a unique identity for the City that promotes Carmel as an attractive place for both residents and visitors. These buildings and sites serve as important reminders of Carmel's rich history and the patterns in which it developed. Extending beyond its contributions to the quality of life in Carmel, preservation of cultural resources also

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[1] The California Register has four criteria for historic significance. These are: (1) the resource is associated with events that have made a significant contribution to broad patterns of local or regional history or the cultural heritage of California or the United States; or (2) the resource is associated with the lives of persons important to local, California or national history; or (3) the resource embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; or (4) the resource has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

provides direct economic benefits by maintaining the character and charm that makes this an attractive visitor destination. The character of Carmel, while being diverse and eclectic, also provides an established historical context for contemporary architects and builders to work within so that their designs can become new, compatible contributions to the community.

To be most effective, historic preservation efforts should be integrated with the City's other permit processes such as design review and land use development approvals. This plan contains policies that respond to the Coastal Act through a combined approach of conservation and preservation. *Conservation* allows change and new construction as long as it is consistent with established character. This approach is appropriate for new buildings, remodels, façade changes and public way improvements involving non-historic resources. The City implements conservation of its character through its Design Guidelines for the residential district, the commercial district and for the public way. The overall character of the City can be conserved through appropriate policies related to the urbanized forest, roadway design and building design. *Preservation* requires that historic resources be protected and rehabilitated without changes that would damage their integrity[2]. Specific historic resources will be preserved after identification through an ongoing survey and then implementing preservation programs that are effective. Only changes consistent with the Secretary of the Interior Standards for the Treatment of Historic Properties will be allowed unless environmental review demonstrates that this is not feasible.

A greater understanding of and appreciation for the cultural heritage of Carmel can be fostered through a comprehensive historic preservation program. This includes the preservation of local architectural resources and archaeological artifacts and sites, as well as conservation of the landscape features such as the parks, seashore, roadside greenbelts and natural setting that have played an integral role in making Carmel what it is today. This program will help to promote an ethic of cultural stewardship,

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[2] Integrity is based on why a property is significant. Ultimately, the question of integrity is answered by whether or not the property retains the identity for which it is significant. The steps is assessing integrity are (1) defining the physical features that must be present for a property to represent its significance, (2) determining whether theses features are still visible enough to convey significance, (3) determining whether the property needs to be compared to other similar properties to understand its significance and (4) determine which aspects of integrity are vital if the property is to qualify as a resource (adapted from the National Register of Historic Resources, Bulletin #15).

encouraging the entire community to become actively involved in retaining and protecting these special resources of Carmel-by-the-Sea.

The initial step in an historic preservation program is a reconnaissance survey of potential historic resources. This is followed by thorough research and documentation in an intensive survey using the themes established in the Carmel Historic Context Statement that explore the historic people, periods, places and events important to Carmel.[3] This survey process identifies all resources that have historic significance and are eligible for listing on the California Register of Historic Resources. These sites, structures and objects are then listed on the Carmel Inventory of Historic Resources. Those properties not listed in the Inventory shall be considered not historically significant unless additional information or the passage of time initiates the need for re-evaluation.

Complementary policies and programs which will further the preservation of Carmel's cultural resources include:

- Study and resolve possible existing conflicts between Building, Fire, Health and Housing Codes. Allow use of the State Historic Building Code.
- Initiate measures to take advantage of state and federal Capital Improvement Programs for the preservation and enhancement of Carmel's cultural resources.
- Delineate tax advantages and tax incentives within the private and public sectors.
- Study zoning codes and coordinate land use planning with historic preservation goals.
- Explore public funding opportunities at the federal, state, regional or local levels, to underwrite preservation activities.

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[3] An historic context is a body of information about historic properties organized by theme, place and time. A single historic context describes one or more important aspects of the development of an area relating to its history, architecture, archaeology and culture. A context may be based on one or a series of events, patterns of community development, or associations with the lives of a person or group of persons that influenced the destiny and character of a place or region (from National Register Bulletin #24). Currently there are five themes developed in Carmel's Historic Context Statement. They are: (1) Prehistory and Hispanic Settlement, (2) Economic Development, (3) Government, Civic and Social Institutions (4) Architectural Development in Carmel and (5) Development of Art and Culture.

- Investigate private sector funding and lending policies detailing less restrictive preservation code requirements.
- Encourage citizen support of the preservation of its cultural resources by cooperating with and encouraging local historic preservation programs.

In addition to the Inventory, the City also will establish a local Register of Historic Resources. Owners may voluntarily request listing on the register as a way to provide public recognition of their historic resource and to receive enhanced benefits. Registered properties will receive a plaque that can be mounted on the property to identify its historic significance. Registered properties also will appear on any maps of cultural resources that are used to publicize and celebrate the City's rich history. Finally, registered properties may access enhanced financial benefits that are established for historic resources such as fee reductions for building permits and participation in Mills Act programs that reduce property taxes. It is desirable to place on the local register as many of the City's identified historic resources as possible so that the educational value of the program is maximized.

Archaeological Resources

Archaeological resources from both the prehistoric period and the early historic period can be found in Carmel. Before establishment of the Carmel Mission and subsequent ranching and settlement by Europeans native populations occupied the coastal area of Monterey. During this pre-history period, the Carmel Area provided food and materials for the Costanoan/Ohlone culture. The establishment of the Carmel Mission and the early years of European settlement marked a new period that also is important to an understanding of the cultural development throughout the Carmel region as well as California.

This historical development pattern in Carmel is similar to that of other urban areas in California that have produced archaeological resources dating from the late nineteenth and early twentieth centuries. Potential finds from the area's early historical period will typically consist of such things as the foundations of former buildings, evidence of early utilities, refuse deposits and privy pits. Such underground features can often address research questions that are beyond the scope of written history, and can thus be significant finds.

It should be kept in mind that archaeological resources pertaining to the Native American, Spanish and Mexican eras also could be buried in the previously built out areas of the City. Early buildings tended to have a smaller impact on the landscape

than modern buildings. Consequently, there is a potential for archaeological resources to have survived intact under buildings, roads, and other features of the landscape.

General areas of archaeological significance are shown in Figure 9.2. Policies to protect these resources are included in this Element.

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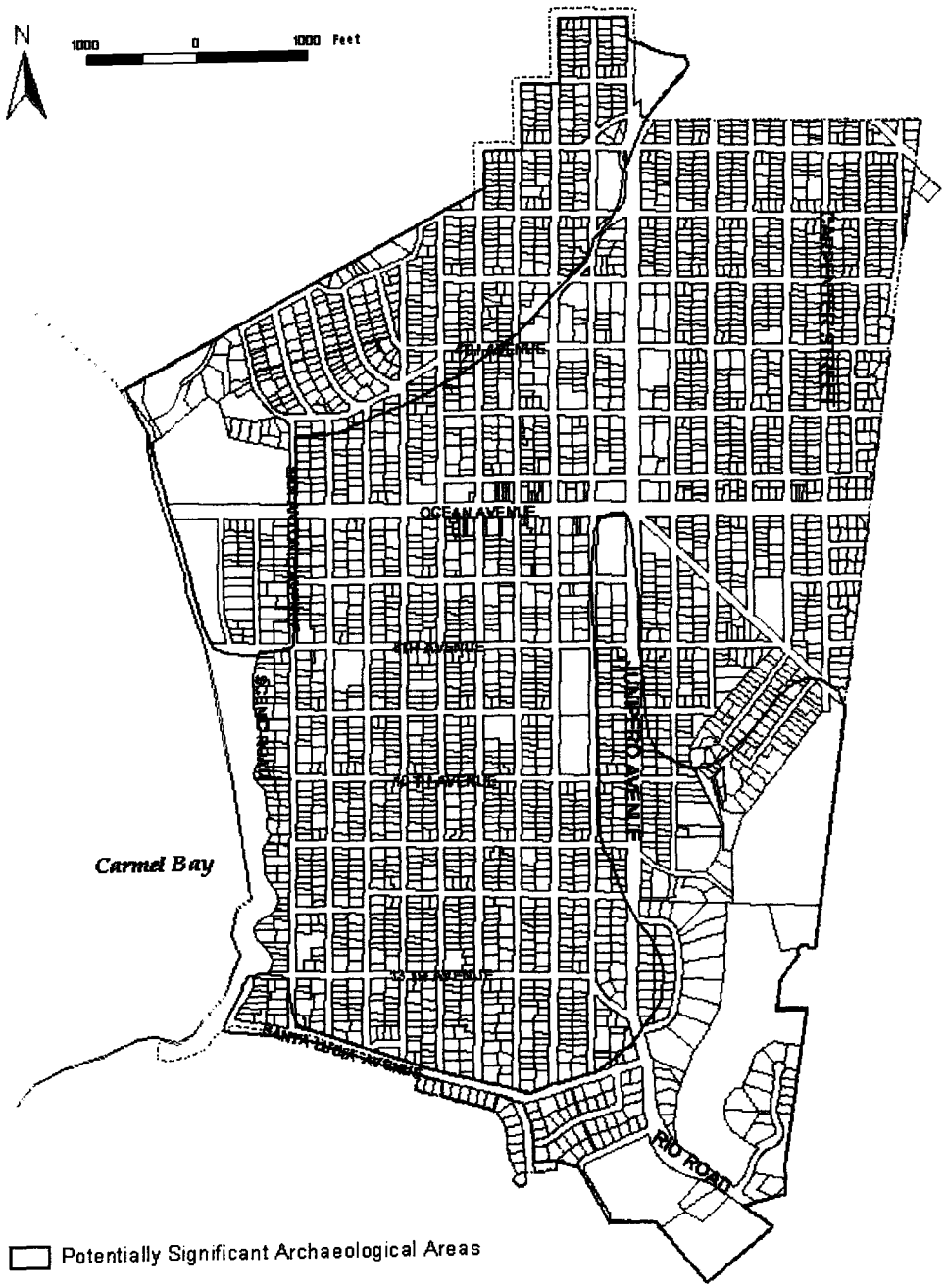

Figure 9.2 **AREAS OF POTENTIAL ARCHAEOLOGICAL SIGNIFICANCE**

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Land Use Designations

Preservation of the existing land use pattern is a fundamental policy of this Land Use Plan and is controlled through the City's Coastal Implementation Plan. These two documents work together to provide policy direction and regulations designed to protect the City's unique residential village character. Additionally, the City has prepared several Master Plans and Management Plans on special topics to aid in maintaining the City's character.

There are four primary land use designations used in the City of Carmel-by-the-Sea Coastal Land Use Plan, and these correspond with more detailed designations contained in the Implementation Plan. Each is described below, and Figure 9.3 shows the Land Use Plan Diagram.

Residential

This land use plan identifies two primary residential land use designations – Single-Family Residential and Multi-Family Residential. Each designation is described below.

Single-Family Residential. This area is intended to provide for single-family residential development at densities ranging from two (2) units per acre to eleven (11) units per acre. Assuming an average population of 1.5 to 2.5 persons per unit this allows a maximum population density of 16.5 to 27.5 persons per acre. Public/quasi-public uses and overnight accommodations currently operating under a use permit are also allowed. Above-ground building intensity in this area may not exceed 45 percent floor area ratio and all development requires at least 45 percent open space. Proportionately less floor area and greater open space are required on larger lots.

Multi-Family Residential. This area is intended to provide for multiple family residences at a maximum density of thirty-three (33) units per acre or forty-four (44) units per acre when affordable housing is provided. Existing hotel and motel uses are allowed and may be reconstructed. Existing commercial buildings occupied by uses serving residential needs are also allowed, although additional commercial floor space is not. This area is also appropriate for public uses. Assuming an average population of 1.0 to 2.0 persons per unit, this allows a population density of 33 to 66 persons per acre. Maximum building intensity for this area is limited to 80 percent to 90 percent floor area ratio depending on the quality of design. Minimum required open space is 45 percent of each site.

Commercial

This land use plan identifies two primary commercial land use designations - Core Commercial and Residential/Commercial. Each designation is described below.

Core Commercial. This area is intended to provide for a wide range of retail and service uses in scale with the overall residential character of the community. More intense commercial activities such as retail, restaurant and visitor commercial uses are appropriate in this area. Less intensive development may be appropriate to preserve the unique character and ambiance along Ocean Avenue. Mixed-use developments of commercial and multi-family residential uses at a maximum density of thirty-three (33) units per acre are allowed. This area is also appropriate for public service uses. Assuming an average population of 1.0 to 2.0 persons per unit, this allows a population density of 33 to 66 persons per acre.

Maximum building intensity in the core commercial area is limited to 95 percent and 135 percent floor area ratio for one and two story buildings, respectively. More open space and less floor area is required on larger sites. Throughout the Core Commercial area, floor area bonuses (up to 15 percent) and density bonuses (up to 35 percent) are allowed as incentives for affordable or senior housing and for special design amenities.

Commercial/Residential. This area is intended to provide for a mix of residential dwellings and a limited range of office and service uses in scale with the character of the community. Less intense commercial uses and visitor accommodations are allowed in this area. Mixed-use developments of commercial and multi-family residential uses at a maximum density of thirty-three (33) units per acre are allowed. This area is also appropriate for public service uses. Assuming an average population of 1.0 to 2.0 persons per unit, this allows a population density of 33 to 66 persons per acre.

Maximum building intensity in the Commercial/Residential area is limited to 70 percent and 80 percent for one and two story buildings, respectively. More open space and less floor area is required on larger sites. Throughout the Commercial/Residential area, floor area bonuses (up to 15 percent) and density bonuses (up to 35 percent) are allowed as incentives for affordable or senior housing and for special design amenities.

Open Space/Recreation/Cultural

These areas are intended to provide for public open space, beach and recreation lands available for public use, and public and quasi-public facilities created to promote cultural and senior-citizen activities. Uses and facilities that are committed to public

recreation, cultural activities, and senior-citizen activities, that are compatible with the natural resources are allowed.

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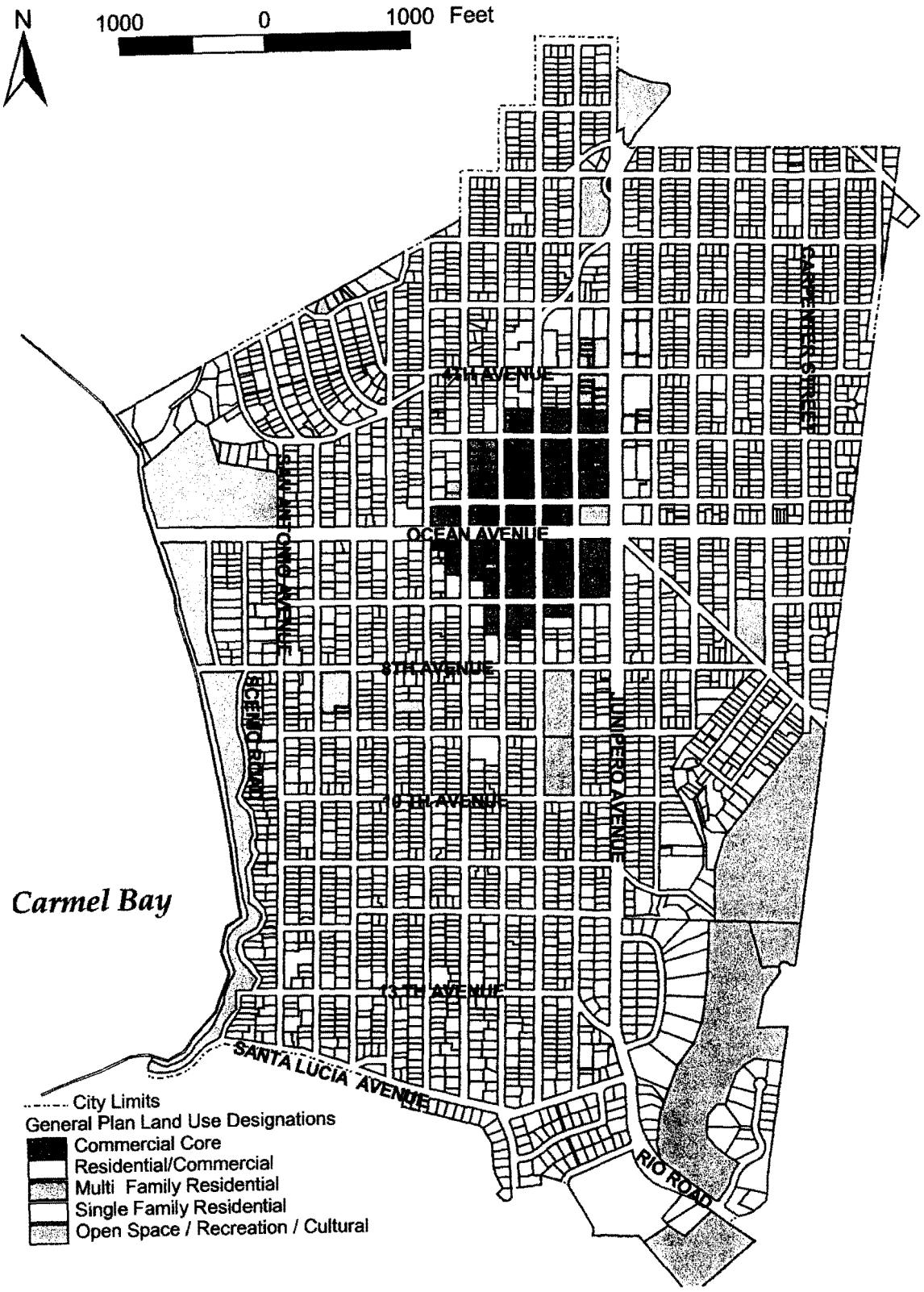

Figure 9.3 **GENERAL PLAN LAND USE MAP**

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Goals, Objectives and Policies

Community Character

G9-1 To preserve the residential village character and perpetuate a balance of land uses compatible with local resources and the environment.

O9-1 Retain the established patterns of land use throughout the City.

P9-1 Preserve the boundaries of the single-family residential area and allow rezoning within this area only to less intensive uses such as open space or parkland.

P9-2 Contain the commercial district within an area no larger than the 1982 boundary shown in Figure 9.3 of the Land Use Element.

P9-3 Preserve the multifamily district as a residential area. Prohibit new commercial construction in this area but allow the existing amount of commercial space and existing hotels/motels to remain as a conforming use.

P9-4 Preserve the development pattern established in the commercial area with a central core area of ground floor retail and service activities surrounded by a less intensive buffer area of residential, motels, offices and other uses.

P9-5 Continue to encourage mixed land uses that create new second floor apartments located over ground floor retail and service uses in the commercial district on streets where a pattern of second story buildings already exists.

O9-2 Adopt standards for subdivisions that will retain the scale and character of the City and reflect the subdivision and development patterns within existing neighborhoods.

P9-6 Prevent the creation of new lots of less than 4,000 square feet in area. Encourage the formation of larger lots with proportionately lower allowable site coverage and floor area and with greater potential for open space.

P9-7 Prohibit any further subdivision and/or creation of new building sites west of San Antonio Avenue and within any block fronting on North San Antonio Avenue or Scenic Road.

P9-8 Discourage any future subdivision of land or lot-line adjustment unless it can be demonstrated that the character of the block and neighborhood will be maintained.

P9-9 Preserve significant areas of vegetation and open space when approving subdivisions and lot line adjustments through the appropriate siting of buildings and other allowed improvements.

P9-10 Evaluate and minimize the impacts of proposed lot line adjustments and subdivisions on traffic, access, trees, topography, utilities and public services through the approval process.

P9-11 Inventory all building sites that contain portions of lots or lot fragments left over from previous subdivisions. Consolidate all lots or portions of lots, with adjoining lands within the same building site through the filing of lot merger or lot line adjustment documents when additional development is proposed.

P9-12 Establish criteria for evaluating lot line adjustments and subdivisions that will protect environmental resources, and ensure that proposed lots will be consistent with the pattern of existing parcel sizes within the surrounding neighborhood

Residential Development

O9-3 Preserve the traditional characteristics of scale, good site design and sensitivity to neighboring sites in the single-family residential district through the design approval of new homes, additions and exterior remodeling. Encourage the construction of residences that are diverse and innovative in design yet compatible with the forest setting, site design and materials established by other structures within the neighborhood and adopted Residential Design Guidelines.

P9-13 Require design review of proposed developments in the residential districts that are near designated parkland or that involve severe slopes, large structures or unusual design, to protect the character

of individual neighborhoods and avoid inharmonious or out-of-scale development.

P9-14 Apply the City's Residential Design Guidelines that explain the qualities that are characteristic of the community to assist in the preparation and approval of plans for residential development through the design review process. Include provisions for scale, mass, bulk, height, setbacks, open space, landscaping, exterior materials, lighting and community character. Establish procedures for using the guidelines that will allow flexibility and creativity in architectural expression yet maintain continuity in the design character of the residential district.

P9-15 Establish maximum limits on site coverage and floor area in order to preserve open space and avoid excessive mass and bulk. Establish provisions for a smaller ratio of allowable coverage and floor area on larger sites and on sites constrained by environmental factors to preserve open space, vegetation, natural landforms and the character of surrounding neighborhoods.

P9-16 Establish landscaping standards to preserve the urban forest of Monterey pines, Monterey Cypress, Redwoods and Coast Live Oaks, and encourage informal gardens using native vegetation to maintain the natural character of open spaces in the residential areas.

P9-17 Consider the effect of proposed residential construction on the privacy, solar access and private views of neighbors when evaluating design review applications. Avoid designs that are insensitive to the designs of neighboring buildings. Attempt to achieve an equitable balance of these design amenities among all properties affected by design review decisions.

P9-18 Establish and enforce permit standards for properties fronting on and to the west of North San Antonio and Scenic Road (the Beach District). The standards shall address identification and preservation of possible prescriptive rights of access, securing continuous lateral access and protection of public viewsheds to and along the coast. Limit the height of buildings in this area to 18 feet.

P9-19 Promote the undergrounding of utilities where feasible and with minimum detriment to the root systems of trees.

P9-20 Recognize the contribution of existing public and quasi-public land uses in the R-l district that serve local needs. Allow these existing uses to continue, but limit their expansion and minimize impacts on surrounding R-l neighborhoods.

P9-21 Limit public and quasi-public uses in the R-l district (such as schools, churches, clubs and foundations) to those sites already established. Prohibit the establishment of new sites and the enlargement of existing sites.

P9-22 Require use permits for all public and quasi-public uses in the R-l district and only allow modifications to these uses through use permit amendments. Limit the physical expansion of any existing structures and the construction of new facilities and uses to those that will not materially increase traffic, noise, parking demand, or create other adverse impacts on surrounding R-l neighborhoods.

Commercial Development

G9-2 Recognize the qualities and attributes that make up the unique architectural character of Carmel, retain these qualities in existing buildings, and encourage the use of them in new structures.

O9-4 Apply design regulations for the commercial district that will protect its established character while supporting the land uses contained therein.

P9-23 Preserve the existing land use pattern in the commercial district with retail uses limited to the core area at ground level surrounded by a buffer area of residential uses, motels and offices that provide a transition to the residential district. Ensure that land use and design standards for these two areas remain coordinated.

P9-24 Continue to encourage the established mixed-use pattern (residential over commercial uses) in all commercial districts.

P9-25 Protect the special and unique character of Ocean Avenue and the surrounding commercial area. Ensure, through the administration

of land use and design regulations, that the architecture, landscape, scale and ambience of this area is maintained.

P9-26 Retain the scale and variety of design established in the retail core when considering changes to buildings that are not historic. Protect, preserve and rehabilitate historic commercial architecture that represents the character, ambiance and established design context of the commercial area.

P9-27 Preserve all existing courtyards in the core of the commercial district as a distinctive architectural feature of the City's pedestrian-oriented retail area. Encourage the establishment of new courtyards and intrablock walkways.

P9-28 Implement design regulations and design guidelines to ensure that buildings and storefronts in the retail core maintain the design features characteristic of this area including appropriate scale, minimal setbacks, attractive landscaping and consistency in the treatment of windows, awnings, exterior materials and building lines throughout each building.

P9-29 Retain a less intensively developed buffer area surrounding the core that provides a transition to the residential neighborhoods. Ensure that design standards for this buffer area reflect more open space, landscaping, setbacks and on-site parking typically needed for the uses in this area.

P9-30 Prohibit new driveways on Ocean Avenue leading to off-street parking facilities in the central commercial district to conserve the pedestrian-oriented design character of this area and avoid auto/pedestrian conflicts.

P9-31 Maintain zoning regulations that avoid land uses of large size and scale (5,000 square feet or more) that have high traffic and parking generation rates such as retail or restaurant uses.

O9-5 Maintain diligent control over signs and other advertising or notice-attracting facilities in order to avoid unsightly, bizarre, and/or out of scale visual impacts, including exterior lighting and lights from window displays.

P9-32 Prohibit unsightly design elements such as excessive numbers of signs, nonfunctional awnings, exterior displays, interior displays, and excessive interior lighting used primarily as advertising or attention-getting features visible from the public rights of way.

P9-33 Prohibit business signs incorporating lights, luminous or fluorescent paints, or movement.

P9-34 Encourage business signs that are simple in graphic design, informative of the business use, and compatible in color and design with adjoining structures.

Community Infrastructure

Water Resources

G9-3 Protect, conserve and increase Carmel's available water resources and water quality.

O9-6 Maintain and enhance a viable domestic water supply for the City through conservation techniques and direct involvement in regional water policies, including cooperation with the Monterey Peninsula Water Management District (MPWMD) and the California-American Water Company.

P9-35 Monitor effects of the Carmel Area Waste Water District and other cooperating agencies in the development of a non-potable water reclamation (recycling) program to conserve available potable water resources; participate in any reallocation of water after implementation of the reclamation program.

P9-36 Maintain priorities for water allocations based on the General Plan/Coastal Plan. Give highest consideration to residential uses, including residential lots of records, and to Municipal projects that serve the broader community over other types of uses in the event water supplies are too limited to serve all forms of potential development.

P9-37 Institute conservation measures to preserve compliance with the City's water allocation limits. Retrofit commercial and residential buildings with conservation devices. Consider adopting ordinances that will impose penalties for non-essential water use.

P9-38 Participate in water conservation programs established by the City or as developed by the California-American Water Company and the Monterey Peninsula Water Management District.

P9-39 Participate with other jurisdictions and with the Monterey Peninsula Water Management District in periodic reviews of the District-wide allocation system in order to maintain equitable distribution of potable water and participate in studies supporting the development of new water sources.

P9-40 Use appropriate vegetation for all public right-of-ways. Require drought-tolerant plants for at least 75% of the commercial and residential landscaping on each development site. Encourage the use of native plants in all landscapes.

P9-41 Explore and utilize natural springs within the City for landscaping and other public purposes.

O9-7 Maintain an effective program to monitor water use in the City and to ensure the availability of water to fulfill the goals of the General Plan.

P9-42 Analyze the potential net increase in water demand that may be generated by any proposed change and/or intensification in land use. Prohibit the approval of any development application if water for the proposed type of project is unavailable within the allocation.

P9-43 Establish priorities for ongoing water use in the event that further reduction of water consumption is required (e.g. during droughts or State-ordered cutbacks). Give highest priority to residential uses and essential services.

P9-44 Prohibit new subdivisions requiring additional water resources until water supplies are available to, and reserved for, all existing subdivided parcels.

Transportation

G9-4 Provide and maintain a transportation system and facilities that will promote the orderly and safe transportation of people and goods, and at the same time, preserve the residential character and village atmosphere of Carmel.

O9-8 Preserve the traditional grid pattern and two-way flow of most streets and ensure that street projects enhance pedestrian circulation in the community while minimizing the impact of motorized vehicles.

P9-45 Maintain the current street configurations. Maintain or reduce paving widths in the residential areas, in order to maintain safe speeds and preserve the residential character.

P9-46 Prohibit the construction of formal sidewalks and concrete curbs in the R-l district. Allow informal pedestrian paths and drainage improvements where needed. Control other construction (e.g., retaining walls, pavement, etc.) in the City's public rights-of-way.

P9-47 Implement road maintenance and reconstruction practices that will preserve the hand-made appearance of City streets (e.g. meandering alignments, non-uniform surfaces, variable contours and informal edges).

P9-48 Continue to restrict street signs and only permit those signs that are necessary and essential for public safety.

P9-49 Maintain and encourage informal landscaped median strips and natural landscaped areas within public rights-of-way.

P9-50 Discourage high volume through-traffic.

P9-51 Prohibit the removal of significant trees within public rights-of-way except when required for health and safety.

O9-9 Preserve and enhance the qualities that contribute to the residential character of the community, including quiet neighborhoods, low levels of illumination, lack of nighttime activity, safe environment, pedestrian use of streets, and maintenance of property values by mitigating the adverse impacts of high volume through-traffic.

P9-52 Design and construct where appropriate, roadway improvements which eliminate the adverse impacts of high volume through-traffic.

P9-53 Recognize that the impact of a large number of nonresident vehicles including tourist buses and resulting traffic patterns is not consistent with the residential character of Carmel. Mitigate

impacts on visual quality, circulation and ambience to the extent possible.

O9-10 Recognize that Carmel is a limited resource and limited in size, and that it is not practical to provide sufficient parking for the total demand at every location; it is desirable, however, to remove parking off congested streets and provide, where practical, alternate parking where it could be removed from public view and in a scale appropriate to Carmel.

P9-54 Benefit to and impact on residents of Carmel-by-the-Sea and its visitors shall be the primary factors to be considered when evaluating and deciding upon development of off-street parking facilities.

O9-11 Require that all new developments provide sufficient off-street parking facilities.

P9-55 Adopt and enforce off-street parking and loading regulations that incorporate realistic requirements based on broad categories of land use as well as the amount of floor space and location of the property. Apply these requirements for all new development and for changes in use that will result in increased parking.

P9-56 Use average demand factors instead of peak demand when establishing parking requirements. Recognize that street parking resources are part of the supply. Avoid overbuilding parking capacity.

P9-57 Use off-site parking and fees in-lieu of parking, in order to meet parking needs generated by core area uses.

O9-12 Maintain a sufficient supply of short-term parking with frequent turn over for the primary benefit of residents.

P9-58 Retain short-term parking spaces at the corner of each block to serve short-term parking needs.

P9-59 Consider a parking management program for the commercial area to provide for the needs of residents, employees and visitors in the most appropriate locations in the commercial area. The

parking program shall ensure that the City maintains adequate, convenient parking for residents and visitors alike.

Cultural Resources

Historic Preservation

G9-5 Promote the identification and preservation of historic resources including buildings, structures, objects, sites, districts, and archaeological resources that represent the unique architectural, cultural, and historic and prehistoric identity of Carmel-by-the-Sea. The definition of historic resources shall include the built environment, prehistoric resources and historic archaeological resources.

O9-13 Maintain an inventory of historic resources.

P9-60 Conduct an ongoing historic survey to identify and document historic resources throughout the City. The City shall engage historic preservation professionals meeting the qualifications established by the State Office of Historic Preservation to conduct all research, historic evaluation and documentation using accepted methodology and standards of the profession. All surveyed resources that meet the criteria established by City policy shall be included in the Carmel Inventory of Historic Resources (Carmel Inventory). The Carmel Inventory shall include historic resources significant at a State or National level (Primary Resources), historic resources significant at a local or regional level (Local Resources) and historic resources that are contributors to a district. The Carmel Inventory shall be updated on an ongoing basis as new resources are surveyed.

P9-61 Maintain an Historic Context Statement that documents the historic periods, themes, events, people, architects and builders who have contributed to the cultural and developmental history of the City. Use the Historic Context Statement to identify, document and understand the importance of historic resources. Exclusion from this document shall not preclude a finding of significance for any resource. The Historic Context Statement shall be updated periodically to remain current (See Appendix F: Historic Context Statement, Carmel-by-the-Sea, 1997).

P9-62 Apply California Register of Historical Resources (California Register) criteria[4] as the framework to identify and document all historic resources. Use the Historic Context Statement to interpret the California Register criteria in determining the significance of Carmel's historic resources.

P9-63 To qualify for listing in the Carmel Inventory, historic resources shall meet at least one of the California Register criteria, shall be representative of at least one theme included in the Historic Context Statement and shall retain substantial integrity[5]. Integrity (association, feeling, setting, location, design, materials and workmanship) shall be documented by comparing the existing condition of the resource with the original building plans or early photographs and/or by physical inspection.

P9-64 To qualify for listing in the Carmel Inventory, an historic resource eligible for the California Register under just criterion #3, shall be required to meet a higher standard for integrity than is required for resources qualifying under criteria #1, #2 or #4, and shall have been designed and/or constructed by an architect, design/builder or contractor whose work has contributed to the unique sense of time and place recognized as significant in the Historic Context Statement. The work of a previously unrecognized architect, design/builder or contractor may be found historically significant only when there is substantial, factual

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[4] The California Register has four criteria for historic significance. These (1) are associated with events that have made a significant contribution to broad patterns of local or regional history or the cultural heritage of California or the United States; or (2) are associated with the lives of persons important to local, California or national history; or (3) embody the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; or (4) has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

[5] Integrity is based on why a property is significant. Ultimately, the question of integrity is answered by whether or not the property retains the identity for which it is significant. The steps is assessing integrity are (1) defining the physical features that must be present for a property to represent its significance, (2) determining whether theses features are still visible enough to convey significance, (3) determining whether the property needs to be compared to other similar properties to understand its significance and (4) determine which aspects of integrity are vital if the property is to qualify as a resource (adapted from the National Register of Historic Resources, Bulletin #15).

evidence that the architect, designer/builder or contractor contributed to one or more of the historic contexts[6] of the City to an extent consistent with other architects, design/builders or contractors identified within the Historic Context Statement. All such determinations shall be made by the Planning Commission based on recommendations from the Historic Preservation Board.

P9-65 Properties that display particularly rare architectural styles and vernacular/utilitarian types shall be given special consideration due to their particularly unusual qualities. Such rare examples, which contribute to diversity in the community, need not have been designed by known architects, design/builders or contractors. Rather, rare styles and types that contribute to Carmel's unique sense of time and place shall be deemed significant.

P9-66 Properties that fail to meet the above-established criteria for inclusion in the Carmel Inventory shall not be treated as historic resources under this section or under provisions of the California Environmental Quality Act.

P9-67 Establish procedures for the Planning Commission, based on recommendations from the Historic Preservation Board, to remove historic resources from the Carmel Inventory based on incorrect evidence, invalid analysis, or loss of integrity of the identified historic resource. An historic resource listed on the Carmel Inventory shall be presumed historically significant and shall not be removed unless a preponderance of the evidence demonstrates that it is not an historic resource.

P9-68 Notify property owners upon identification of each historic resource included in the Carmel Inventory. Provide information

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[6] An historic context is a body of information about historic properties organized by theme, place and time. A single historic context describes one or more important aspects of the development of an area relating to its history, architecture, archaeology and culture. A context may be based on one or a series of events, patterns of community development, or associations with the lives of a person or group of persons that influenced the destiny and character of a place or region (from National Register Bulletin #24). Currently there are five themes developed in Carmel's Historic Context Statement. They are: (1) Prehistory and Hispanic Settlement, (2) Economic Development, (3) Government, Civic and Social Institutions (4) Architectural Development in Carmel and (5) Development of Art and Culture.

to property owners on the City's preservation program and explain the benefits and responsibilities of owning an historic resource. Encourage owners to place their historic resource on National, State or Local Registers to maximize potential benefits to the owner and to the public.

P9-69 Use the Carmel Inventory to identify historic resources for purposes of required California Environmental Quality Act (CEQA) review of proposed projects. Historic resources on the Carmel Inventory shall have a presumption of significance pursuant to CEQA § 21084.1 and shall be treated as historical resources under CEQA. Failure to include a property on the Carmel Inventory shall not preclude a future determination that it qualifies as an historic resource based on new evidence.

P9-70 Establish a process to help preserve and provide public recognition of historic resources.

P9-71 Establish a Carmel Register of Historic Resources (Carmel Register). Place all surveyed historic resources that are significant at the National or State level (i.e. Primary Resources) on the Carmel Register.

P9-72 Establish a process for the voluntary registration of local historic resources. Invite and encourage the owners of all local historic resources identified on the Carmel Inventory to register these resources. Provide regulatory and monetary incentives to encourage voluntary registration of local historic resources identified in the Carmel Inventory.

P9-73 Establish a process for the registration of historic districts identified in the Carmel Inventory. Register a district unless owners of more than 50% of the contributors within the district boundary file an objection to the registration.

O9-14 Protect the design character and context of the residential and commercial areas to maintain an appropriate setting for historic resources.

P9-74 Ensure, through the City's development review processes, that new and altered buildings, whether historic resources or not, are consistent with review standards and zoning ordinances.

P9-75 Implement guidelines for the commercial and residential areas that reflect the design context established by historic patterns of development and explain, illustrate, and establish standards to perpetuate the City's design context, setting, and community character consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating and Restoring Historic Buildings (Secretary of the Interior's Standards and Guidelines).

P9-76 Implement guidelines for civic design to preserve unique community character resources (e.g. public structures, street signs, landscape features and materials, etc.). Incorporate the concept of cultural landscapes (e.g. streets and other non-building open space features) in future revisions to the Historic Context Statement and develop guidelines for their preservation.

P9-77 Use the State Historical Building Code for historic buildings and properties. Foster a greater understanding of this Code among architects and building professionals.

P9-78 Minimize adverse impacts to historic resources from natural disasters by promoting seismic safety, flood protection, and other building safety programs. Ensure the preservation of historic resources identified in the Carmel Inventory through the development and implementation of an effective emergency response plan.

P9-79 Ensure that City ordinances, development review processes and administrative policies support, facilitate and coordinate with preservation activities.

P9-80 Incorporate historic preservation principles into the City's project review processes. Minimize potential impacts on historic resources when developing and enforcing land use, design review, zoning, building code, fire code, environmental review, and other City regulations.

P9-81 Implement the Secretary of the Interior's Standards and Guidelines as the standard of review for development projects affecting historic resources. The City shall retain qualified professionals to review proposed exterior changes to historic

resources to determine whether they are consistent with the Secretary of Interior's Standards and Guidelines Standards.

P9-82 Prohibit the demolition of all historic resources and prohibit changes to historic resources that conflict with the Secretary of Interior's Standards and Guidelines unless it is determined through environmental review that there are no feasible alternatives. When completing environmental review of any project affecting an historic resource, require exploration of one or more alternative designs that would be consistent with the Secretary of the Interior's Standards and Guidelines Standards.

P9-83 Implement Design review guidelines to ensure preservation, protection, enhancement, rehabilitation, reconstruction, and perpetuation of existing structures of historic significance in a manner consistent with the character of the village. Such criteria shall include, but not be limited to, architectural design, size, scale, height, spatial relationships, window, dormers, appurtenances, proportion and placement of improvements on the parcel, and landscaping, including planting or removal of vegetation.

P9-84 Recognize existing architectural features and styles when reviewing alterations to historic resources. Strive to achieve compatibility between these historic elements and proposed changes. Allow historic resources included in the Carmel Inventory to retain existing land use and/or design nonconformities when proposed rehabilitation or repairs are found to be consistent with the Secretary of Interior's Standards and Guidelines. Allow changes to historic resources in the Carmel Inventory that expand an existing design nonconformity or create a new design nonconformity only when this is found to be necessary to achieve consistency with the Secretary of Interior's Standards and Guidelines.

P9-85 Minimize adverse impacts to historic resources from natural disasters by promoting seismic safety, flood protection, and other building safety programs. Ensure the preservation of resources identified in the Carmel Inventory through the development and implementation of an effective emergency response plan. Prohibit

and adopt penalties for intentional neglect and/or vandalism of historic resources ("demolition by neglect").

Archaeological Resources

O9-15 Identify and protect archaeological resources within Carmel.

P9-86 Maintain an Archaeological Overlay District in the Carmel Zoning Ordinance. Include the area of potential archaeological significance (Figure 9.2) and the commercial and R-4 Districts within the Overlay District. Establish the Archaeological Resources Management Report (AMAR Preservation Bulletin) as the standard report format for all documentation. Accept reports only from Registered Professional Archaeologists (RPA).

P9-87 Require a Phase I Archaeological Study performed by a Registered Professional Archaeologist to determine whether significant archaeological resources may be present when excavation activity is proposed within the Overlay District.

P9-88 All available measures, including redesign and obtaining archaeological easements, shall be pursued to avoid development on sensitive archaeological sites. Site preservation shall be preferred over excavation of the resource.

P9-89 If archaeological resources are discovered during construction, work shall cease immediately and the resource shall be preserved or the impact mitigated according to these policies. This policy shall apply Citywide.

P9-90 Require monitoring and either safe retrieval, collection and archiving or preservation in-situ of all identified archaeological resources. Conduct all testing, monitoring and mitigation of impacts in accordance with the recommendations of a Registered Professional Archaeologist and consistent with the requirements in the State CEQA Guidelines section 15064.5.

P9-91 Transmit all archaeological resource reports and attachments to the Northwest Information Center as designated by the State Office of Historic Preservation.

Access & Recreation

Introduction

Carmel-by-the Sea is a popular visitor destination, known as much for its spectacular coast as for its unique community character. Carmel Beach is owned and maintained by the City of Carmel and includes over 22 acres of white sand beach. Carmel Beach sits on the northern half of Carmel Bay, which stretches from Cypress Point on the north to the outer tip of Point Lobos to the south. The beach is used year round and represents an important recreational resource.

One of the shoreline's outstanding features is the sand itself, with the texture and bright appearance of granulated sugar. Beaches composed of such fine white sand are very rare along the central coast of California. At about one mile in length, the beach's white sands extend out below translucent blue waters into Carmel Bay. Wind-sculpted Monterey Cypress trees line the bluffs. Views to the north are of the rocky headlands of Pebble Beach. The south vista is of Abalone Point and Point Lobos beyond. Together, the beach, ocean, trees and views combine to create one of the most scenic landscapes in California.

Scenic Road and the Beach Bluff Pathway are also owned and maintained by the City of Carmel. The pathway offers a unique pedestrian experience as it meanders along the bluffs. The decomposed granite pathway passes between the tree-dotted, vegetated bluff outcrops and the rock curb that defines the edge of Scenic Road. The bluff top area is maintained by the City and is complemented by nine beach access stairways and a series of benches and overlooks. This pathway is heavily used, providing a complementary experience to the sandy beach. From the bluff top one can see different vistas, relax on benches, and stroll along a path that is perfect for jogging or pushing strollers or for those whose physical condition makes walking on the beach difficult or impossible. Over the years, Carmel has maintained a balance between preserving the beauty of the shoreline environment and adding the physical improvements that make the Carmel shoreline accessible and enjoyable to the public.

Coastal Act Policies

One of the key objectives of the California Coastal Act is to maximize public access to and along the coast. This is evidenced in the Coastal Act's statement of goals, in the resource policies, and in the requirement for the preparation of a public access component within the local coastal program. Specific Coastal Act sections related to this topic that are relevant to Carmel-by-the-Sea include the following:

> ***Section 30210.*** *...Maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*
>
> ***Section 30211.*** *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*
>
> ***Section 30212.*** *(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:*
>
> *(1) It is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,*
>
> *(2) Adequate access exists nearby.*
>
> ***Section 30212.5.*** *Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.*
>
> ***Section 30213.*** *Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.*
>
> ***Section 30214.*** *(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:*

(1) Topographic and geologic site characteristics.

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.

(4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.

(b) It is the intent of the Legislature that the public access policies of this article be carried out in a reasonable manner that considers the equities and that balances the rights of the individual property owner with the public's constitutional right of access pursuant to Section 4 of Article X of the California Constitution.

Section 30220. *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

Section 30221. *Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.*

Section 30222. *The use of private lands suitable for visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation shall have priority over private residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industry.*

Section 30223. *Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.*

Section 30252. *The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service, (2) providing commercial facilities within or adjoining residential development or in other areas that*

will minimize the use of coastal access roads, (3) providing non-automobile circulation within the development, (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents will not overload nearby coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development.

Background

Beach Access

Implementation of Coastal Act public access requirements focuses on two types of access: vertical and lateral. Vertical access provides routes from the "nearest public roadway to the shoreline." Lateral access is along the shoreline, typically immediately adjacent to a sandy beach or rocky inter-tidal zone, at the top of a bluff or otherwise above the high tide line, where pedestrians may walk along the coast without being affected by waves or any safety hazards presented by bluff edges. Parking facilities near the beach also is a local access issue.

Carmel is among a limited number of California coastal communities where nearly the entire shoreline from the first public road to the sea is open to the public and easily accessible. The entire beach and bluff is dedicated as a City park and is kept as natural appearing as possible consistent with public access, habitat protection, safety and provision of limited recreational support facilities.

The City has a highly evolved access system that integrates several types of facilities and regulatory programs to maintain the natural character of the beach and bluffs. The City provides vertical access at one to two block intervals along its entire coastline.

- The west end of Ocean Avenue has long provided the principal vertical access point to Carmel Beach for visitors. This area has approximately 124 parking spaces freely available to the public and the main public restroom facilities are located here.
- Access north of Ocean Avenue is provided via a dedicated easement through the Sand and Sea subdivision. Scenic Road and its Beach Bluff Pathway provide continuous lateral bluff-top access from Eighth Avenue to the south City boundary. Scenic Road also provides 127 parking spaces and twelve vertical

access points (stairways or sand ramps) from the bluff top to the beach below (see Figure 9.4).

- Pedestrian easements provide convenient access to additional beach parking located along San Antonio Avenue. Pedestrian easements connect San Antonio Avenue to the Scenic Road corridor at the ends of 9th through 12th Avenues. Where possible, beach stairways are located near the outlet of these pedestrian easements to ensure a convenient, safe route to the beach. This minimizes foot traffic on the fragile bluffs, which would destroy landscaping and increase erosion.
- Support facilities such as viewing benches, trash containers, sand wash-off stations, informational and safety signage, public restrooms, curbside parking and rustic guard railings complete the access system.

Figure 9.4 shows a map of public access points to the beach.

Access issues discussed at community workshops include means to provide improved access for the disabled, improved lateral access between Ocean Avenue and Eighth Avenue and restoration of the vertical access near Twelfth Avenue that was lost during the storms of 1982-83. This Plan assumes that the number and general distribution of existing vertical access facilities will be retained as long as bluff erosion and engineering feasibility allows. Improving vertical access to the beach for neighborhoods north of Ocean Avenue also is supported in this plan.

Recreation and Support Facilities

Recreation is another fundamental component of the Coastal Act. The City's public beach is an important recreational resource both for the City's residents and visitors. The City limits structural improvements and prohibits commercial activity at the beach to protect its informal, natural character. While there are a variety of physical improvements such as public parking, the Beach Bluff Pathway, seawalls, stairways, restrooms and an irrigation well, the City always strives to keep these facilities low in scale, and designed to be simple and rustic in character using natural materials such as stone and wood.

The winter storms of 1982/83 severely damaged the bluffs, roadway, and public access points along the shoreline. In some places the bluff retreated 30 to 40 feet inland destroying beach stairways, drainage facilities and vegetation. In response, the City embarked on a beach restoration project to restore and armor the bluff, rebuild damaged drainage and access facilities and make improvements to recreation facilities

along Scenic Road and the beach. The project was funded in part with grant monies from the California Coastal Conservancy and included such amenities as the pathway, construction of new vertical access points along the beach, viewing platforms, public parking spaces, benches, signs, and shoreline armoring. In order to accommodate the new pedestrian path as well as maintain a 20' road width, the western edge of Scenic Road was realigned and approximately 22 parking spaces were eliminated. Prior to this project, there was no separate pedestrian path along the beach bluff--cars and people intermixed creating a public hazard. Even with the loss of parking, the project was found to be consistent with Coastal Act because it provided significant public benefits of improved lateral access along the bluff and vertical access to the beach.

Today, the public continues to enjoy the benefits of the Beach Bluff Pathway and convenient access to the beach. It is estimated that more than 2.5 million people each year visit Carmel, and many of these come to see the beach.

The Beach Bluff Pathway is a scenic trail that currently extends from Eighth Avenue south to the City limit. This Pathway runs parallel to Scenic Road and provides excellent views of Carmel Bay and the sandy beach. This pathway is a recreational amenity that is used by members of the public from the early morning hours until twilight. Since use of this pathway is a pedestrian activity members of this group are more likely to arrive on foot, making the pathway part of a longer walk through Carmel's neighborhoods. Some, however, do arrive by car and need a convenient place to park. For someone who desires to walk the full length of the pathway the most convenient place to park would be near one of the ends of the pathway. Within the program area there are over 100 parking spaces south of Thirteenth Avenue and 95 parking spaces located between Ocean and Eighth Avenues, making this requirement easy to satisfy. Very few use this pathway at night. There is some seasonality evident with peak use during the summer months.

Parking demand exceeds supply especially on busy weekends days and during the summer season. During these times, competition for parking at the Ocean Avenue/Del Mar Avenue beach lot and the public parking spaces along Scenic Road reaches a peak and spills over into the on-street parking in adjacent residential neighborhoods. Demand for public parking and access to the beach typically wanes in the late afternoon. The City controls beach parking through design, dispersal and by regulating parking time limits. In public workshops the congestion at the Del Mar parking lot was identified as a problem that should be addressed. Polices in this land use plan support development of a master plan that includes a redesign of this area to improve circulation, reduce congestion, protect sensitive resources and enhance visual character. (See Figure 9.5 for location of the master plan area.)

Among the most difficult facilities to site are public restrooms. The City provides a main restroom facility at the foot of Ocean Avenue/Del Mar parking area. This facility is often crowded and could be expanded to improve capacity on busy weekends. With more than a mile of coastline this single facility is often too distant to serve public needs and the City has long recognized the desirability of establishing a second or even a third smaller facility south of Eighth Avenue. Public demand is seasonal and this could allow for one or more nonpermanent restrooms to meet peaks in demand. Siting a permanent facility must account for the full cycle of storm activity, beach aesthetics, public and private views and service/maintenance needs.

Other identified needs include an improved signage program, emergency response telephones and the development of educational materials for visitors and residents. Each of these will improve the enjoyment of recreational users of the beach and aid in the safe and effective management of this resource.

Figure 9.6 shows a map of parks and open space, including Carmel Beach.

Visitor Accommodations and Recreation Services

Visitor accommodations provide an opportunity for overnight visitors to stay in the City and is an important supporting aspect of coastal access and recreation for the City. Carmel-by-the-Sea is a popular visitor destination and accommodates a large supply of hotel and motel rooms. Based on a review of permits, there are 948 authorized motel/hotel rooms within City limits. Approximately 50 percent of the land area of the business district is occupied by motel uses, primarily in the RC (Residential/Commercial) and R-4 (Multifamily) districts. A large percentage of the land zoned for retail commercial activity also is occupied by visitor-oriented uses. With a resident population of less than 5,000, this represents a significant proportion of resources devoted to providing visitors with recreational opportunities and access to Carmel's coast.

For these reasons, this Coastal Plan does not establish policies encouraging additional motel or visitor uses. Instead it recognizes the importance of these uses to the community and incorporates policies that will maintain and enhance the existing motel and visitor-serving uses. Policies that encourage local-serving uses and a balanced mix of uses seek to moderate the impacts of tourism on the residential community. These policies will benefit both the residential community and the visitor experience. Avoiding over-commercialization and preserving the uses necessary for local community life will enhance the charm and quality of life that makes Carmel so interesting to visit.

Many visitor accommodations are older and the City should expect renovations and replacement of these buildings over the next few decades. Coastal policies need to guide this natural recycling to accommodate visitor needs while retaining the scale and character of the downtown. One opportunity that would aid in mitigating the impacts of motels while preserving the existing motel stock is the transfer of R-1 Motels out of the single-family neighborhoods and into the commercial area. Land use and water policies address this opportunity.

Additionally, there is some evidence that the City may be losing market share of overnight visitors to other regional facilities that provide conference facilities. Policy options to encourage expansion of small-scale conference facilities, and/or the development of a central conference facility that can be shared by all hotels/motels should be considered as a means of protecting the City's economic base.

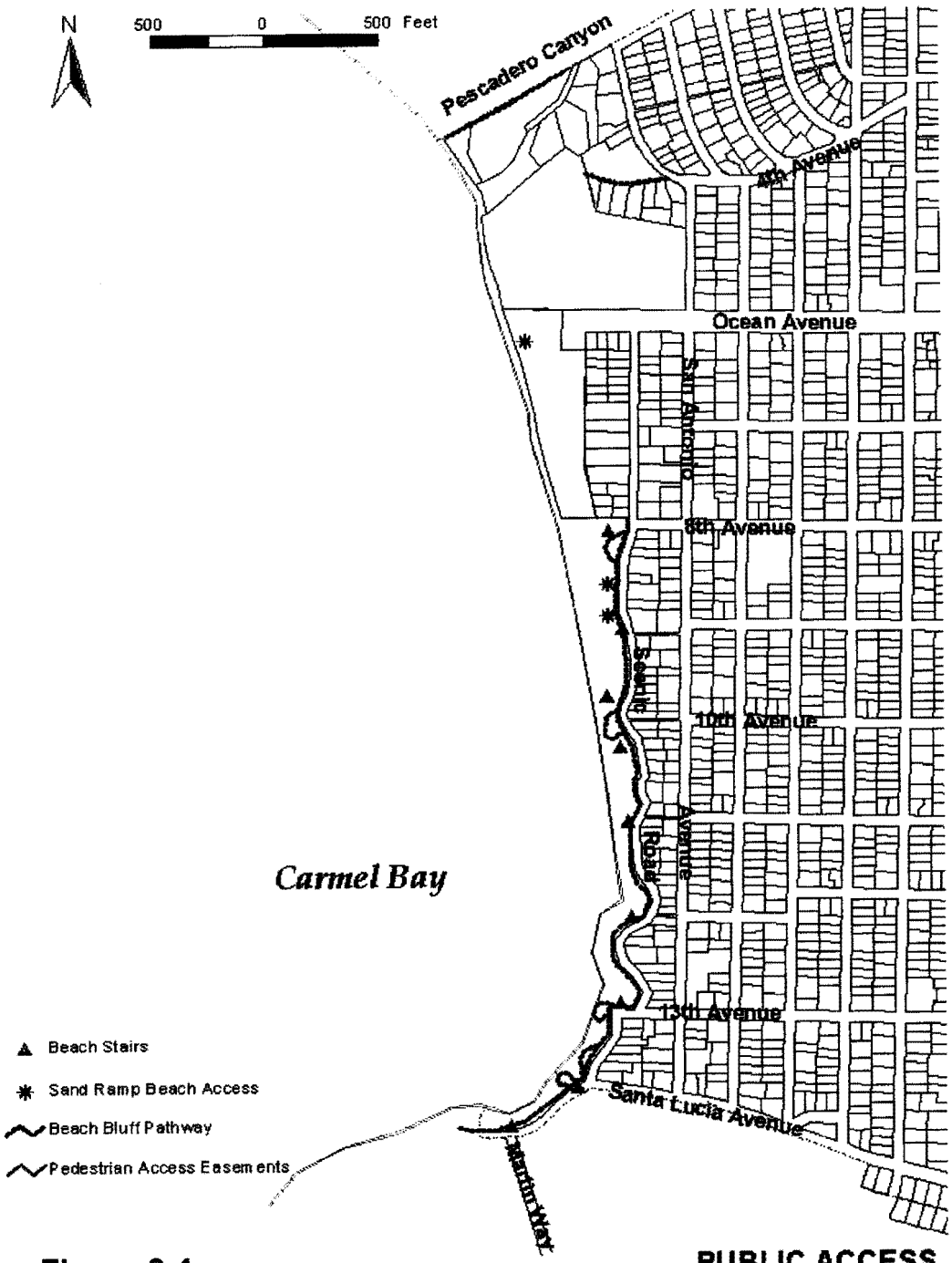

Figure 9.4 **PUBLIC ACCESS**

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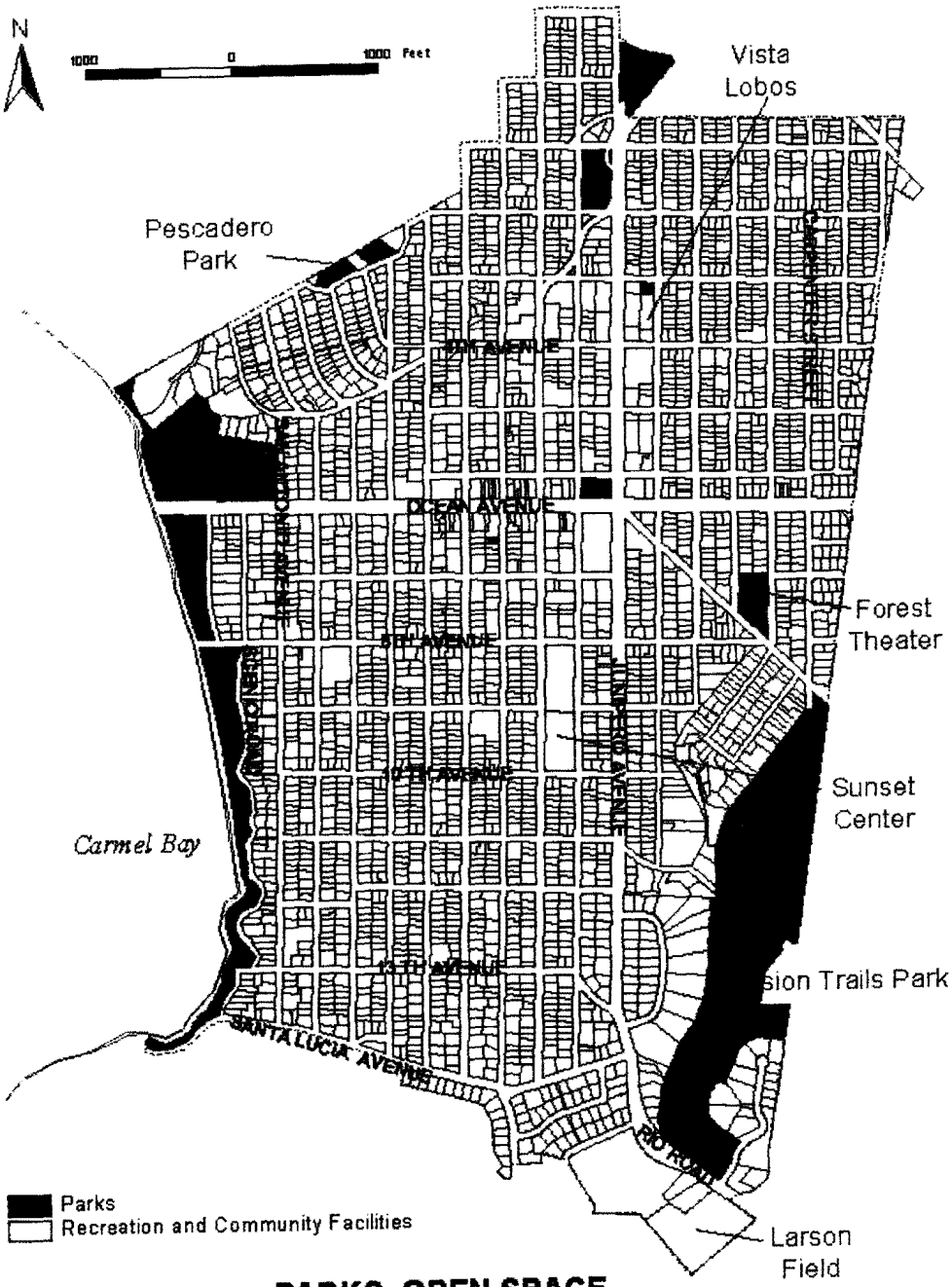

Figure 9.5 **PARKS, OPEN SPACE, RECREATION, AND COMMUNITY FACILITIES**

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Goals, Objectives and Policies

Beach Access

G9-6 Provide maximum public access to, and recreational use of, the shoreline consistent with private property rights and environmental protection.

O9-16 Maintain frequent and safe points of access along the beach.

P9-92 Development shall not interfere with the public's right of access to the sea.

P9-93 Continue to provide vertical access along the Carmel shoreline at approximately one or two block intervals.

P9-94 Improve and sign the vertical access at Fourth Avenue. Consider development of a pedestrian path from the foot of Jane Powers walkway to the Fourth Avenue beach access through Sand and Sea. Investigate and implement opportunities to establish or reestablish additional vertical access from North San Antonio to the beach to the extent feasible.

P9-95 Periodically reestablish the sand dune at the foot of Ocean Avenue, to provide convenient beach access from the Ocean Avenue/Del Mar parking lot. Reestablish and regularly maintain a vehicle and handicap access ramp south of Eighth Avenue.

P9-96 Enhance pedestrian access to the shoreline from San Antonio Avenue using existing pedestrian access easements /drainage ways that connect San Antonio Avenue with Scenic Road located at Eighth, Ninth, Tenth, Eleventh, and Twelfth Avenues. Redirect surface storm water flows in these easements drainage ways to underground culverts to improve pedestrian safety, access, and aesthetics.

P9-97 Keep the vegetation on San Antonio Avenue near pedestrian access easements pruned for safe visibility of pedestrians by motorists.

P9-98 Protect the public's historic right of unrestricted access to the entire beach in Carmel-by-the-Sea from the southern to the northern city limit by prohibiting development that interferes with such rights and by actively defending established prescriptive rights. Complete the City's acquisition of the sandy beach along the entire Carmel shoreline.

O9-17 Establish a local segment of the California Coastal Trail through Carmel-by-the-Sea by connecting existing pedestrian paths and developing new pedestrian paths or routes as required to create a continuous trail through the City.

P9-99 Designate the Beach Bluff Pathway as part of the California Coastal Trail (as long as this does not require any alteration to design or use). Coordinate with Monterey County to increase public awareness of the new segment of the Trail.

P9-100 Coordinate with Monterey County to establish a continuous coastal trail through Carmel that links Rio Park, Carmel Point, the Beach Bluff Pathway, and the trail network in Del Monte Forest. Support efforts by Monterey County to establish a pedestrian pathway around Carmel Point to continue the California Coastal Trail.

P9-101 Improve pedestrian circulation between the north end of the Beach Bluff Pathway at Eighth Avenue and the beach facilities at Ocean Avenue and Del Mar as part of the Del Mar and North Dunes Master Plan.

P9-102 Provide safe and adequate pedestrian access from the Carmel Gate at the North City boundary to Ocean Avenue while protecting environmental resources.

P9-103 Sustain and maintain the Beach Bluff Pathway design concept and landscape plant selection. Authorize the Forest and Beach Commission to review and approve design changes and plant selections. Require a coastal development permit for significant changes or any change that would substantially alter the design concept.

P9-104 Install more seating along the beach pathway.

G9-7 Develop a Master Plan for the Del Mar and North Dunes area. Upon approval, the Coastal Land Use Plan shall be amended to incorporate all elements of the Master Plan.

O9-18 Appoint an ad hoc citizens committee to develop the Del Mar and North Dunes Master Plan. Address issues related to parking and circulation, access recreation facilities, aesthetics, special events, impacts on residents and visitors and protection of environmental resources. Guide Plan development using the goals, objectives, and policies of this Land Use Plan consistent with Coastal Act policies, for provision of public access and protection of sensitive resources.

P9-105 Address circulation and parking problems. Make the area more pedestrian/people friendly and protect the environment.

P9-106 Use City staff along with needed consultants (environmental restoration specialist, traffic engineer, landscape architect) to develop a plan of balanced improvement.

P9-107 Consider reallocating parking so it will flow in a more efficient manner. Consider a regular shuttle from downtown or from a designated parking area.

P9-108 Improve the pedestrian experience through the Del Mar parking area for those arriving on foot and from parked vehicles to the beach. Consider construction of boardwalks or other improvements to aid beach circulation, protect tree roots and protect the sensitive vegetation in the North Dunes area.

P9-109 Provide handicap access consistent with ADA requirements. Provide access that blends with the beach and allows handicapped individuals the opportunity to enjoy a more natural beach experience.

P9-110 Provide adequate and aesthetically pleasing trash containers.

P9-111 Provide secure bicycle racks.

P9-112 Continue to support passive beach activities that are consistent with maintaining the natural beach setting. Active recreational opportunities need not be enhanced.

P9-113 Do not install formal picnic tables or benches. Rather, provide driftwood logs for seating. Picnicking on the beach should be conducted in a traditional manner with blankets, etc.

P9-114 Retain the informal atmosphere of the volleyball courts.

O9-19 Provide beach users with information about Carmel Beach, its vegetation, facilities, amenities, and limitations (rules). Educate the public about the danger of the beach and ocean environment and provide emergency response capabilities.

P9-115 Consider establishing and budgeting for the position of an educational officer who would patrol the beach and adjacent areas to educate people about beach usage and prevent damage to the environment. This person should have the authority to issue citations.

P9-116 Expand the existing beach brochure and distribute it through various visitor information outlets and distribution receptacles conveniently placed along the Scenic Road pathway.

P9-117 Consider conducting monthly beach tours hosted by staff or docents for the purposes of public education if there is sufficient demand for this service.

P9-118 Maintain emergency 911 telephones along the shoreline.

O9-20 Establish a uniform signage program for the beach and bluffs to better inform beach users of regulations governing activities on the beach.

P9-119 Post "beach access/pedestrians only" signs at the top of pedestrian easements to help visitors locate these access routes including North Dunes access routes and the easement from San Antonio through Sand and Sea.

P9-120 Install signage along Scenic Road to direct traffic and indicate beach parking hours.

P9-121 Use as few signs as possible to accomplish the desired purpose. Rely on design features and/or public education to influence behavior first. Establish standards for the total number of informational signs along the shoreline.

P9-122 Consider locating signs at the bottom of the bluff if appropriate.

P9-123 Use signs that are aesthetically pleasing, easily seen, minimal in size, brief in content, of muted color and uniform in design.

P9-124 Post educational/interpretive signs where appropriate along Scenic Road and in the North Dunes area.

P9-125 Post signs warning beach users about dangerous ocean conditions.

P9-126 Use international symbols whenever possible, along with a brief explanation of prohibitions and Municipal Code Section citations.

P9-127 Maintain all signs to ensure that they are legible. Signs that are vandalized or defective shall be replaced or repaired as soon as possible.

P9-128 Maintain signs at each stairway indicating fires must be at least twenty-five feet from the base of the bluffs and that they are not allowed north of Tenth Avenue.

P9-129 Use trash containers as a location for educational and regulatory signs.

Recreation and Support Facilities

G9-8 Provide adequate facilities that will attend to the needs of the public, mitigate damage to the environment, and respect the neighborhood.

O9-21 Limit development along the Carmel shoreline to facilities that support passive and active recreational activities, beach access, bluff protection and protection of infrastructure. Bluff protection and protection of infrastructure shall be permitted only when existing facilities are in danger from erosion. Ensure that any new structure or development is visually compatible with the natural beach environs, is consistent with the established design of existing facilities, minimizes coverage, and does not impede access. Avoid to the maximum extent feasible the seaward encroachment of new structures.

O9-22 Provide restroom facilities consistent with the volume of people who use the beach and Beach Bluff Pathway.

P9-130 Retain the existing restroom facility at the Ocean Avenue/Del Mar parking lot and consider improvements to increase its capacity.

P9-131 Retain the current second restroom facility at Santa Lucia Avenue until it can be replaced by a permanent site. Remove this facility upon construction of one or more additional permanent restrooms south of Eighth Avenue.

O9-23 Provide a parking program for Carmel Beach that supports convenient access without compromising aesthetics, environmental quality or residential character.

P9-132 Develop a design plan for the Del Mar parking area that improves circulation, reduces congestion, enhances visual quality, and enhances community character. The redesign shall avoid or minimize any loss of parking spaces.

P9-133 Continue to regulate beach parking using time limits. Retain beach parking as a free resource to the public facilitating access for all. Keep public spaces along the Beach Bluff Pathway small, intimate and dispersed to avoid large congregations of people that would disturb nearby residents.

P9-134 Provide convenient and free public beach parking from 5:00 a.m. until 10:30 p.m. daily. Parking outside of these hours along Scenic Road and at the Del Mar parking lot shall be limited to residents and guests with a resident's parking permit.

G9-9 Provide for a wide variety of passive and active recreational experiences for all beach users while protecting the resource values of beach environs.

O9-24 Manage the City's beach, park and open space resources in a manner to encourage use and enjoyment by residents and visitors.

P9-135 Establish and maintain in public ownership the entire sandy beach on Carmel's shoreline from the north to the south City boundary.

P9-136 Establish, in coordination with the State Department of Parks and Recreation, Monterey County Regional Park District and the Monterey County Parks Department, a trail network linking the state-owned Odello land and Carmel River State Beach to the Carmel Mission, Mission Trail Nature Preserve and Beach Bluff Pathway.

P9-137 Allow surfing, hiking, picnicking, horseback riding, and typical beach games, such as Frisbee and volleyball on the beach without restriction. Allow dogs on the beach when on a leash or under voice control. Require dogs on the Beach Bluff Pathway to be on a leash. However, if the dog policy combined with educational efforts does not promote a safe environment for beach users and dogs, a leash law for certain times should be considered.

P9-138 Discourage any further incursion of recreational activities into the North Dunes habitat. Sensitive resources in the North Dunes habitat area shall be protected.

P9-139 Prohibit percussion instruments on Scenic Road, the Beach Bluff Pathway, and beach bluff without a permit. Prohibit sound amplifying equipment on the City Beach without a permit.

P9-140 Prohibit sales or other commercial activities on Carmel Beach, along the bluff or in the Ocean Avenue/Del Mar parking lot.

P9-141 Prohibit overnight camping on any portion of the beach and bluffs.

P9-142 Allow alcohol consumption on the beach until 10:00 p.m.

P9-143 Prohibit bicycles and skating on pedestrian access easements between Scenic Road and San Antonio Avenue and on the Beach Bluff Pathway.

P9-144 Prohibit private dune buggies and motorized marine vehicles on the beach.

P9-145 Maintain as operational all wash-off stations located adjacent to the stairways at Eighth, Eleventh, Thirteenth, and Santa Lucia Avenues.

P9-146 Implement procedures and regulations for temporary events on the beach that will protect public access and environmental resources.

O9-25 Allow beach users the opportunity to enjoy a fire for warmth or cooking, while protecting the sand from degradation.

P9-147 Allow beach fires until 10:00 p.m. south of Tenth Avenue but at least twenty-five feet from the base of bluffs. Install appropriate signage to indicate this distance and time limit and to indicate methods for correct extinguishing of fires with water.

Visitor Accommodations and Recreation Services

O9-26 Establish standards that support the improvement and/or replacement of existing motel facilities while mitigating impacts and enhancing the aesthetic character of these uses. Maintain the existing balance between visitor serving, general commercial, and residential land uses.

P9-148 Establish a City-wide cap on hotel/motel units equal to the number of existing authorized hotel/motel units. If units are demolished or converted to other uses allow lost units to be reestablished on other sites up to the cap. Periodically evaluate (at least every ten years) whether an appropriate balance of land uses is being maintained.

P9-149 Encourage the conversion of existing, under-performing commercial space to visitor accommodations within the limits of the cap. Mitigate impacts of motel uses on the long-term livability of any nearby residential uses. Protect and conserve all existing residential units in all commercial districts.

P9-150 Conserve and enhance the scale, character, landscaping and historic features of the City's motel sites and buildings when proposals for rebuilding or remodeling are considered. Promote the undergrounding of parking and the creation of attractive open space design features in such projects.

P9-151 Encourage the establishment of additional visitor support facilities (e.g. conference rooms, exercise rooms, etc.) at, or associated with, authorized motel uses in the commercial area to enhance the attractiveness of local accommodations.

P9-152 Retain measures to restrict commercial short-term rental of single-family residences in the R-l district.

P9-153 Continue to prohibit the sale of interests in and rights to use real property in the City on a timesharing basis.

O9-27 Maintain a mix of commercial uses that are compatible with the character of Carmel as a residential village.

P9-154 Require visitor oriented retail businesses to be located in the core area of the commercial district. (See Figure 9.3)

P9-155 Allow resident-oriented businesses in all areas of the commercial district and particularly encourage such businesses in areas that also are in close proximity to community, cultural and public facilities within the commercial district.

P9-156 Require that all retail uses be conducted within a fixed place of business within the City. Prohibit exterior retail sales or soliciting from business to business ("in and about" retail sales).

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Coastal Resource Protection

Introduction

This section of the Coastal Land Use Plan includes policies for protection of the City's coastal environmental resources including the character of its forest, beach and bluffs, water quality and Environmentally Sensitive Habitat Areas (ESHAs). As noted in the previous section (Access and Recreation), there is little private land located between the first public road and the shoreline. The City owns nearly the entire beach. This eliminates many of the potential conflicts that other communities face between development and resource preservation objectives along the immediate coastline. However, the City's biological resources are found in a variety of other locations, and require protection under the Coastal Act.

Coastal Act policies relevant to natural resource conservation issues in Carmel include the following:

> ***Section 30230.*** *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*
>
> ***Section 30231.*** *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste-water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams...*
>
> ***Section 30233.*** *(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems...

(c) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients, which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.

Section 30234.5. *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

Section 30235. *Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply...*

Section 30236. *Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (l) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.*

Section 30240. *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to

prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Section 30244. *Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

Section 30251. *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.*

Background

Environmental Setting

The City of Carmel-by-the-Sea is located in a region of California's central coast that is known for its diversity of plants and plant communities. The region surrounding the city supports several different climatic, topographic, and soil conditions, resulting in a wide variety of habitats. This diversity of conditions supports many native plants and wildlife species. As an example of this diversity, 146 plant species reach their most southern and 156 plant species reach their most northern distributional limits in Monterey County, and at least 34 plant species are found only in Monterey County.

Residential development occurs on almost all land in the city, except for seven parks, several miniparks, a compact centralized commercial area and some privately owned parcels in Pescadero Canyon. Approximately 68 acres of public open space and approximately 10 acres of privately owned undeveloped land are under the City's jurisdiction. Most of the parks in the City are developed to support passive and active recreational activities. Of the City's public lands, Carmel Beach, Mission Trail Nature Preserve, and the proposed Rio Park (outside City boundaries), support the most intact and highest quality natural resources. The lower portion of Forest Hill Park also supports natural habitat but has been substantially altered by past activities and continues to be maintained for public recreational uses. The privately owned properties in Pescadero Canyon are part of a larger watershed for Pescadero Creek that extends into Del Monte Forest and supports Monterey Pine forest.

The landform of the Monterey Peninsula is an ascending staircase or series of six marine terraces of increasing geologic age, rising inland from the seashore. These marine terraces reflect the changes in sea level and the general uplift of underlying bedrock along the central coast in roughly the last half-million years or more. The city is built on the first five of the six marine terraces. The marine sediment of the first four terraces is covered by sand dunes, which also are of increasing age with ascending elevation and distance from the ocean. The greater degree of soil development in the older dunes, such as organic matter accumulation, and clay and iron weathering and translocation to the subsoil, reflect the age of the dunes.

Drainages have cut through the dunes and marine terraces of Pescadero Canyon and Mission Trail Nature Preserve to expose the underlying bedrock. Shale from marine deposits is exposed in Pescadero Canyon, and granitic bedrock is exposed in the lower slopes and stream channel in Mission Trail Nature Preserve. Uplifted alluvial terraces formed by the Carmel River are found along the southern boundary of the City.

Carmel Bay is a 2.8-mile-wide open bay between Cypress Point on the north and the outer tip of Point Lobos, on the south. Its sands are very white, extending out below its clear waters. The deep Carmel Offshore Canyon is located in the southeast part of the bay, with depths of 300 feet less than 0.2 miles from San Jose beach, a part of Carmel River State Beach. The public beach of Carmel-by-the-Sea is on the more gently sloping northeast shore of the bay, north of Carmel River and the promontory now known as Carmel Point. Gentle as Carmel Beach is, it is still considered by coastal geologists to be in the category of "steep" beaches. Ten-foot breakers are not unusual. About one mile in length, covering about 22 acres it is under the jurisdiction of the City. The beach is a commons held in public trust and wholly devoted to public access and the enjoyment by residents and visitors alike. The lower beach near the water is managed as a natural environment. The sand builds 200 feet seaward during summer when waves are small, then retreats toward the bluff, almost to the vanishing point as the large waves of winter storms strip sand from the beach.

The sand supply within Carmel Bay may be a closed system. One study suggests that Carmel Beach does not receive any significant sand transport northward from Carmel River beach around Carmel Point within the bay[7]. Sediment also does not appear to be transported with the northwest drift around the Monterey Peninsula from the southern part of Monterey Bay. Carmel, like many other small embayments along the West

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[7] C.D. Storlazzi, M.E. Field/Marine Geology 170 (2000) 289-316.

Coast, derives most of its sand, not from rivers, but from the erosion of adjacent headlands and shoreline bluffs.

Cypress Point, the western-most point of the Monterey Peninsula, extends about 2 miles beyond the general trend of the coast. South of it, enclosing the anchorages and beaches of Pebble Beach and Stillwater Cove, is Pescadero Point. Since the prevailing swell and long shore currents come from the northwest, it is the Santa Lucia granodiorite of these headlands that is slowly eroded and transported by waves to line the Carmel shoreline with white sands. This quartz sand is so fine that it was mined in earlier days for use in the making of glass.

The shale, sandstone, and lava rock of the bay bluffs, being softer and less resistant than the granite rocks, also contribute material to the sandy beaches. Since these bluffs are so vulnerable, the City of Carmel-by-the-Sea began in the 1950s to build seawalls to protect them. When heavy winter storms combine with the year's highest tides, the beach is sometimes completely inundated. Waves crash against the bluffs and seawalls, and debris has at times been thrown into the air and across Scenic Road. Figure 9.6a shows public coastal protection structures to be maintained. These include seawalls and engineered revetments that protect the bluff from wave attack and stormwater outfalls that direct runoff away from fragile bluff soils to prevent erosion. Figure 9.6b shows the location of sand redistribution activity historically undertaken by the City. In each of the areas shown on the map, sand is moved upslope from just above mean high tide line toward the base of the bluffs to cover exposed revetments and to restore beach sand levels worn down from wave activity and from daily use by the public.

Beach Maintenance and Shoreline Protection

Public access to Carmel Beach is primarily from the parking area at the foot of Ocean Avenue as well as from numerous sites along Scenic Road. But from these locations, access to the tideline requires a descent that ranges between 12 and 50 feet, depending on location and season. During several months of the year, high-energy (storm) waves scour sand from the beach, exposing an underlying base of large sandstone outcroppings. These conditions often make beach access difficult. During some periods, storm-generated waves strike directly against the dunes, bluffs and beach access stairways, making beach access dangerous. And, like nearly all open-coast locations, the Carmel shoreline appears to be facing a future of rising sea levels and unpredictable weather patterns.

If left unmanaged, the bluffs surrounding Carmel Bay would progressively erode from the impact of winter storm waves and from surface drainage. This natural process would eventually erode the bluffs up to the City's beach access stairways and the Beach Bluff Pathway. Eventually, Scenic Road and the adjacent homes would be threatened as well. Erosion of Carmel's bluffs is quite variable along the shoreline and is

episodic. Large, unprotected sections of the bluff subject to wave attack can slough away during heavy surf and winter storms. The same area of bluff may not retreat again for decades. Estimates of the long-term average rate of bluff retreat were performed in 1984 by reviewing old surveys and old aerial photographs. Based on data from 1908 to 1983, bluff retreat rates along Carmel Beach were estimated at between 4" and 8" per year depending on location. Much of this retreat occurred during the single winter of 1982-83 when twenty to forty feet of land between Scenic Road and the bluff's edge were lost to the sea.

Carmel has forestalled this process by modifying the bluffs to resist erosive forces thereby protecting public access as well as public and private improvements. This began with construction of the first seawalls in about 1958. Additional seawalls were added in 1976, 1978, 1982 and 1984, and 2001. By the end of the twentieth-century nearly the entire coastline south of Ocean Avenue was armored by a combination of vertical seawalls, vertical or stepped retaining walls or engineered rock revetments (see Figure 9.7a). Drainage improvements also have been installed to divert storm water away from the fragile bluffs. The City has avoided the use of unconsolidated rip-rap which is unsightly and less effective. Through its beach management program, the City annually moves thousands of yards of sand to cover its engineered revetments and maintain ramps to improve beach safety, access, and aesthetics for beach-users.

As Carmel has built seawalls, retaining walls, and engineered rock revetments in a continuing program to protect the City's shoreline bluffs and public amenities along its bluff tops, including the Beach Bluff Pathway, the City has worked to mitigate negative impacts (structural, functional, and visual) that often result from the use of hard protective structures along the shore:

- Seawalls and Retaining Walls – These are vertical walls that hold the bluff in place and are exposed to waves on the seaward side. To reduce the visual impact of these structures, the City has covered them all with a facing of "golden granite" rock, giving the walls a more "natural" look. Thus far, the accelerated loss of beach sand that is often associated with seawall construction does not appear to be occurring along Carmel Beach. This may be due to the unique natural sand transport process that is characteristic of the Carmel shoreline or it may be due to the City's annual sand redistribution that artificially moves beach sand from the lower beach to the upper beach to cover revetments and to restore access at the foot of Ocean Avenue. Further long-term study of beach levels is warranted to provide the best management for Carmel's beach. When new protective structures are proposed in areas not previously armored, seawalls are generally considered the preferred alternative unless site-specific engineering

reasons dictate otherwise. This is because seawalls take up less beach area and typically do not require annual sand redistribution to cover their bases.

- Revetments – These are engineered assemblies that begin with an underlayment of filter fabric placed against the slope of the exposed bluff. This is then covered by core-stones (400 to 600 lbs. each) faced with interlocked armor-stones (5 to 6 tons each). These engineered assemblies are sloped back along the inclined bluffs to shield them from wave attack. To mask any intrusive impact, nearly all engineered revetments installed since 1983 have been covered with local soils, then with beach sand, and then, replanted with vegetation. During the beach's peak visitor period (mid-Spring through mid-Fall), most of the revetments are so well covered that they are virtually indistinguishable from other portions of Carmel's beach and bluffs. Further, the City's beach management program directs the Forest and Beach Department's personnel to annually contract sand bulldozing from the lower beach to the upper beach, thoroughly covering exposed revetment structures.

Most visitors to Carmel's picturesque beach are unaware of this armoring because of the care taken to disguise the structures with soil, sand and landscaping. Policies in this plan support these past practices that combine engineered structures, sand management, and the preservation of beach aesthetics.

The City's Shoreline Management Plan includes a monitoring program to gauge the long-term effect of shoreline structures and directs the Forest, Parks and Beach Department's personnel to evaluate the impacts to marine and terrestrial resources of annually bulldozing sand from the lower beach to the upper beach. In the future, when existing structures fail and need to be replaced or substantially rebuilt, the data collected through the monitoring program will aid the City in determining the best design approach, to take in balancing protection of coastal resources, public access, public safety, aesthetics and engineering

The Shoreline Management Plan serves as a comprehensive document that will guide future management of the City's shoreline area, including beaches, dunes, bluff, landscaping, and associated infrastructure. Updates to the Shoreline Management Plan will be made periodically as new information and our understanding of shoreline processes, marine and terrestrial resources, and the coastal environment evolve.

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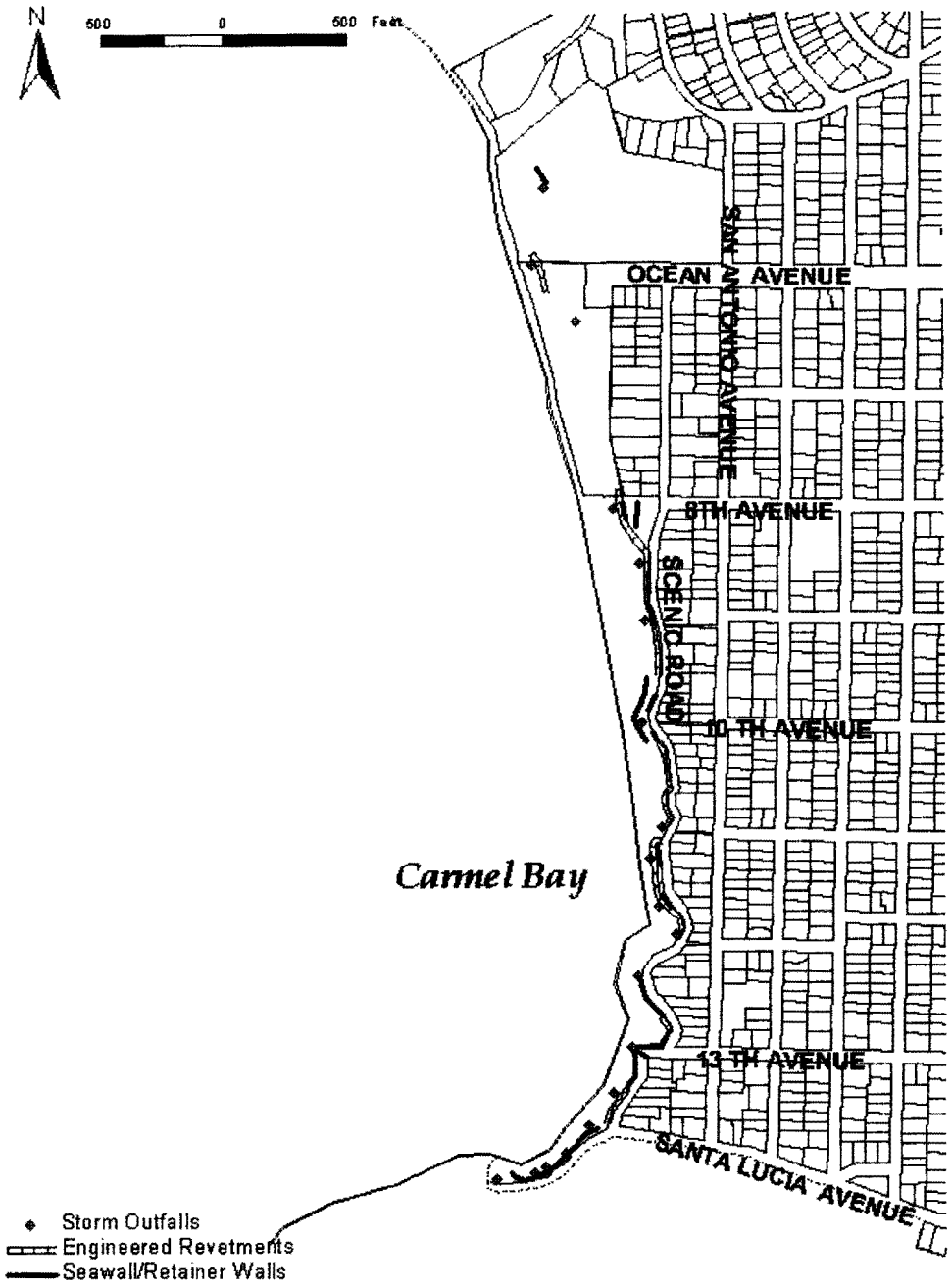

Figure 9.6a PUBLIC COASTAL PROTECTION STRUCTURES

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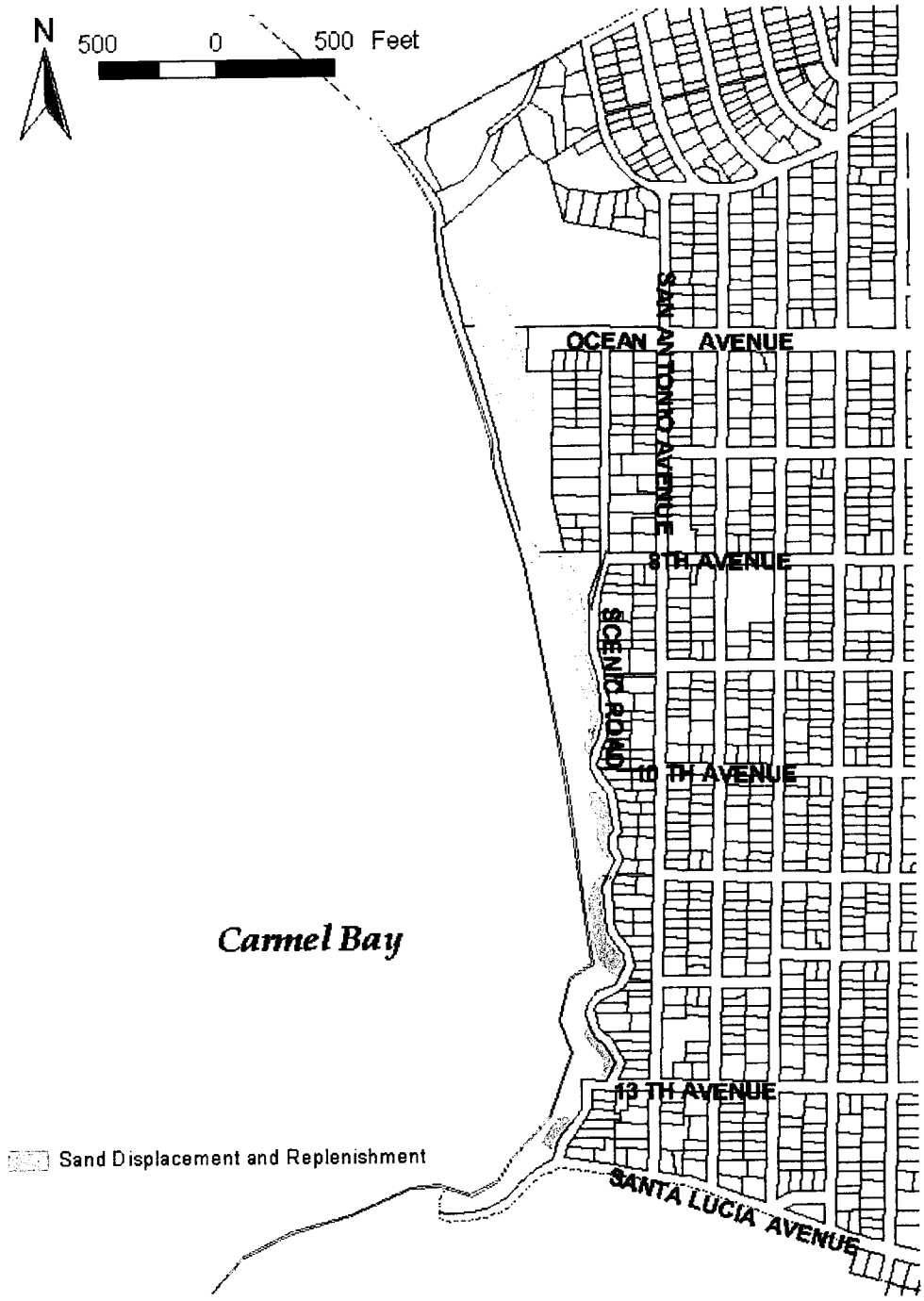

Figure 9.6b **SAND DISPLACEMENT AND DEPOSITION**

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Urbanized Forest, Parks and Open Spaces

Since the early 1900's Carmel's forest has been carefully nurtured and enhanced. Monterey pines, Coast Live oaks and other trees were often planted when lots were first sold or developed in an effort to extend the forest cover and range. Over time, the resident's ongoing interest in the forest and natural environment resulted in the adoption of ordinances, resolutions, policies and a Master Plan relating to trees. Taken together, these documents have successfully guided the City's tree program over the years. However, since the measures were adopted at different times to address separate concerns, they lacked a sense of overall cohesion. In order to meld these documents together, the first Forest Management Plan for the City of Carmel-by-the-Sea was adopted in 1971. In early 2001, the City updated the Forest Management Plan and incorporated it into the Local Coastal Program.

Carmel's forest is an "urbanized" Monterey pine forest rather than an "urban" forest. "Urban" forests are planted after development and typically consist of single species, regularly spaced trees planted in a row between the sidewalk and the street. An "urbanized" forest exists before development and is characterized by its diversity in species, age and randomness in tree location resulting in meandering streets of varying width.

To many, the "urbanized" forest is *the* character-defining feature that makes Carmel-by the-Sea so unique. The forest, along with the beach and ocean, is the City's largest and most visible natural resource. Homes are nestled into the native Monterey pine and Coast Live oak on a grid of streets that yields to trees more than to engineering expediency. Upper canopy trees impart a distinctive ambiance and identity to the City. Lower canopy trees soften and provide screening of development. Together the mix of upper and lower canopy trees establishes a powerful sense of place.

In a city with few formal street improvements or drainage systems, the "urbanized" forest also serves to convey runoff from the watershed to the beach and Carmel Bay through a variety of natural drainages, swales, and creeks. The forest performs the important functions of absorbing water from the soil, reducing runoff, filtering pollutants, and minimizing erosion. As such, the "urbanized" forest reduces the amount of polluted runoff and in large part, helps the City comply with the National Pollutant Discharge Elimination System (NPDES) Phase II Storm Water permit regulations.

In recent years, the Monterey Pine forest has suffered from a severe outbreak of pitch canker disease spreading throughout much of the City. The initial findings of a survey of the east side of town (east of Junipero Avenue) revealed that 50% of Carmel's pines were infected with pitch canker and 2% of the standing trees were dead. The City has responded in the past by removing dead and dying trees and disposing of the infected materials. During the years of 1999 to 2001, the Forestry Department removed roughly 180 pitch canker-infected pines. Roughly 70% of those trees (125) were young trees 12"or less in diameter. Up to 70% of the younger trees east of Junipero Avenue now appear to be infected. Older trees are less susceptible to infection and only 30% of these are infected.

The City's Forest, Parks and Beach Department has an ongoing program of replacing dead and diseased pines on public property. The City also has been working on developing a disease-resistant pine and has been successful in planting 15 pines that have so far proved to be completely resistant to the disease. However, the loss of Monterey Pines due to pine pitch canker and other causes on private property continues to be an issue.

The City of Carmel maintains an ongoing survey of trees by species and size, started in 1971. Since that time, the numbers of Monterey pines on public property declined roughly 2%, while the decline on private property has reached 10%. It is unclear whether pine pitch canker is entirely responsible for the decline on private property; there are many other factors including disease, development impacts, and old age. Though many large mature trees can probably survive pitch canker, given the age of the City's Monterey pine forest, coupled with the susceptibility of young trees to the disease, the overall health of the City's pine forest may be in jeopardy. As the number of Monterey Pines declined since 1971, the number of Coast Live Oaks increased 17% on private property and 40% on public property. The increase in oaks, dramatic as it may be, cannot offset the loss of Monterey pines, which impart a very different sense of place for the village.

Steps must be taken to minimize the threat to existing healthy Monterey pines and new seedlings to ensure continued diversity in species, age, and location. This document includes policies to respond to this issue. Disturbance and/or removal of mature and disease resistant trees during construction or other development activities should be avoided. Permit conditions requiring replacement trees for those removed from private land should be monitored and enforced to ensure that the trees are healthy and reach maturity. Replacements should also be in like kind. It is essential that these and other policy directives be carried out to ensure that the Monterey pine forest landscape is protected so that the forested character of this unique coastal village is preserved.

Environmentally Sensitive Habitat Areas

In addition to the urbanized Monterey pine forest, the City of Carmel-by-the-Sea has other environmentally sensitive habitats including wetlands, riparian forest, wet meadow, and coastal terrace prairie. In 1995, the City completed a detailed study of environmentally sensitive habitat areas (ESHAs) (Jones & Stokes, 1995), which includes specific recommendations for City policies and practices. Relevant policies and recommendations derived from this document are incorporated into this section of the Land Use Plan. Figure 9.7 shows a map of the currently designated ESHA's. The location and types of ESHAs found in Carmel include:

- Pescadero Canyon supports Monterey pine forest that provides watershed protection and a buffer for Pescadero Creek and is part of an important local wildlife habitat corridor, wetland drainage (Pescadero Creek), central coast arroyo willow riparian forest, and wet meadow.
- Mission Trail Nature Preserve supports Monterey pine forest; central coast arroyo willow riparian forest along wetland drainages; coastal terrace prairie; wet meadow; and known occurrences of special-status plant and wildlife species, including Hickman's onion, and Monterey dusky footed woodrat, which are state and/or federal species of special concern, as well as potential habitats for other special-status species.
- Carmel Beach supports dune scrub; unvegetated dunes; a known occurrence of Tidestrom's lupine, a state- and federal-listed endangered species, black legless lizard, a state species of special concern and other potential habitat for other special-status species.

A brief description and management guidance for these resources follows:

Pescadero Canyon. Pescadero Canyon, located along the northern boundary of the City, supports two undeveloped segments referred to as Pescadero Canyon East and Pescadero Canyon West. These two segments are part of the larger Pescadero Canyon that extends to the northeast beyond the City's jurisdiction. Pescadero Canyon supports Monterey pine forest along its slopes and riparian and wetland habitat at the bottom of the canyon along Pescadero Creek. Most of Pescadero Canyon is in private ownership and supports some residential development.

The Pescadero Creek watershed begins on marine terrace 6 at the top of Huckleberry Hill and extends down through a succession of geomorphic surfaces to the Pacific Ocean. This succession of marine and dune-covered terraces can be observed along the steep canyon walls. Exposed in the canyon bottom and adjacent side slopes are the soils and shale bedrock of the Monterey formation.

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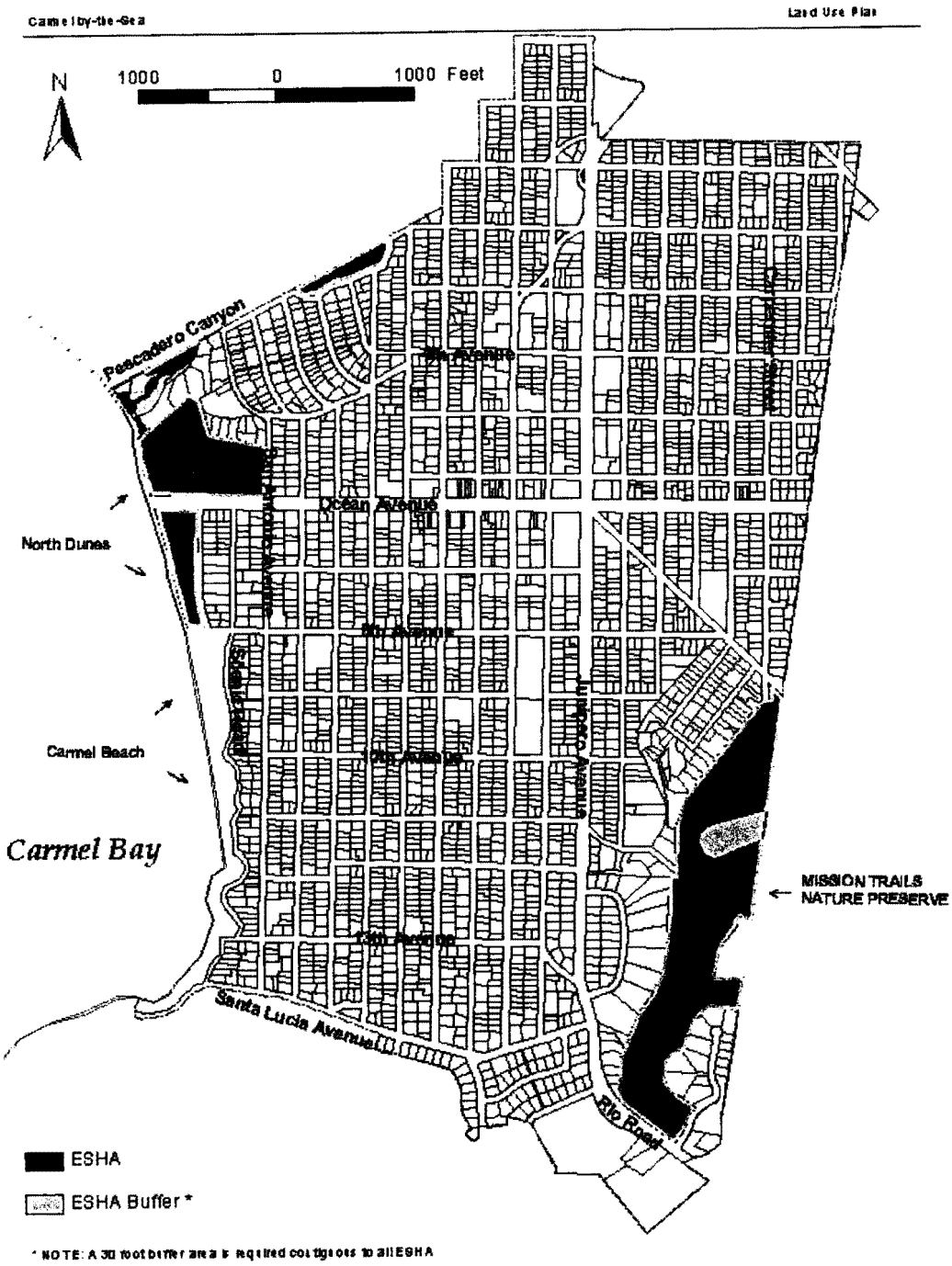

Figure 9.7 ENVIRONMENTALLY SENSITIVE HABITAT AREAS

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Under natural conditions, a high rainfall runoff rate and consequent high discharge into Pescadero Creek would be expected on the Narlon soils of the marine terraces. The natural runoff rate and stream flows in Pescadero Creek have increased beyond natural conditions with development in the Pescadero Creek watershed.

Pescadero Canyon East supports Monterey pine forest along the steep slopes of the canyon. Wetland drainage and two small, planted redwood groves can be found at the bottom of the canyon. Monterey pine forest in Pescadero Canyon East can be found on middle-aged dunes and on shale bedrock. Within this part of the Canyon, Monterey forest on middle-aged dunes is dominant occurring on the upper north-facing slope of Pescadero Canyon, along 2nd Avenue. Monterey pine forest on shale bedrock forms a narrow band on both sides of the Creek. Pescadero Canyon East is traversed by a perennial drainage that conveys runoff from the upper reaches of Pescadero Canyon to Carmel Bay. The drainage bottom varies from 3 to 6 feet wide and is generally unvegetated. Wetland plants occur sporadically along the drainage edge. No special-status species have been found in Pescadero Canyon East.

Pescadero Canyon West is characterized by less extreme slopes than are found in the eastern part of the canyon. This flatter area supports a mosaic of wetland drainage, central coast arroyo willow riparian forest, wet meadow, and mixed horticultural species. Pescadero Creek terminates at the western edge of Pescadero Canyon West. In this area of the canyon the creek supports dense riparian forest and wet meadow along its banks. Central coast arroyo willow riparian forest occurs as a dense multilayered forest at Pescadero Canyon West, adjacent to Pebble Beach Golf Course. The riparian forest canopy and subcanopy are dominated by arroyo willow with interspersed dogwood. A mix of native and non-native species characterizes the under-story. Wet meadow also occurs in Pescadero Canyon West, along the southern side of the perenial drainage. The 750-square-foot wet meadow area supports sedge, panicled bulrush and horsetail.

Management guidelines for Pescadero Canyon should be implemented that respond to the following issues of slope and channel stability, habitat enhancement and control of invasive vegetation:

- Reduce erosion and sedimentation into the creek channel and Carmel Bay
- Remove accumulated debris from the creek channel
- Minimize vegetation removal that could destabilize slopes
- Prohibit removal of native vegetation from riparian forest and Monterey pine forest habitat.

- Avoid the introduction and control or reduce the spread of invasive horticultural species
- Require mitigation of impacts associated with development in or near the canyon
- Avoid impacts to wet meadow and other wetland habitat types within Pescadero Canyon East and West and any other environmentally sensitive habitat areas

Mission Trail Nature Preserve. Mission Trail Nature Preserve lies along much of the City's eastern boundary and is the largest ESHA in the City. It contains a wide variety of habitat types. To describe this area the Preserve is divided into four planning units: Martin Road Parcel, Park Proper, Flanders Mansion/Rowntree Native Plant Garden and Outlet Meadow. The Preserve supports a vegetation mosaic consisting of Monterey pine forest on inland granitic bedrock and oldest dunes, central coast arroyo willow riparian forest, wetland drainage, wet meadow, coast live oak woodland, coastal terrace prairie and horticultural plantings.

- Martin Road Parcel supports coastal terrace prairie and a population of Hickman's Onion (a federal species of concern).
- Park Proper supports Monterey pine forest on inland granitic bedrock and oldest dunes, central coast arroyo willow riparian forest, wetland drainage, Cottonwoods and coast live oak woodland that is suitable habitat for Monterey dusky-footed woodrat, a federal and state species of special concern.
- Flanders Mansion/Rowntree Native Plant Garden supports Monterey pine forest on inland granitic bedrock with horticultural plantings.
- Outlet Meadow supports central coast arroyo willow riparian forest, wetland drainage, wet meadow, coastal terrace prairie, and Coast Live oak woodland.

Monterey pine forest on inland granitic bedrock is dominant in the Preserve. One small area of Monterey pine forest on oldest dunes occurs in the northern corner of the Preserve. Only 20 percent of the historical extent of Monterey pine forest on oldest dunes remains on the Monterey Peninsula. In general, the Preserve supports mature large Monterey pine with a subcanopy layer of Coast Live oak and a dense understory of shrub, vine, and herbaceous species.

Oak woodland, coastal terrace prairie and several riparian/wetland habitat types complete the mosaic found in the Preserve. A small area of coast live oak woodland occurs in the southeastern corner of the Preserve. The woodland is characterized by a

closed canopy of Coast Live oaks with an understory of coyote bush, California blackberry, poison oak and herbaceous species. Coastal terrace prairie occurs along west-facing and south-facing slopes in the Martin Road Parcel and Outlet Meadow units. These sites appear to occur on old alluvial terraces of the Carmel River. Coastal terrace prairie typically occurs within the zone of coastal fog incursion, on sandy loam. Most stands are patchy and variable in composition, reflecting local differences in available soil moisture capacity.

Saturated soils and flowing water have been observed at the upper edge and lower bottom of the coastal terrace prairie. The presence of this wetland hydrology and a prevalence of hydrophytic wetland plants indicate that part of the coastal terrace prairie may qualify as jurisdictional wetland under section 404 of the Clean Water Act and the Coastal Act.

Two main perennial drainages and several smaller drainages transect the Preserve. The main perennial drainage enters the Preserve at its northern end, runs along its western boundary and forks near the center of the Preserve. At the north end this drainage is generally unvegetated. The steep bank sides are vegetated with Monterey pine and coast live oak with a dense understory of shrubs and vines. French broom dominates the banks along the northern portion of the drainage, grading into a dense central coast arroyo willow riparian forest (near the Eleventh Avenue entrance to the Preserve at Willow Trail). Another perennial drainage feeds into the Preserve from the east, supporting a dense central coast arroyo willow riparian forest.

Central coast arroyo willow riparian forest occurs as a dense, multi-layered forest along the northern boundary of the Preserve. As mentioned above, riparian forest also occurs along a perennial drainage near the western boundary of the Preserve. The riparian forest is characterized by a canopy layer of black cottonwood and arroyo willow with a subcanopy layer of shrub-size arroyo willow and dogwood. In localized areas, invasive horticultural species form a conspicuously dense under-story in the forest and have displaced desirable native riparian species.

Special-status species have been found in the Preserve, including Hickman's onion, a federal species of concern and included on California Native Plant Society (CNPS) List 1B, which includes plants considered by CNPS to be rare, threatened, or endangered in California and elsewhere due to their limited or vulnerable habitat, their low numbers of individuals per population, or their limited number of populations. Federal species of concern are not listed or candidates for listing as threatened or endangered, and they have no formal protection under the Federal Endangered Species Act. The designation merely indicates that U.S. Fish & Wildlife Service (USFWS) is concerned about these species.

Hickman's onion is known from fewer than twenty populations and is threatened by urbanization, grazing, road construction and military activities. A nearby occurrence of Hickman's onion was previously identified along the south side of Hatton Road just east of Mission Trail Nature Preserve (Department of Fish and Game, Natural Diversity Database, 1994). A new population within the Preserve was found during field surveys in 1995 along the upper eastern edge of the coastal terrace prairie (Jones and Stokes, 1995). This population contains approximately 100-150 individual plants. The area that supports Hickman's onion is maintained by mowing each year. The overall effects on the population from this maintenance activity are unknown and should be assessed through monitoring efforts. Although no other special-status plant species have been located in the Preserve, suitable habitat was identified for several late-blooming species including Gairdner's yampah and Seaside bird's beak.

The presence of one special-status wildlife species, the Monterey dusky-footed woodrat, a federal and state species of special concern, was observed during fieldwork in the Preserve (Jones and Stokes, 1995). As with federal species of concern, state species of special concern are not listed or candidates for listing as threatened or endangered and have no formal protection under the State Endangered Species Act. The designation merely indicates that California Department of Fish and Game (DFG) is concerned about these species and that special consideration should be taken when decisions are made regarding the future of an area containing these species.

Two woodrat nests were observed on the eastern edge of the Preserve and several nests were seen in the Outlet Meadow area. The nests had obvious entrance and exit holes that showed evidence of use and appeared active. Because of the relatively large size and isolation of the Mission Trail Nature Preserve, it has the greatest potential ecological value of all the habitats studied in the City. The dense riparian areas provide potential habitat for yellow warbler. The fairly frequent downed and decomposing logs could potentially be used by the Monterey ornate shrew. Sharp-shinned hawks and Cooper's hawks could use the Monterey pine forest for foraging and nesting.

Management guidelines for Mission Trail Nature Preserve should be implemented that respond to the following issues of habitat quality and enhancement and control of invasive vegetation:

- Reduce erosion and loss of native coastal terrace prairie vegetation
- Enhance the habitat value of the coastal terrace prairie
- Monitor and protect the Hickman's onion population
- Maintain and enhance habitat for the Monterey dusky-footed woodrat

- Prohibit removal of native vegetation from riparian forest habitat
- Reduce the introduction and spread of invasive horticultural species
- Survey for special status plants periodically and manage as appropriate.

Carmel Beach and Shoreline. The white sands of Carmel Beach form the entire western boundary of the City. Although largely unvegetated, Carmel Beach does support scattered areas of native dune scrub and horticultural plantings. Native dune scrub occurs near the corner of Ocean and San Antonio Avenues in the North Dunes area. Species observed in this scrub habitat during the field survey include mock heather, bush lupine, beach sagewort, California blackberry, beach evening primrose, pink sand verbena, croton, California sea rocket and ice plant. Coast Live oaks are scattered in the dune scrub. Horticultural plantings occur in scattered locations along the bluffs of the Carmel shoreline. One grove of Monterey cypress occurs along Ocean Avenue, near the dune scrub.

Tidestrom's lupine can be found in and near the dune scrub habitat in the north dunes at Carmel Beach. Tidestrom's lupine is a state and federal listed endangered species and is on list 1B of the CNPS. This is a perennial herb that typically occurs in coastal dune habitat. The species is seriously threatened by coastal development, trampling, and competition from invasive, non-native plants. The Carmel dunes population is a new occurrence first reported in 1995 and contains approximately 280 individual plants (Jones and Stokes, 1995). Other populations nearby can be found at Asilomar State Beach and at several locations in Pebble Beach. At Carmel, the plant is associated with beach sagewort, mock heather, beach evening primrose, bush lupine and wildrye. While the local population appears viable the habitat conditions for Tidestrom's lupine is degraded from public use and the spread of invasive non-native species. No other special-status plant species have been reported but the habitat is suitable for one-awned spineflower, robust spineflower, and beach layia.

In this area, black legless lizard, a State species of special concern, has been reported as well. Twelve of these lizards were captured in the dunes along the Carmel shoreline in 1984 during a USFWS study (Bury 1985). Currently, potential habitat for black legless lizards exists in the eastern portion of the north dunes area where a small pocket of native dune vegetation exists. Frequent human use of the area and encroachment of non-native species such as ice plant reduce the area's value for legless lizard. The potential for these lizards to still occur along Carmel's shoreline is considered moderate. No other special-status wildlife species are expected to occur along the shoreline.

ESHA Management guidelines for the Carmel shoreline should be implemented that respond to the issues of habitat quality enhancement and control of invasive vegetation:

- Restore, enhance and protect the dunes to improve habitat for Tidestrom's lupine
- Develop interpretive signage to educate the public about dune ecology and discourage trampling of dune vegetation
- Avoid planting and control the spread of invasive, non-native plants
- Monitor the population of Tidestrom's lupine and adjust management programs to retain or increase the size of the existing population
- Determine whether black legless lizards remain along the Carmel shoreline Implement habitat conservation and restoration measures if this species is found to exist.

Water Quality, Drainage and Marine Resources

The City presently coordinates with the Carmel Area Wastewater District, the County of Monterey and other public agencies concerning the status and impact of future development on the water quality of the Carmel Bay Area of Special Biological Significance (ASBS). Since Carmel Bay is not under the direct planning purview of the City, this coordination role is the appropriate response for the City to this concern. Compared to the impact of growth in other areas, the impact of Carmel growth on future water supply and quality is minimal. However, the City has an important role to play in assuring that new development in the incorporated City limits does not contribute to water quality impacts from storm water or drainage discharges into the bay.

Storm runoff onto Carmel Beach has been addressed in two fashions. First, the Association of Monterey Bay Area Governments, in preparation of the area wide 2008 water quality plan, reviewed the issue of runoff. It noted that high-density development has been causing sediment discharge in the area and encouraged local jurisdictions to adopt erosion and sediment control ordinances. Second, and more specifically, the adopted policy of the City is to clean the portions of the beach affected by runoff and sediment deposits after each winter. In this fashion, build-up of potential contaminates is prevented and the general quality of the sand is enhanced. Once each year, the beach is also re-contoured under the policies of the Shoreline Management Plan to reestablish the beach and bluff configuration, which is altered throughout the course of each year by visitor foot traffic.

As a third management approach, the City is developing its NPDES Phase II Storm Water Plan (SWMP) and procedures manual that incorporates Best Management Practices to reduce the negative effects related to storm water runoff. The program outlines six minimum measures to proactively attack the problem of storm water runoff in a semi-urban area like Carmel. Minimum measures of the Storm Water Management Plan (SWMP) shall include:

- Public education and outreach
- Public participation and involvement
- Illicit discharge detection and elimination
- Pollution prevention and good housekeeping for municipal operations
- Construction site storm water runoff control
- Post-construction storm water management in new development and redevelopments.

Best Management Practices (BMPs) include the City's routine street sweeping of roads, parking lots, and the commercial area. The education component informs residents of the consequences of using pesticides/fertilizers, and the benefits of cleaning up after pets. BMPs will address construction site "do's and don'ts." The City also has installed large storm water filter devices at the ends of Ocean Avenue and Fourth Avenue. Additional storm water filter systems are being installed at Sunset Center and at Eleventh Avenue/Torres Street near Mission Trail Nature Preserve. These systems collect runoff from the commercial area and the Ocean Avenue corridor removing debris and suspended materials before conveying runoff directly to the beach or into Mission Trail Nature Preserve and ultimately into Carmel Bay. Additionally, the Carmel Shoreline Management Plan includes a commitment to evaluate the feasibility of retrofitting storm water outfalls on the beach south of Ocean Avenue with filtration or treatment devices.

Goals, Objectives and Policies

Beach Maintenance and Shoreline Protection

G9-10 Establish and implement a comprehensive shoreline management program for the beach, bluffs and dunes that mitigates degradation caused by public use and natural forces.

O9-28 Minimize erosion of the bluffs.

P9-157 Pursue scientific studies that document physical processes occurring at Carmel Beach (e.g. sediment transport, sand bar dynamics and influences from the Carmel Offshore Canyon). Seek funding for such studies from governmental agencies.

P9-158 Obtain and maintain an accurate digitized map of the Carmel shoreline to develop the City's beach management and maintenance policies. Analyze shoreline changes to facilitate early identification of erosion hot spots, sand sediment losses/gains, migration of engineered revetments, and other long-term impacts.

P9-159 Place a series of permanent surveyed benchmarks running the length of Carmel Beach. The surveyed benchmarks shall be described in relation to National Geodetic Vertical Datum (NGVD) and identified through permanent markers, benchmarks, survey position, written description, reference numbers, et cetera to allow measurements to be taken at the same location in order to compare information between years.

P9-160 Prepare as-built plans showing the extent of all armoring in the SMP plan area in relation to the existing topography and other relevant features (including the top of bluff, base of bluff, sand-bluff interface, sandstone platforms, Scenic Road, Scenic Road pathway, and utilities in the Scenic Road right-of-way, etc). The as-built plans shall indicate vertical and horizontal reference distances from the surveyed benchmarks to the survey points on each structure for use in future monitoring efforts.

P9-161 Protect public access, Scenic Road, and the aesthetic character of the coast by maintaining existing seawalls and engineered revetments and by installing new protective structures when warranted. When any existing seawalls or revetments need to be replaced or substantially reconstructed, review seawall and revetment design alternatives, as well as other beach management strategies and determine the best balance among objectives for access, aesthetics and protection of coastal resources (biological, geological, and recreational). Protect the natural character and features of the Del Mar Dunes by prohibiting the construction of

any new shoreline protective structures unless required for public safety, access or habitat preservation. For the beach and shoreline area south of Eighth Avenue, only consider the installation of new protective structures after careful review of alternatives and when found to be warranted for protection of existing structures and access amenities from erosion risks. Mitigate the impacts of shoreline protective structures on visual quality and beach dynamics using landscaping, sand management and prudent engineering.

P9-162 Construct new shoreline armoring in areas previously unprotected only when required to protect existing structures in danger of erosion or wave action and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Require any approved structures to include native landscaping (screening), be visually compatible with existing seawall designs, address drainage, incorporate visual mitigation, sand coverage for revetments, and golden granite facing for seawalls.

P9-163 Encourage the use of existing stairs, trails and pathways, and discourage off-trail "short cuts" on or over the bluff face. Install landscaping barriers at each "short cut" on the face of the bluffs and immediately restore damaged landscaping.

P9-164 Perform monitoring and maintenance of shoreline facilities and protective structures throughout the year including restoration of damaged vegetation, public facilities, infrastructure and access facilities. Restore sand levels annually and replace or repair damaged vegetation as needed.

P9-165 Evaluate the storm-water outfall system for purposes of reducing impacts to the beach environment. Consider options to modify and/or remove outfalls and replace or retrofit storm drains with filters or treatment devices to reduce impacts on the shoreline environment.

P9-166 Runoff from storm water outfalls shall be conveyed onto Carmel Beach in a non-erosive manner (i.e. runoff shall be discharged so as to minimize erosive forces.)

P9-167 Prohibit any construction of substantial or permanent structures on the beach or within Carmel Bay except where required for

O9-30 Perpetuate the mix of native dune and horticultural plants in an informal beach landscape.

P9-178 Continue the use of Monterey cypress as the predominant tree species on the beach bluff and North Dunes. The exact number of trees may vary over time, but whenever a tree dies or is lost during a storm, replacement trees should be planted in approximately the same location. Maintain a low-to-medium density of trees (40 to 60 trees) in the North Dunes.

P9-179 Encourage neighborhood cooperation and volunteers to assist City staff with the care of the landscape along the pathway.

P9-180 Maintain an attractive mix of plant material that favors native species and other, drought-tolerant, noninvasive species.

P9-181 Restore dune areas to improve habitat for Tidestrom's lupine and other native dune plants.

P9-182 Prohibit planting and control the spread of invasive non-native plants.

P9-183 Improve habitat values for the preservation of the California black legless lizard.

P9-184 Encourage the extension of the City's Pathway landscape style onto neighboring properties:

- Bring all City-owned property along this portion of Scenic Road into compliance with the approved Pathway plan.
- Encourage private property owners to draw from the broad palette of plants used in the Pathway design.
- Make presentations to the Scenic Road Property Owner's Association about this concept and share with the Association the plant list and a list of local suppliers.
- Encourage the use of plants from this palette when reviewing projects on Scenic Road through the Design Review processes.

P9-185 Evaluate the Pathway landscape, including plant selection and associated design elements in consultation with a coastal landscape

specialist; identify sites that require revitalization and implement restoration based on the Pathway Design Plan. Address the most severely impacted sites first.

O9-31 Maintain the vegetation and trees along the shoreline in a safe and healthy condition.

P9-186 Protect Monterey cypress from structural damage caused by high winds. Develop a proactive trimming program to reduce length and weight of limbs and branches.

P9-187 Prune or repair trees immediately following limb failure to mitigate any safety hazards. At other times, trees may be pruned in accordance with City policy, keeping public safety, access and the tree's health as the primary goals.

P9-188 Pruning of vegetation will be done as needed for the health of the plants. This is a natural landscape and formal garden pruning is to be avoided. The pathway must be kept clear of overgrowth and periodic pruning is desired. However, neat straight edging is discouraged. Prevent shrubs from growing too high and blocking views of the ocean through the Cypress trees along the Beach Bluff Pathway.

O9-32 Continue implementation of the *Shoreline Emergency Action Response Plan* to minimize the dangers to public safety and facilities that may be caused by winter storms or other natural disasters.

P9-189 Maintain the existing shoreline maintenance and emergency reserve account. Build fund balances over time, to the extent feasible, to handle future emergency repairs at the beach.

P9-190 Consider beach-related projects that address public safety and access as high-priority projects when preparing budgets.

O9-33 Keep the beach free of refuse.

P9-191 Provide sufficient trash containers at the beach. Regularly patrol the beach and Del Mar area to remove all litter and excess charcoal from the sand, bluffs and parking lot.

P9-192 Encourage volunteer programs for beach and bluff clean-up activities.

development through this process. This shall be done before plans have been drawn.

P9-224 Evaluate, protect and preserve all trees (and their root zones) on sites prior to, during, and after construction. Ensure that all building sites abide by appropriate tree protection and preservation standards and guidelines provided in the Forest Management Plan.

O9-40 Perform all tree work and landscaping within the City in accordance with City codes and policies and uniform planting practices that reflect the best current knowledge of tree and plant care.

P9-225 Maintain close cooperation among all public agencies, tree services, arborists, landscape architects, gardeners and utility companies affecting the urban forest.

P9-226 Require that all City departments, utility companies, tree service companies, arborists, landscapers and gardeners adhere to the adopted Tree Maintenance Standards policies and guidelines.

P9-227 Provide a comprehensive training program for City staff and encourage employees to become Certified Arborists or Certified Tree Workers under the standards of the International Society of Arboriculture.

P9-228 Negotiate with the Public Utilities Commission and utility companies to adopt minimal line clearance standards to give special attention to Carmel's urbanized forest.

O9-41 Maintain a healthy forest.

P9-229 Work in concert with other area foresters and arborists, the Monterey Pine Forest Ecology Cooperative, the Pitch Canker Task Force, Oak Mortality Task Force and university researchers to address acute concerns to the health of the forest.

P9-230 Monitor tree pest and disease problems and take appropriate measures to minimize their impact.

P9-231 Foster healthy and disease resistant trees and avoid widespread application of pesticides.

P9-232 Investigate ways to discourage large trucks from using streets with low tree limbs.

P9-233 Plant native Monterey pine seedlings of different genotypes to maximize resistance to diseases and make these seedlings available to the public.

P9-234 Minimize risk to trees by regulating the use of heavy equipment.

P9-235 Properly dispose of diseased trees and recycle tree waste

P9-236 Avoid disturbance and fragmentation of large intact stands of Monterey pine.

P9-237 Minimize the spread of pitch canker through appropriate methods (sterilize equipment, appropriate disposal of cuttings, etc.).

P9-238 Conduct most City pruning activities on Monterey Pine and other conifers during winter months when insect populations are less active and when bird, raptor and mammal populations are not nesting.

O9-42 Educate and involve the public in tree issues.

P9-239 Undertake an active program of community outreach and education.

P9-240 Publish timely tree care articles in local news media.

P9-241 Encourage monetary and other contributions in support of the urbanized forest program.

P9-242 Provide the City Council, Planning Commission and Forest and Beach Commission with information on an annual basis from the ongoing tree survey regarding projected changes in the composition of the forest and recommendations for policy amendments.

P9-243 Involve citizen groups in forestry programs so that forest-related subjects are seen as community issues that require broad based involvement and support.

G9-14 Maintain and enhance the informality of streetscapes.

P9-260 Provide for public access and passive enjoyment of City parks and open space.

P9-261 Provide and maintain informal trails if there is public demand.

G9-17 Conserve water and minimize storm runoff

O9-49 Maximize retention of surface water on each site through site design and use of best management practices.

P9-262 Where feasible, direct street runoff to open space areas on public or private property for percolation into the soil.

P9-263 New construction plans should include design features to enhance surface water percolation. Where practical, runoff from the roof, driveway and other impervious surfaces shall be collected and directed into pervious areas on the site (landscaped areas) for infiltration in a non-erosive manner, prior to being conveyed off-site.

P9-264 Encourage homeowners to absorb surface water on their own property. Implement development standards that minimize runoff and the amount of area paved with impervious surfaces. Encourage homeowners and commercial property owners to install cisterns for landscaping to decrease water use and to reduce runoff.

P9-265 Implement the public rights of way design guidelines for the commercial district that call for sand-set pavers for all sidewalks and patios and includes collection of roof drainage to irrigate landscaping and street trees.

O9-50 Landscape with drought tolerant plants, shrubs and trees of the urbanized forest.

P9-266 Provide to the public an established list of indigenous and non-indigenous drought tolerant plants.

P9-267 Require approval of landscape plans for drought-tolerance and trees by the Forest, Parks and Beach Department on new construction at Final Design Review or before issuing a building permit. Include specifications for location, species, size and

planting guidelines for all required replacement trees in this review.

O9-51 Minimize the use of potable water for landscape irrigation.

P9-268 Use low output sprinkler heads and/or drip irrigation for landscape irrigation systems.

P9-269 Use on-site water retention devices to capture precipitation or surface runoff for landscape maintenance purposes.

Mission Trail Nature Preserve

G9-18 Preserve the forested tranquil atmosphere of Mission Trail Nature Preserve.

O9-52 Preserve and enhance the vegetative diversity in Mission Trail Nature Preserve consisting of Monterey pine forest, central coast willow riparian forest, wet meadow, coast live oak woodland, redwood, box elder, cottonwood, coastal terrace prairie and horticultural plantings.

P9-270 Continue the annual Monterey pine seedling planting during the winter of each year (utilizing the seed collecting guidelines of the Genetic Resources Conservation Program of the University of California, Davis in order to maintain appropriate genetic diversity). Enhance efforts to replant and maintain native tree species similar to nearby native riparian vegetation.

P9-271 Avoid removal or pruning of native riparian vegetation except for drainage channel and road/trail clearance and/or for the purpose of new native indigenous tree/shrub establishment.

O9-53 Enhance the coastal terrace prairie habitat on the west and south facing slopes in the Martin Road parcel and between the Outlet Meadow and Ladera Drive.

P9-272 Remove by hand nonnative shrubs and their roots invading these areas during late spring when soils are moist and before seed/seed pods become viable.

P9-273 Avoid further erosion and loss of native coastal and terrace vegetation.

O9-54 Reduce the introduction and population of invasive horticultural species in the Preserve.

P9-274 Provide residents of adjacent properties with a list of plants that are compatible with the native vegetation of the Preserve. Encourage use of this list as a guide for planting private landscapes. Additionally, provide a list of invasive plants to avoid.

P9-275 Organize volunteer work groups to remove non-native plants from the Preserve. The California Department of Forestry and Fire Protection crews from Gabilan Camp could be used to assist in this effort.

G9-19 Protect, maintain and enhance the rare coastal habitats and associated plants and animals within Mission Trail Nature Preserve.

O9-55 Prepare annual maintenance plans for habitats within the Preserve. Encourage native vegetation to re-establish on sites previously mowed, cut, or invaded by exotic species.

P9-276 Allow willows to grow in the riparian corridor and the wet meadow.

P9-277 Consider removal of both intentionally introduced plants and invasives by instituting an annual program through joint efforts of contract workers and volunteers.

P9-278 Research the most appropriate time for mowing grasses to encourage the growth of native plants and discourage exotics and schedule accordingly.

O9-56 Monitor and protect the Hickman's onion population found in the Preserve.

P9-279 Consider retaining a qualified volunteer botanist to monitor the population of Hickman's onion to determine if current management practices and public use of the coastal terrace prairie are affecting the viability of the population.

P9-280 Limit access in the coastal terrace prairie during winter and spring months when soil disturbance could affect the species.

O9-57 Maintain and enhance habitat for Monterey Dusky-Footed Woodrat (a special-status wildlife species), in accordance with recommendations of a qualified wildlife biologist.

P9-281 Consider retaining a volunteer biologist to monitor the rat's population and develop a management plan to help ensure its survival.

P9-282 Minimize disturbance within 200 feet of any Woodrat nests.

P9-283 Prohibit cleaning of City maintenance equipment in the Preserve.

G9-20 To preserve the natural drainage of Mission Trail Nature Preserve and enhance wetlands.

O9-58 Maintain natural drainage patterns except where erosion or human safety problems may be created. Maintain the existing creek bed and preclude it from becoming debris clogged.

P9-284 Remove fallen trees and limbs from the stream channels as needed. Place natural boulders and creek cobbles to prevent erosion only in situations where private property or public safety is at risk.

P9-285 Repair stream bank deterioration as it occurs, and remove inert debris and new growth to the extent that they prohibit water flow within the established channel. Projects of this nature shall be reviewed by the Forest and Beach Commission, similar to its review of street projects.

P9-286 Maintain a box culvert inlet adjacent to Rio Road to prevent flooding.

P9-287 Consult with appropriate agencies regarding wetland management.

P9-288 Preclude manmade objects from inhibiting drainage along the road in Mission Trail Nature Preserve.

P9-289 Maintain the shoulders and cross flows on the Preserve bed to insure surface water can easily enter the creek.

P9-290 Clean and grade road shoulders and maintain culverts at least twice yearly, to insure continuous drainage. Trimming by the

Forest and Beach Department will be conducted to the extent necessary to allow access by the City maintenance equipment and fire apparatus.

O9-59 Provide reasonable low-impact uses of the Mission Trail Nature Preserve for the enjoyment of its natural surroundings and plant and wildlife inhabitants.

P9-291 Maintain and make available an up-to-date printed brochure that offers Preserve users helpful information. The brochure would also offer appropriate explanations for Preserve use restrictions.

P9-292 Provide maximum pubic access to and within Mission Trail Nature Preserve that is easy to maintain and protects environmental resources.

P9-293 Formalize a trail through Martin Meadows.

P9-294 If retained by the City, preserve the Outlands property and grounds at Mission Trail Nature Preserve consistent with its status as a nationally registered historical resource.

P9-295 If retained by the City, utilize the Outlands property at Mission Trail Nature Preserve in a manner beneficial to the residents of Carmel-by-the-Sea while minimizing its expense to the City.

P9-296 If retained by the City, support uses at the Outlands property that are compatible with its location in Mission Trail Nature Preserve and adjacent to the Rowntree Native Plant Garden and Hatton Road neighborhood.

O9-60 Maintain the Rowntree Native Plant Garden within Mission Trail Nature Preserve as an area where the general public can view and study native California plants and trees. The goal is that the knowledge gained will lead to an expanded use of California native plants in private landscapes.

P9-297 Create and maintain a demonstration garden for native flowers in Mission Trail Nature Preserve.

P9-298 Label native plants and areas in the garden at Mission Trail Nature Preserve with identifying and explanatory information.

O9-61 Consider establishing a Volunteer Committee to assist the City Forester and staff in responsibility for the garden at Mission Trail Nature Preserve.

P9-299 Maintain communication between Forest and Beach Commission and Monterey Bay Chapter of the California Native Plant Society.

P9-300 Recruit and train volunteers to plant, weed, water and care for the garden in Mission Trail Nature Preserve under the direction of the Forest, Parks and Beach Department staff.

P9-301 Schedule and advertise volunteer workdays as needed to maintain the garden in Mission Trail Nature Preserve.

G9-21 Maintain Mission Trail Nature Preserve using great care to avoid degradation of resources.

O9-62 Implement the Mission Trail Nature Preserve Master Plan maintenance provisions.

P9-302 Repair stream bank deterioration as it occurs, and remove inert debris and new growth to the extent that they prohibit water flow within the established channel. (Annually: September - October.)

P9-303 Clean and grade road shoulders and maintain culverts to ensure continuous drainage. Trim vegetation to the extent necessary to allow access of equipment (Annually: September - October.)

P9-304 Remove fallen limbs and trees from stream channels (As needed.)

P9-305 Place rip-rap to prevent erosion only in situations where private property or public safety is at risk (as needed.)

P9-306 Mow meadow grasses to reduce the risk of fire (June.) if consistent with special status plant management needs.

P9-307 Maintain Serra Trail to allow access of emergency vehicles (Semiannually.)

P9-308 Remove dead/hazardous trees only as needed. Leave dead trunks in place when not hazardous to provide habitat for woodpeckers and other fauna.

P9-309 Conduct trail maintenance and clearance (June - August.)

Environmentally Sensitive Habitat Areas

G9-22 Identify, protect and manage Environmentally Sensitive Habitat Areas (ESHAs) to ensure their long-term integrity and the biological productivity of these habitats.

O9-63 Monitor, study and develop effective management programs for the City's parks and ESHAs. Endeavor to reduce conflicts between environmental protection and use of public and private property within ESHAs.

P9-310 Support public ownership of sensitive habitats and encourage public-private partnerships for the long-term management of habitats.

P9-311 Regulate the removal or alteration of riparian vegetation within identified ESHAs to protect riparian habitats.

P9-312 Maintain and enhance the resource value of environmentally sensitive habitat areas in consultation with a qualified biologist and in coordination with the California Department of Fish and Game. Remove any non-native, invasive vegetation from sensitive habitats.

P9-313 Implement a Transfer of Development Rights program to allow owners of single-family residential lots containing ESHAs to transfer water credits, density, floor area or some other form of development credit to other property within the City as an alternative to the development of their lots. If this proves infeasible, allow such lots to be developed with one single-family house limited in size to not more than 50% of the standard floor area for the lot, sited and designed to avoid or, if avoidance is not possible, minimize disturbance of the ESHA to the greatest degree possible. Also consider purchase of private ESHA properties with assistance from land trust or similar organizations.

P9-314 Avoid disturbance or degradation of resources when maintenance vehicles and equipment enter sensitive habitat areas.

O9-64 Reduce the introduction and spread of invasive horticultural species into and within identified ESHAs. Encourage a volunteer program of citizens and property owners to participate in maintenance and enhancement of sensitive habitats Develop a Stewardship Program based on the premise

that resource management is a cooperative effort between the City and its citizens

P9-315 Establish a 100-foot buffer measured from the edge of the riparian habitat where fertilizers, pesticides, herbicides, or other chemicals are prohibited.

P9-316 Prepare and distribute an information pamphlet about the Stewardship Program to educate landowners on the importance of maintaining and enhancing ESHAs and other important habitats that cross over park boundaries and into residential neighborhoods.

P9-317 Compile and maintain a mailing list of all property owners adjacent to each ESHA. Send periodic mailings or information sheets to property owners concerning various topics, such as maintenance of fire buffers, use of native plants in landscaping to enhance habitats, not feeding feral animals, and removal techniques for common invasive species (e.g., French broom, Cape ivy, etc.).

P9-318 The information could be distributed by volunteer members to achieve a more personal relationship, thereby, stimulating the Stewardship Program.

O9-65 Manage environmentally sensitive habitats in Mission Trail Nature Preserve to maintain and enhance their natural integrity. Preserve and protect Mission Trail Nature Preserve native plant, wild animal and bird populations.

P9-319 Avoid future erosion and loss of native coastal terrace prairie vegetation in the Martin Road Parcel. Improve the foot trail to limit trampling of native vegetation. Install interpretive signage to educate the public on the ecology of the coastal terrace prairie and emphasize the importance of remaining on the trails.

P9-320 Limit vehicle use in the flat portion of the Martin Road Parcel where the claypan soil readily saturates to the surface and is susceptible to compaction and damage.

P9-321 Establish a 30-foot vegetation buffer along the perimeter of Mission Trail Nature Preserve. Encourage residents along the Preserve perimeter to remove vegetation to the minimum extent

necessary to reduce fire hazards. Maintain vegetation cover along the slopes to reduce erosion.

O9-66 Manage Pescadero Canyon ESHAs by controlling runoff, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of the creek channel.

P9-322 Rezone public-owned parcels in Pescadero Canyon to the Park Zone (P-1).

P9-323 Implement measures to preclude development in Pescadero Canyon. If these prove feasible, allow limited development, consistent with California Coastal Act Section 30240 (a) and (b), taking into consideration as far as possible underlying zoning, on privately owned parcels within the Pescadero Canyon ESHAs. If development is allowed it shall be setback fifty feet (50') or more (measured from the water line of the creek) based on site-specific biological conditions and soil conditions. Mitigate the impacts of development by controlling drainage, erosion, construction activity, landscaping and by requiring a long-term maintenance plan that monitors and protects environmental resources. (See also Policy P9-301)

P9-324 Cooperate in regional efforts to manage the entire Pescadero watershed for habitat value and fire safety.

P9-325 Develop a long-term plan to control surface drainage into the canyon from streets and adjacent parcels. Direct drainage into either the storm water system or to the canyon bottom with erosion-control devices to prevent damage to the riparian and wetland zones.

O9-67 Ensure that long-term management activities maintain the natural dune ecology of Carmel Beach in a manner consistent with public safety. Protect areas of the beach from the loss of habitat, where special status plant species are growing.

P9-326 Retain a qualified botanist to monitor the population of Tidestrom's lupine and other special status species on the North Dunes of Carmel Beach. The population should be assessed annually (or based upon a schedule agreed upon by the

Department of Fish and Game, Coastal Commission and U.S. Fish and Wildlife Service) to determine if the population is stable and if measures to protect the population should be instituted. If the population appears heavily affected by public use, the City should consider fencing or placing barriers around the lupine habitat on the beach.

P9-327 Prevent further planting and spread of invasive horticultural species within the dunes at Carmel Beach.

P9-328 Remove any non-native invasive vegetation from special status habitat to eliminate competition and implement a dune restoration plan.

P9-329 Implement a Dune Restoration Plan.

P9-330 Minimize spread of non-native plants.

P9-331 Conduct black legless lizard surveys and manage appropriately.

G9-23 Develop, preserve and enhance areas of scenic interest and determine methods to protect key scenic corridors and routes.

O9-68 Encourage increased use of open space areas for such uses as pedestrian paths and scenic viewpoints that would provide for public enjoyment of these areas.

P9-332 Enhance the natural resources at Forest Hill Park. Plant Monterey pine seedlings using local genetic stock, according to guidelines provided by the Genetic Resources Conservation Program of the University of California, Davis. Avoid further bank erosion and gullying at Forest Hill Park by implementing structural measures and soil bioengineering techniques to stabilize the drainage banks.

P9-333 Support the State and County designated Scenic Highways and related policies, wherever it appears in the best interest of Carmel to do so.

P9-334 Preserve the significant coastal view from the intersection of Torres Street and Third Avenue and across Vista Lobos, the City owned land near this intersection for public benefit and enjoyment.

Water Quality, Drainage and Marine Resources

O9-69 Recognize the natural resources and scenic quality of Carmel as a coastal community and allow uses in the community that are consistent with local needs and the California Coastal Act.

P9-335 Continue to ensure that development, whether commercial or residential, does not diminish the village character by excessively blocking important public views, private views or disturbing natural topography, significant trees, or native growth.

P9-336 Promote the placement of utilities underground where feasible and with minimum detriment to the root system of trees.

P9-337 Maintain, enhance, and where feasible, restore marine resources. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes (Section 30230, California Coastal Act).

P9-338 Maintain and restore, where feasible, the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health, through, among other means, minimizing adverse effects of waste water discharges and entrainment; controlling runoff; preventing depletion of ground water supplies and substantial interference with surface water flow; encouraging waste water reclamation; maintaining natural vegetation buffer areas that protect riparian habitats; and, minimizing alteration of natural streams (Section 30231, California Coastal Act).

O9-70 Protect and enhance the water quality and biological productivity of local creeks, wetlands, and Carmel Bay through the prevention of point- and non-point-source water pollution.

P9-339 Develop, Implement, Monitor, and Modify (as necessary) a City-wide Storm Water Management Plan (SWMP) outlining specific tasks, BMP's, and responsibilities necessary to implement the

City's National Pollution Discharge and Elimination System permit and to protect water quality. Minimum measures of the Storm Water Management Plan shall include:

1. Public education and outreach

2. Public participation and involvement

3. Illicit discharge detection and elimination

4. Pollution prevention and good housekeeping for municipal operations

5. Construction site storm water runoff control

6. Post-construction storm water management in new development and redevelopments.

Each measure shall identify source control and treatment Best Management Practices (BMP's) designed to control, prevent, reduce or remove typical runoff pollutants. Typical runoff pollutants describe constituents commonly present in runoff associated with precipitation and irrigation. Typical runoff pollutants include, but are not limited to: paints, varnishes, and solvents; hydrocarbons and metals; non-hazardous solid wastes and yard wastes; sediment from construction activities (including silts, clays, slurries, concrete rinsates, etc.); ongoing sedimentation due to changes in land cover/land use; nutrients, pesticides, herbicides, and fertilizers (e.g., from landscape maintenance); hazardous substances and wastes; sewage, fecal coliforms, animal wastes, and pathogens; dissolved and particulate metals; and other sediments and floatables. The City shall be responsible for evaluating the efficacy of its SWMP and updating it on a regular ongoing basis (i.e., at least once every 5 years or as directed by NPDES Phase II). The SWMP shall be submitted to the California Coastal Commission for its incorporation as an element of the LCP upon completion. Any modification to the SWUP shall be submitted in a timely manner as an LCP amendment.

P9-340 Coordinate with other agencies in the watershed area to develop public education programs on urban runoff issues and the appropriate roles of individuals, businesses, and government in the implementation of "Best Management Practices" for pollution prevention and control.

P9-341 Cooperate with regional and state agencies in the detection and elimination of illegal discharges of pollutants into Carmel Bay. Promote the proper disposal of pollutants to the sanitary sewer or hazardous waste facilities rather than the storm drainage system. Establish appropriate inspection criteria for new development and respond to complaints of illegal discharges.

P9-342 Adopt regulations for the prevention of illegal discharges to streams, wetlands, and the storm drainage system, and for the proper management of urban runoff.

O9-71 Establish watershed protection policies to guide all new development and redevelopment proposals during the planning, project review, and permitting processes.

P9-343 Avoid, where feasible, construction on areas particularly susceptible to erosion and sediment loss (e.g., steep slopes). Establish development guidance that identifies these areas and protects them from erosion and sediment loss. Prohibit grading in areas with slopes of 30 percent or greater from October through April except in response to emergencies.

P9-344 Retain creek channels in their natural state, and prevent undue erosion of creek banks. Development near watercourses will be regulated to reduce erosion and pollution and to preserve open natural areas.

P9-345 Preserve or restore areas that provide water quality benefits and/or are necessary to maintain riparian and aquatic biota.

P9-346 Promote site development that protects natural topography, drainage systems, and surface waters.

P9-347 Integrate storm water quality protection into construction and post-construction activities at all development sites. Evaluate the ability of each site to detain storm water runoff and require incorporation of detention facilities or other controls as

appropriate. As part of site approval or as a condition on a tentative map, require permanent storm water pollution control measures or systems and an ongoing maintenance program, as necessary.

O9-72 Reduce dependence on drainage structures and pipes for runoff.

P9-348 Provide development guidelines and permit conditions which: Limit impervious surfaces and the connection of multiple impervious surfaces; implement simple infiltration techniques throughout drainage areas to efficiently manage storm water; infiltrate runoff into the soil, retain runoff for slower release and convey runoff slowly through vegetation; employ treatment controls to capture and treat the polluted runoff before it enters the city's storm drain system or receiving waters; design structural BMPs in compliance with the NPDES Phase II permit.

P9-349 New roads, bridges, culverts, and outfalls shall not cause or contribute to streambank, hillside, or bluff erosion or creek or wetland siltation and shall include BMP's to minimize impacts to water quality including construction phase erosion control and polluted runoff control plans, and soil stabilization practices. Where space is available, dispersal of sheet flow from roads into vegetated areas or other on-site infiltration practices shall be incorporated into road and bridge design.

P9-350 New development shall protect the absorption, purification, and retention functions of natural systems that exist on the site. Where feasible, drainage plans shall be designed to complement and utilize existing drainage patterns and systems, conveying drainage from the developed area of the site in a non-erosive manner. Disturbed or degraded natural drainage systems should be restored, where feasible.

P9-351 Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method of protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing structures in the floodplain or (3) developments where the primary function is the improvement of fish and wildlife habitat.

O9-73 Use alternative building designs, which improve filtration of water through landscaping and natural areas. Ensure that all development includes appropriate water quality Best Management Practices (BMPs).

P9-352 All development shall incorporate structural and non-structural Best Management Practices (BMPs). BMPs are methods for controlling, preventing, reducing, or removing typical runoff pollutants. BMPs generally fall into two categories: source control BMPs and treatment BMPs. Source control BMPs are designed to reduce or eliminate the introduction of pollutants into runoff (e.g., regular sweeping/vacuuming of vehicle parking areas). Treatment BMPs are designed to remove pollutants from runoff (e.g., silt fences to trap sediments at construction sites). In order of priority, all development shall: first, limit impervious surfacing and pollutant loading through good site planning; second, reduce pollutant loads through source control; and third, reduce pollutant loads through treatment controls (where appropriate).

P9-353 Set criteria and establish appropriate design guidelines for structural and nonstructural BMPs; adopt a manual of BMPs to guide project design and engineering. BMPs shall mitigate both construction and long-term water quality impacts. Specify type, location, size, implementation and maintenance schedules as part of the City's SWMP; Maintain BMPs that prevent storm water pollution and address trash disposal, outside storage of materials, vehicle-washing etc.

P9-354 Implement municipal maintenance programs which ensure: public projects that don't require a permit shall also be subject to water quality measures, integrate appropriate BMPs in redevelopment projects including storm drain upgrades; use integrated pest management and plan health care strategies as and alternative to applying chemical pesticides and herbicides; provide bags and trashcans to encourage pet waste pick-up in parks, the beach and residential areas.

P9-355 All structural BMP's shall be inspected, cleaned, and repaired as necessary to ensure proper functioning of the BMP's.

P9-356 Post-construction structural BMP's should be designed to treat, infiltrate, or filter the amount of stormwater runoff produced by all storms per the requirements of the City's NPDES permit.

P9-357 New development shall minimize the development footprint and directly connected impervious surfaces, as well as the creation of and increases in impervious surfaces.

P9-358 New development shall be sited and designed on the most suitable portion of the site while ensuring protection and preservation of natural and sensitive site resources by providing for the following:

- Protecting areas that provide important water quality benefits, areas necessary to maintain riparian and aquatic biota and/or that are susceptible to erosion and sediment loss;
- Analyzing the natural resources and hazardous constraints of planning areas and individual development site to determine locations most suitable for development;
- Promoting clustering of development on the most suitable portions of a site taking into account geologic constraints, sensitive resources, and natural drainage features;
- Preserving and protecting riparian corridors, wetlands, and buffer zones;
- Minimizing disturbance of natural areas, including significant trees, native vegetation, and root structures;
- Using natural drainage as a design element, maximizing the preservation of natural contours and native vegetation;
- Limiting land disturbance activities such as clearing and grading, limiting cut and fill to reduce erosion and sediment loss, and avoiding steep slopes, unstable areas, and erosive soils.

P9-359 The City shall develop a water quality checklist to be used in the permit review process to assess potential water quality impacts.

P9-360 Commercial development shall incorporate BMP's designed to minimize or avoid the runoff of pollutants from structures, landscaping, parking, and loading areas.

P9-361 Restaurants shall incorporate BMP's designed to minimize runoff of oil and grease, solvents, phosphates, suspended solids, and other pollutants to the storm drain system.

P9-362 Gasoline stations, car washes, and automotive repair facilities shall incorporate BMP's designed to minimize runoff of oil and grease, solvents, car battery acid, coolant, gasoline, and other pollutants to the storm water system.

P9-363 Storm drain stenciling and signage shall be provided for new storm drain construction in order to discourage dumping into drains.

P9-364 Permits for new development shall be conditioned to require ongoing maintenance where maintenance is necessary for effective operation of required BMP's.

P9-365 The City, property owners, or homeowners associations, as applicable, shall be required to maintain any permitted drainage device to ensure it functions as designed and intended. Owners of these devices shall be responsible for ensuring that they continue to runction properly and additional inspections should occur after storms as needed throughout the rainy season. Repairs, modifications, or installation of additional BMP's, as needed, should be carried out prior to the next rainy season.

P9-366 The City, property owners, or homeowners associations, as applicable, shall sweep permitted public and private streets frequently to remove debris and contaminant residue.

P9-367 New development shall include construction phase erosion control and polluted runoff control plans. For example, such plans may include controls on timing of grading, BMP's for storage and disposal of construction materials, or design specifications of sedimentation basins.

P9-368 New development that requires a grading/erosion control plan shall include landscaping and re-vegetation of graded or disturbed areas.

P9-369 The use of efficient irrigation practices and native or drought-tolerant non-invasive plants to minimize the need for fertilizer, pesticides, herbicides, and excessive irrigation will be recommended.

Appendix A: California Coastal Act Policies

PUBLIC ACCESS

Section 30210

...Maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

(Amended by Ch. 1075, Stats. 1978.)

Section 30211

Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30212

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:

(1) It is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,

(2) Adequate access exists nearby, or,

(3) Agriculture would be adversely affected. Dedicated accessway shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.

(b) For purposes of this section, "new development" does not include:

(1) Replacement of any structure pursuant to the provisions of subdivision (g) of Section 30610.

(2) The demolition and reconstruction of a single-family residence; provided, that the reconstructed residence shall not exceed either the floor area, height or bulk of the former structure by more than 10 percent, and that the reconstructed residence shall be sited in the same location on the affected property as the former structure.

(3) Improvements to any structure which do not change the intensity of its use, which do not increase either the floor area, height, or bulk of the structure by more than 10 percent, which do not block or impede public access, and which do not result in a seaward encroachment by the structure.

(4) The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not a seaward of the location of the former structure.

(5) Any repair or maintenance activity for which the commission has determined, pursuant to Section 30610, that a coastal development permit will be required unless the commission determines that the activity will have an adverse impact on lateral public access along the beach.

As used in this subdivision "bulk" means total interior cubic volume as measured from the exterior surface of the structure.

(c) Nothing in this division shall restrict public access nor shall it excuse the performance of its duties and responsibilities of public agencies which are required by Sections 66478.1 to 66478.14, inclusive, of the Government Code and by Section 4 of Article X of the California Constitution.

(Amended by Ch. 1075, Stats. 1978.)
(Amended by Ch. 919, Stats. 1979.)
(Amended by Ch. 744, Stats. 1983.)

Section 30212.5

Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.

Section 30213

Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.

The commission shall not: (1) require that overnight room rentals be fixed at an amount certain for any privately owned and operated hotel, motel, or other similar visitor-serving facility located on either public or private lands; or (2) establish or approve any

method for the identification of low or moderate income persons for the purpose of determining eligibility for overnight room rentals in any such facilities.

(Amended by Ch. 1191, Stats. 1979.)
(Amended by Ch. 1087, Stats. 1980.)
(Amended by Ch. 1007, Stats. 1981.)
(Amended by Ch. 285, Stats. 1991.)

Section 30214

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

(1) Topographic and geologic site characteristics.

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.

(4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.

(b) It is the intent of the Legislature that the public access policies of this article be carried out in a reasonable manner that considers the equities and that balances the rights of the individual property owner with the public's constitutional right of access pursuant to Section 4 of Article X of the California Constitution.

Nothing in this section or any amendment thereto shall be construed as a limitation on the rights guaranteed to the public under Section 4 of Article X of the California Constitution.

c) In carrying out the public access policies of this article, the commission and any other responsible public agency shall consider and encourage the utilization of innovative access management techniques, including, but not limited to, agreements with private organizations which would minimize management costs and encourage the use of volunteer programs.

(Amended by Ch. 919, Stats. 1979.)
(Amended by Ch. 285, Stats. 1991.)

RECREATION

Section 30220

Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

Section 30221

Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

(Amended by Ch. 380, Stats. 1978.)

Section 30222

The use of private lands suitable for visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation shall have priority over private residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industry.

Section 30222.5

Ocean front land that is suitable for coastal dependent aquaculture shall be protected for that use, and proposals for aquaculture facilities located on those sites shall be given priority, except over other coastal dependent developments or uses.

(Added by Ch. 1486, Stats. 1982.)

Section 30223

Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.

Section 30224

Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.

MARINE ENVIRONMENT

Section 30230

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30232

Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

Section 30233

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where

feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.

(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

(3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.

(4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.

(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(7) Restoration purposes.

(8) Nature study, aquaculture, or similar resource dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of

Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.

For the purposes of this section, "commercial fishing facilities in Bodega Bay" means that not less than 80 percent of all boating facilities proposed to be developed or improved, where such improvement would create additional berths in Bodega Bay, shall be designed and used for commercial fishing activities.

(d) Erosion control and flood control facilities constructed on water courses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.

(Amended by Ch. 673, Stats. 1978.)
(Amended by Ch. 43, Stats. 1982.)
(Amended by Ch. 1167, Stats. 1982.)
(Amended by Ch. 454, Stats. 1983.)

Section 30234

Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided.

Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.

Section 30234.5

The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.

(Added by Ch. 802, Stats. 1991.)

Section 30235

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

Section 30236

Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (l) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

LAND RESOURCES

Section 30240

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

(Amended by Ch. 285, Stats. 1991.)

Section 30243

The long-term productivity of soils and timberlands shall be protected, and conversions of coastal commercial timberlands in units of commercial size to other uses or their division into units of noncommercial size shall be limited to providing for necessary timber processing and related facilities.

Section 30244

Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

DEVELOPMENT

Section 30250

(a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

(b) Where feasible, new hazardous industrial development shall be located away from existing developed areas.

(c) Visitor-serving facilities that cannot feasibly be located in existing developed areas shall be located in existing isolated developments or at selected points of attraction for visitors.

(Amended by Ch. 1090, Stats. 1979.)

Section 30251

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

Section 30252

The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service, (2) providing commercial facilities within or adjoining residential development or in other areas that will minimize the use of coastal access roads, (3) providing non-automobile circulation within the development, (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents will not overload nearby coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development.

Section 30253

New development shall:

(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) 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.

(3) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.

(4) Minimize energy consumption and vehicle miles traveled.

(5) Where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational uses.

Section 30254

New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway Route 1 in rural areas of the coastal zone remain a scenic two-lane road. Special districts shall not be formed or expanded except where assessment for, and provision of, the service would not induce new development inconsistent with this division.

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.

Section 30254.5

Notwithstanding any other provision of law, the commission may not impose any term or condition on the development of any sewage treatment plant which is applicable to any future development that the commission finds can be accommodated by that plant consistent with this division. Nothing in this section modifies the provisions and requirements of Sections 30254 and 30412.

(Added by Ch. 978, Stats. 1984.)

Section 30255

Coastal-dependent developments shall have priority over other developments on or near the shoreline.

Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland.

When appropriate, coastal-related developments should be accommodated within reasonable proximity to the coastal-dependent uses they support.

(Amended by Ch. 1090, Stats. 1979.)

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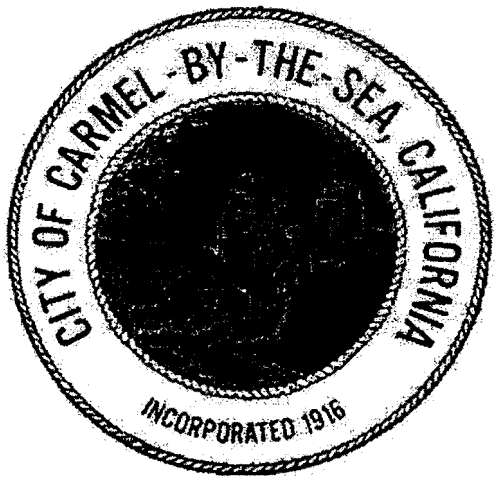
Appendix B: Forest Management Plan

CITY OF CARMEL-BY-THE-SEA FOREST MANAGEMENT PLAN

By
Michael J. Branson
City Forester



December 2000
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March 2001
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I. INTRODUCTION – A FOREST TO BE MANAGED

Since the early 1900's the care of Carmel's forest and natural environment has resulted in the adoption of Ordinances, Resolutions, and Policies relating to trees. Taken together, these documents have successfully guided the City's tree program over the years. However, since the measures were adopted at different times to address separate concerns, they lack a sense of overall cohesion.

In order to meld these documents together the first Forest Management Plan for the City of Carmel-by-the-Sea was adopted in 1971. It has served the forest well. Many of its sections remain valid and should be used to provide a historical perspective of changes in the forest as well as its management. Future Commissioners and managers would be wise not to lose sight of the lessons of the past.

The urbanized forest is Carmel-by-the Sea's largest, most visible, and most important natural resource. Both environmentally and aesthetically, the forest makes the City a better place to live and visit. Each tree makes an individual contribution, but in concert with each other the trees become a forest - and a powerful influence on the community.

Carmel's forest is an "urbanized" forest rather than an "urban" forest. "Urban" forests are planted after the urban development and typically consist of single species, regularly spaced trees planted in a row between the sidewalk and the street. An "urbanized" forest existed before the development and is characterized by its diversity in species, age and randomness in tree location resulting in meandering streets of varying width.

To fully understand the importance of public and private trees to Carmel-by-the Sea, it might be helpful to imagine a completely treeless city. Houses would repetitiously line up along straight shadowless streets. The sterile habitat would attract few birds, and without trees, we would have no living clocks to mark the passage of time and no living monuments to the past.

Although some of the streets of Carmel-by-the-Sea, notably Ocean Avenue, were planted with trees, most of the village was tree covered long before there was a Carmel. Robert Louis Stevenson walked through these forests. David Starr Jorden in 1885, or thereabouts, reported forests extending to the white beach of Carmel. There are numerous records by early travelers passing through Carmel-by-the-Sea, which mention a "village in a forest above a white ocean beach" and "a town whose citizens love trees".

A Forest Master Plan seeks to strengthen the connection between trees and residents of the city. The Plan recognizes that an urbanized forest is a combination of trees and people living together for the benefit of both. The Plan provides management guidance by presenting the City's goals and objectives relating to trees and the policies by which they can be implemented. Since the decisions of individuals ultimately determine the quality of the forest, the Plan also seeks to involve individual residents as fully as possible in the preservation and care of the forest.

The new Forest Master Plan begins the millenium with an idealistic tone. However, it must also be a practical document that espouses goals and policies that can be fulfilled. Our vision for the forest should be creative while our feet remain on the pine needles.

II. THE BENEFIT OF TREES

In economic terms, the American Forestry Association (AFA) estimates the amenity value of an urban tree to be twenty-five times greater than the value of a tree grown strictly for lumber. According to the AFA, such a tree is appraised more like real estate than a commodity. Its value derives from the multitude of benefits it bestows on individual residents, the community and the urban forest as a whole.

- Upper canopy trees impart a distinctive ambiance and identity to the City. Carmel-by-the-Sea is known worldwide for its environmental amenities. Living in a pine forest with a mix of upper and lower canopy trees establishes a powerful sense of place.

- Trees establish visual harmony and continuity along City streets. The pleasure of walking, a large part of the Carmel experience is enhanced by the sheltering canopy of trees over meandering streets.

- Trees soften and screen urban development. Combined with good planning and design, trees improve the visual environment, helping to blend diverse structures with a green unity that adds a natural dimension to the City's development over time.

- Trees help diffuse noise. Dense foliage helps break up the sound from traffic and other noises, to make them less intrusive.

- Trees help increase and stabilize property values. Trees increase residential property values from 7 to 20 percent. Surveys in California identify mature trees as the most desired amenity in home sales. The City gains from enhanced property values in the form of increased property and transfer tax revenues.

- Trees enhance people's sense of connection to nature and history. Since trees, like people, grow and change through time, we identify with them and since they often live longer than we do, they link us to times beyond our own, spanning past and future generations.

- Upper canopy trees protect the environment of native understory trees and vegetation. Locally, coastal fog condenses on the foliage of upper canopy trees and then drips to the ground bringing much needed moisture to the understory trees and vegetation.

- Trees absorb carbon dioxide, counteracting the global greenhouse effect. Photosynthesis "fixes" carbon in a tree where it stays as long as the tree lives. An average tree captures nearly half a ton of carbon dioxide over the first thirty years of its life.

- Trees moderate wind. A grove (screen) of trees will cut a 20-mph wind to 5-mph.
- Trees produce oxygen and help reduce pollution. A tree's production of oxygen replenishes the atmosphere and dilutes pollutants.
- Trees help reduce soil erosion and surface runoff. Trees protect soil by breaking the fall of raindrops, absorbing water through their roots, covering the ground with protective humus, slowing runoff, and holding soil with their roots.
- Trees provide habitat for birds and other wildlife. A mature tree can provide a home for 300 species of insects, which in turn provide food for many species of birds.

Note: The identification number for goals, objectives, and policies in the Forest Management Plan is correlated to the numbering order in the adopted Local Coastal Program of Carmel-by-the-Sea and thus may not appear in sequential order in this Plan.

IV. GOALS, OBJECTIVES, POLICIES

G9-13 **Preserve and enhance the City's legacy of an urbanized forest of predominantly Monterey pine, coast live oak and Monterey cypress.**

O9-35 Maintain a Forest and Beach Commission and a Forest, Parks and Beach Department that have specific responsibility and jurisdiction for the health and well-being of the forest, parks and beach.

P9-202 Review periodically all existing tree-related ordinances and policies in the Forest Management Plan/LCP. Propose changes to bring them into alignment with new advances in urbanized forest management practice.

P9-203 Conduct the forest program in accordance with a coherent body of laws, goals, policies and guidelines.

P9-204 Coordinate all functions of the urban forest program through the City Forester.

P9-205 Commit resources necessary to support the forest, parks and beach programs.

O9-36 Maintain a Citywide map and database of trees and landscaped areas to support tree planting and maintenance programs.

P9-206 Complete a Citywide survey and database update every 4 years. Compile the data by size of tree and species in an electronic format. Also survey replacement trees required by permit conditions of approval. Report survey information and the status of replacement trees to the Forest and Beach Commission and Planning Commission at the conclusion of each yearly survey. Continue to monitor replacement trees for at least one survey cycle (i.e., 4 years). (Appendix D)

O9-37 Maintain, restore and enhance the upper and lower tree canopy of Carmel's

urbanized forest.

P9-208 Implement adopted tree density policies for private and public property as appropriate to each site taking into consideration neighborhood characteristics and site constraints. (Appendix A, F)

P9-209 Establish and implement tree canopy policies for the commercial district. (Appendix A, I)

P9-210 Maintain a list of tree species which qualify as indigenous upper and lower canopy trees for purposes of meeting tree density, and replacement policies. (Appendix G)

P9-211 Maintain, restore and enhance a predominantly indigenous forest of native Monterey pines and coast live oaks.

P9-213 Review all projects involving an increase in lot coverage or tree removal to apply the adopted tree density policy as appropriate for each neighborhood and site conditions. Preserve upper and lower canopy trees classified as significant when planning and implementing residential and commercial development. (Appendix A, F)

P9-215 Use tree species and sizes well adapted for each planting site.

P9-216 Manage the tree-planting program to achieve an uneven-aged healthy forest with particular emphasis on native Monterey pines and coast live oaks.

O9-38 Implement policies, standards and procedures to regulate removal, pruning, and replacement of trees on private property.

P9-218 Permit the City Forester to act on requests for the removal and pruning of all trees growing on public and private property.

P9-220 Permit the City Forester to apply special procedures for tree removal and pruning during emergencies. (Appendix F)

P9-221 Record and monitor replacement trees to ensure their establishment and growth to maturity. (Appendix A)

P9-222 Require ample and appropriate landscaping and tree plantings on all sites. Determine what is appropriate for each site by consulting the recommended tree density as appropriate for each neighborhood. Special emphasis must be paid to construction sites. Required

replacement trees shall be of substantial size, caliper and height to produce an immediate visual impact and to reduce the incidence of unauthorized removal. (Appendix A, F)

P9-223 Require a documented site assessment, or meeting between a planner, City Forester, and the property owner/developer on each proposed construction site to discuss tree preservation and planting. Establish tree protection zones and suitable locations for development through this process. This shall be done before plans have been drawn.

P9-224 Evaluate, protect and preserve all trees (and their root zones) on sites prior to, during and after construction. Ensure that all building sites abide by appropriate tree protection and preservation standards. (Appendix A)

O9-39 Perform all tree work and landscaping within the City in accordance with City codes and policies and uniform planting practices that reflect the best current knowledge of tree and plant care.

P9-225 Maintain close cooperation among all public agencies, tree services, arborists, landscape architects, gardeners, and utility companies affecting the urban forest.

P9-227 Provide a comprehensive training program for City staff and encourage employees to become Certified Arborists or Certified Tree Workers under the standards of the International Society of Arboriculture (ISA).

P9-228 Negotiate with the Public Utilities Commission and utility companies to adopt minimal line clearance standards to give special attention to Carmel's forest.

P9-19 Promote the undergrounding of utilities where feasible and with minimum detriment to the root systems of trees. (Appendix F)

O9-40 Maintain a healthy forest.

P9-229 Work in concert with the other area foresters and arborists, the Monterey Pine Forest Ecology Cooperative, the Pitch Canker Task Force, Oak Mortality Task Force, and university researchers to address acute concerns to the health of the forest.

P9-230 Monitor tree pest and disease problems and take appropriate measures to minimize their impact.

P9-231 Foster healthy and disease resistant trees and avoid widespread application of pesticides.

P9-232 Investigate ways to discourage large trucks from using streets with low tree limbs.

P9-233 Plant native Monterey pine seedlings of different genotypes to maximize resistance to diseases and make these seedlings available to the public. (Appendix L)

P9-235 Properly dispose of diseased trees and recycle tree waste. (Appendix F, J)

P9-226 Require that all City departments, utility companies, tree service companies, arborists, landscapers, and gardeners adhere to the adopted Tree Maintenance Standards, policies and guidelines. (Appendix A, B, C, J)

O9-41 Educate and involve the public in tree issues.

P9-231 Undertake an active program of community outreach and education. (Appendix A)

P9-240 Publish timely tree care articles in local news media. (Appendix A, K)

P9-241 Encourage monetary and other contributions in support of the urban forest program. (Appendix A)

P9-242 Provide the City Council and Planning Commission with information on an annual basis from the ongoing tree survey regarding projected changes in the composition of the forest and recommendations for policy amendments. (Appendix A)

P9-243 Involve citizen groups in forestry programs so that forest related subjects are seen as community issues that require broad based involvement and support.

G9-14 Maintain and Enhance the Informality of Streetscapes

O9-42 Remove or reduce unnecessary or excessive hardscape and other nonconforming encroachments on City parklands and within street rights of way to provide for and promote planting of trees and native vegetation.

P9-244 Require at the issuance of a building permit, the abatement or retroactive approval of any nonconforming encroachments in the public right of way. (Appendix A)

P9-245 Look for opportunities to reduce or eliminate hardscape areas Citywide on public and private lands. Identify hardscape in the public right-of-way and on-site that does not meet current policies or codes during preliminary site assessments and/or other design review for all projects in the R-1 District. Require that project landscape plans include the public rights-of-way.

O9-43 Use mini-parks and islands for planting trees, with an emphasis on native Monterey pine, oaks, and other native vegetation.

P9-247 Identify opportunities for new trees, removal of invasive plants and landscaping to enhance streetscapes during planning for street reconstruction projects. (Appendix F)

P9-248 Recognize the City's narrow street paving, roadside vegetation and overarching canopy as important elements contributing the streetscape, to pedestrian circulation, traffic calming, community aesthetics and environmental enhancement. Identify character-defining features of roadways and retain and enhance these features when planning and implementing street improvement, repairs and reconstruction. (Appendix F)

O9-44 Incorporate adequate landscaping and trees of the urbanized forest in all public construction projects.

P9-249 The City staff member responsible for any public project shall involve the Forest, Parks and Beach Department through the planning and implementation stages of the project.

P9-250 Include funding for the design and installation of landscaping as part of each public project.

G9-15 Preserve and Acquire Open Space and Parks

O9-46 Maximize the amount of open space in the City and sphere of influence by establishing development fees and/or other methods to fund open space acquisition.

P9-251 Resist the transfer of open space to other uses.

P9-252 Encourage rezoning to open space.

P9-253 Actively pursue the preservation of existing open space within the City's sphere of influence.

P9-219 Report sites that are non-conforming with standards for permeable surface lot coverage when applications for tree removal or pruning permits are filed.

O9-46 Restore and maintain open space to its natural state.

P9-254 Establish and implement a procedure for removal of invasive vegetation.

P9-256 Identify and protect environmentally sensitive habitat areas against any significant disruption of habitat values. Only uses dependant upon those resources shall be allowed. For private lots of record within ESHA, establish a transfer of development rights program using credits of water, floor area, density or some other development parameter to relocate development to less sensitive areas.

P9-260 Provide for public access and passive enjoyment of City parks and open space.

P9-261 Provide and maintain informal trails if there is public demand.

O9-48 Optimize public use of City parks.

P9-258 Implement the recommendations of all existing Master Plans considering prioritized needs and available funding:

a. Mission Trail Nature Preserve Master Plan
b. Shoreline Management Plan
c. Forest Hill Park Master Plan

P9-259 Develop and implement specific plans, master plans or other programs in other areas where needed.

G9-17 Conserve water and minimize storm runoff

O9-49 Maximize retention of surface water on each site through site design and use of best management practices.

P9-262 Where feasible, direct street runoff to open-space areas on public or private property for percolation into the soil.

P9-263 New construction plans should include design features to enhance surface water percolation. Where practical, runoff from roof, driveway and other impervious surfaces shall be collected and directed into pervious areas on the site (landscaped areas) for infiltration in a non-erosive manner, prior to being conveyed off-site.

P9-264 Encourage homeowners to absorb surface water on their own property. Implement development standards that minimize runoff and the amount of area paved with impervious surfaces. Encourage homeowners and commercial property owners to install cisterns for landscaping to decrease water use and to reduce runoff.

O9-49 Landscape with drought tolerant plants, shrubs and trees of the urbanized forest.

P9-266 Provide to the public an established list of indigenous and non-indigenous drought tolerant plants. (Appendix H)

P9-267 Require approval of landscape plans for drought tolerance and trees by the Forest and Beach Department on new construction at Final Design Review or before issuing a building permit. Include specifications for location, species, size and planting guidelines for all required replacement trees in this review. (Appendix A)

O9-50 Minimize the use of potable water for landscape irrigation.

P9-268 Use low output sprinkler heads and/or drip irrigation for landscape irrigation systems. (Appendix A)

P9-269 Use on-site water retention devices to capture precipitation or surface runoff for landscape maintenance purposes.

City of Carmel-by-the-Sea Municipal Code

Chapter 12.28

TREES AND SHRUBS*

Sections:

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12.28.350 Safeguarding Trees That are Required to be Planted as a Condition of Tree-Removal Permit Approval.

* For statutory provisions on the planting of trees along public streets, see Streets and Highways Code § 22000 et seq; for provisions authorizing cities to declare and abate nuisances, see Government Code § 38771 et seq.

12.28.010 Purpose and Intention.

The City Council finds that it is necessary to maintain the existing urban forest in order to preserve windbreak protection, abate soil erosion, and enhance the natural beauty of the City, and adopts this chapter in the interest of public health and safety. (Ord. 79-5 § 1, 1979; Ord. 214 C.S. § 1, 1970; Code 1975 § 1230).

12.28.020 Policy Statement.

It is not the policy of the City to approve requests for tree trimming or tree removal in order to improve the view of any person, including the applicant. It is the policy of the City, where tree removal is accomplished at the request of a property owner or occupant, to require the planting of another tree in a suitable location, whenever good forestry practice so dictates. (Ord. 79-5 § 1, 1979; Ord. 214 C.S. § 1, 1970; Code 1975 § 1230.01).

12.28.030 Definitions.

For the purpose of this chapter, the following definitions shall apply:

A. "Shrub" means a bushy, woody plant, usually with several permanent stems, and usually not over 10 to 15 feet high at maturity.

B. "Tree" means a woody perennial plant, usually with one main stem or trunk, and many-branched. It may appear to have several stems or trunks, as in certain varieties of oak. It is usually over 10 feet high at maturity. (Ord. 79-5 § 1, 1979; Ord. 214 C.S. § 1, 1970; Code 1975 § 1230.1).

12.28.040 Determination of Definition.

In any case, the Director of Forest, Parks and Beach shall have the right to determine whether any specific woody plant shall be considered a tree or a shrub. Such determination shall be final and not subject to appeal. (Ord. 79-5 § 1, 1979; Ord. 214 C.S. § 1, 1970; Code 1975 § 1230.2).

12.28.050 Solar Shade Control Act.

The City is exempt from the provisions of Chapter 12 (commencing with Public Resources Code Section 25980), Division 15 of the Public Resources Code which chapter is known as the "Solar Shade Control Act." (Ord. 79-5 § 1, 1979; Code 1975 § 1230.3).

12.28.060 Permit for Cutting Trees and Shrubs on Public Property.

A. Any person desiring to remove or prune any portion of a tree or shrub, except genista, growing in or upon any public street, way, park, or place within the City, or any person desiring to cut any wood, foliage, or roots from any tree on private property when more than one-half of the basal cross-sectional area of such tree is on City property, shall apply therefor to the Director of Forest, Parks and Beach on forms provided by her/him. There shall be a fee for this permit process as established from time to time by resolution of the City Council. If, in the opinion of the Director of Forest, Parks and Beach, the tree or trees should be removed because of disease, infestation, or clear and present danger to persons or property, she/he shall cause the tree or trees to be removed. In all other cases, the Director of Forest, Parks and Beach shall:

1. Place the application on an agenda of the Forest and Beach Commission, which shall act as provided for in Chapter 2.32 CMC; and
2. Notify the applicant of the time and date of the meeting at which the application shall be considered; and
3. Give notice of the action of the Forest and Beach Commission to the applicant.

B. Any permit granted under this chapter is nontransferable and shall expire one year from date of issuance. The Director of Forest, Parks and Beach or Forest and Beach Commission may condition a permit on replacement trees being planted at a place, of a species and of a size designated by the Director of Forest, Parks and Beach or Forest and Beach Commission. The person requesting the permit may also be required to pay the cost of obtaining and planting the replacement trees.

C. In exceptional circumstances in which it would cause substantial loss or inconvenience to delay removal until the Forest and Beach Commission's next meeting, the Director of Forest, Parks and Beach may approve removal providing such approval unquestionably conforms to the policy and the practice of the Forest and Beach Commission. The Director of Forest, Parks and Beach will report her/his action at the next meeting of the Forest and Beach Commission. (Ord. 95-3 § 1, 1995; Ord. 81-4 § 1, 1981; Ord. 75-10 § 1, 1975; Ord. 257 C.S. § 1, 1972; Ord. 214 C.S. § 1, 1970; Code 1975 § 1231).

12.28.070 Filing of Appeals.

Any appeal from a decision of the Forest and Beach Commission shall be taken by filing a notice of appeal in writing in the office of the City Clerk prior to the close of the fifth day of business following the day of action by the commission. A fee, in an amount as established from time to time by resolution of the City Council, shall be charged for filing the appeal. Any notice of appeal shall set forth the specific ground or grounds upon which the appeal is taken. The signature of at least one signer of the appeal shall be verified before a person authorized under the laws of the State of California to administer oaths. (Ord. 95-3 § 1, 1995; Ord. 214 C.S. § 1, 1970; Code 1975 § 1231.01).

12.28.080 Duties of City Clerk.
Upon the filing of such appeal, the City Clerk shall place the appeal upon the agenda of the next regular meeting of the City Council, unless the Mayor authorizes placing the matter on the agenda of an earlier meeting. (Ord. 214 C.S. § 1, 1970; Code 1975 § 1231.02).

12.28.090 Determination by City Council.
At the time set for hearing the appeal, the City Council shall proceed to hear and determine the same. The hearing may be continued, at the discretion of the Council, in order to obtain further facts or hear further witnesses. After initial hearing, the City Council may set a public hearing prior to making a determination. Any determination of the City Council shall be final and conclusive and not subject to further appeal. (Ord. 214 C.S. § 1, 1970; Code 1975 § 1231.03).

12.28.100 Permit for Removal – Improvement of Private Property.
In the event a permit for tree removal is granted, in order to enable the applicant to carry out some project of development or improvement of her/his property, such permit shall be effective only in connection with the actual accomplishment of the project. (Ord. 214 C.S. § 1, 1970; Code 1975 § 1231.1).

12.28.115 Standards for the Pruning of Trees on Private Property.
A. The City Council may adopt by resolution standards for the pruning of trees on private property, with which all licensed tree companies doing business in the City of Carmel-by-the-Sea shall comply.
B. Failure to comply to these standards as determined by the City Council may result in the suspension of the tree company's business license as follows: First offense, suspension of the business license for a period not exceeding 90 days, and for a second offense or any subsequent offenses, by suspension of the business license for a period not exceeding one year. (Ord. 93-30 § 1, 1993).

12.28.130 Exclusions.
The provisions of this chapter shall not apply to the cutting or trimming of trees or shrubs:
A. When necessary for the construction of streets or buildings on public property;
B. When determined by the Chief of Police to be necessary for traffic safety;
C. When ordered by the City Council. (Ord. 214 C.S. § 1, 1970; Code 1975 § 1231.4).

12.28.140 Responsibilities of the Director of Forest, Parks and Beach.

The Director of Forest, Parks and Beach shall:

A. Supervise all tree-cutting or trimming for which a permit has been granted.

B. Cause to be removed all dead trees or shrubs from public property except in circumstances where all of the following conditions apply:

1. The dead tree is a Monterey cypress located on or adjacent to the beach;

2. The dead tree does not present a clear and present danger to persons or property or can be supported by reasonable means, thus mitigating its clear and present danger; and

3. The Forest and Beach Commission has determined that the dead tree is of substantial aesthetic value to warrant its preservation.

C. Cause to be removed or trimmed any trees or shrubs for which such removal or trimming is ordered by the Forest and Beach Commission or the City Council or is required in connection with any public works project ordered by the City Council. (Ord. 94-7 § 1, 1994; Ord. 214 C.S. § 1, 1970; Code 1975 § 1231.5).

12.28.150 Trimming Trees Partially on Private Property.

When more than one-half of the basal cross-sectional area of a tree is on private property and the remainder on City property, the City shall not cut or trim wood, foliage, or roots except when:

A. In the opinion of the Director of Forest, Parks and Beach such cutting would not threaten the survival of the tree nor endanger public health and safety, nor endanger the health and safety of the property owner; and

B. Permission has been granted by the property owner concerned. (Ord. 81-4 § 4, 1981; Ord. 214 C.S. § 1, 1970; Code 1975 § 1231.6).

12.28.170 Cutting Trees on Private Property, Vacant Lots, and for Construction.

Without a permit therefor, it shall be unlawful to cut down, or otherwise destroy, or authorize the cutting down or destruction of any living tree of an average diameter of greater than two inches, or a circumference greater than six and one-fourth inches, measured at a point four and one-half feet above the ground level, or remove or authorize the removal of roots greater than two inches in diameter or limbs greater than four inches in diameter which are growing on private property under the following conditions:

A. When the tree is situated on a vacant lot;

B. When the tree is situated on any lot on which any existing building is to be remodeled to increase ground coverage, or to rebuild a demolished structure. If remodeling or rebuilding is undertaken within six months from the cutting down of a tree, while the property remains in the same ownership, it shall be presumed that the tree was removed for remodeling or rebuilding. (Ord. 89-18 § 2, 1989; Ord. 88-13 § 1, 1988; Ord. 246 C.S. § 1, 1971; Ord. 236 C.S. § 1, 1971; Code 1975 § 1232).

12.28.172 Cutting Trees on Private Property.

A. Except upon issuance of a permit as provided for in this chapter, it is unlawful to cut down, remove or otherwise destroy, or to authorize the cutting down, removal or destruction, of any pine, redwood, oak or cypress tree located on private property having:

1. A diameter equal to or greater than six inches; or
2. A circumference greater than 19 inches.

B. Except upon issuance of a permit as provided for in this chapter, it is unlawful to cut down, remove or otherwise destroy, or to authorize the cutting down, removal or destruction, of any species of tree capable of growing to a minimum of 25 feet in height growing on private property and having:

1. A diameter equal to or greater than 10 inches; or
2. A circumference greater than 32 inches.

C. The determination of the diameter or circumference of a tree shall be made by the Director of Forest, Parks and Beach through a measurement taken at a point four and one-half feet above the natural grade at the base of such tree. (Ord. 92-4, 1992; Ord. 89-18 § 3, 1989).

12.28.180 Permit for Removing Trees, Pruning or Removing Roots on Private Property – Application.

Applications for permission to cut or remove a tree or trees under this chapter shall be submitted to the Director of Forest, Parks and Beach on forms provided by her/him. There shall be a fee for this permit as established by resolution of the City Council. The Forest and Beach Commission may approve or deny the application and require as a condition on which a permit is granted that replacement trees be planted at a place, of a species and of a size designated by the commission on public or private property. The person requesting the permit may also be required to pay the cost of obtaining and planting the replacement trees. (Ord. 95-3 § 1, 1995; Ord. 88-13 § 2, 1988; Ord. 81-4 § 5, 1981; Ord. 75-10 § 3, 1975; Ord. 236 C.S. § 1, 1971; Code 1975 § 1232.01).

12.28.185 Violation – Penalty for CMC 12.28.170, 12.28.172, 12.28.180 and 12.28.210.

A. It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of CMC 12.28.170, 12.28.172, 12.28.180 or 12.28.210. A violation of any of the provisions or failure to comply with any of the mandatory requirements of such sections shall constitute an infraction. Any person convicted of an infraction under the provisions of such sections shall be punishable by fine only as follows: Upon a first conviction, by a fine not exceeding $250.00, and for a second conviction or any subsequent conviction within a period of one year, by a fine not exceeding $500.00.

B. Cutting, removing, or trimming of trees on public property without a permit shall be a misdemeanor.

C. In addition to the penalties provided for herein, any violation of such sections may be addressed by civil action. (Ord. 95-3 § 1, 1995; Ord. 88-13 § 4, 1988).

12.28.190 Responsibility of Building Official.
It shall be the responsibility of the Building Official to inform every applicant for a building permit of the restrictions of this chapter. (Ord. 83-25 § 1(G), 1983; Ord. 236 C.S. § 1, 1971; Code 1975 § 1232.02).

12.28.205 Notice of Forest and Beach Commission Public Hearing.
Notice of public hearing shall be posted in a conspicuous place on, or immediately adjacent to, the subject property. (Ord. 93-10 § 1, 1993).

12.28.210 Suspension of Permit.
Removal of trees, pruning or root removal without a permit shall be grounds for suspension of any permits granted for construction or demolition for a period of up to 90 days, said period of time to be determined by the Director of Forest, Parks and Beach. During the suspension period, the property owner or her/his designee shall make application to the Forest and Beach Commission to obtain the necessary permit. Upon the review of the application, the Forest and Beach Commission:
A. May require replacement trees to be planted upon completion of construction;
B. May require an amount of money equal to the value of the lost tree(s) to be deposited in a deposit account to be used for reforestation;
C. May, in the event a tree is damaged on a construction or demolition site so as it may die within one year, require a sum of money equal to the tree's value to be deposited with the City in a deposit account for a period of time not exceeding one year. If the tree dies during that period, the money shall be used by the City for reforestation.
The tree's value shall be determined by Director of Forest, Parks and Beach using criteria established by the International Society of Arboriculture. (Ord. 95-3 § 1, 1995; Ord. 91-18 § 1, 1991; Ord. 88-13 § 3, 1988; Ord. 236 C. S. § 1, 1971; Code 1975 § 1232.04).

12.28.230 Planting Trees.
All trees planted in the public street or sidewalk area and all tree planting spaces required by this code shall be located and planted under the supervision of the Director of Forest, Parks and Beach, who shall supervise such planting and locating. In the performance of such work, consideration shall be given to the following factors; provided, that setbacks permit and considerations of safety do not interfere. These factors are determined to be of primary importance in maintaining the City forest:
A. Trees that must be removed shall be replaced by new planting, except in unusual circumstances.

B. Wherever feasible, trees shall be planted near old and dying ones in anticipation of their removal.
C. Unnatural regularity of spacing and arrangement shall be avoided; staggered or irregular locations or a simulated forest arrangement being preferred.
D. Species selected may vary, depending on location, however, the preference of native species is urged; the Monterey pine is to be perpetuated as the dominant forest tree within the City.
E. The coordinating of tree planting on public ways with landscaping on private property so as to achieve the above purposes is deemed desirable. (Ord. 81-4 § 9, 1981; Ord. 138 C.S. § 1, 1967; Code 1975 § 1235).

12.28.240 Diseased Plants on City Property.
Any tree, shrub or other plant growing on City property, when infested by any insect or infected by any disease threatening the life of same, or which by reason of such infestation or infection endangers the life or growth or healthful existence of other trees, shrubs or other plants within the City not so infested or infected, or any trees determined by the Director of Forest, Parks and Beach to be a clear and present danger to persons or property, shall be removed as directed by the Director of Forest, Parks and Beach. (Ord. 302 C.S. § 2, 1973; Code 1975 § 1236).

12.28.250 Diseased Plants on Private Property.
Any trees, shrubs and other plants growing on private property, when infested by any insect or infected by any disease threatening the life of same, or which by reason of such infestation or infection endanger the life or growth or healthful existence of other trees, shrubs or other plants within the City not so infested or infected, or any trees determined by the Director of Forest, Parks and Beach to be a clear and present danger to persons or property, may be declared, by resolution of the City Council, to be a public nuisance and thereafter abated as provided for in this chapter. (Ord. 302 C.S. § 2, 1973; Code 1975 § 1236.01).

12.28.260 Notice to Owner.
Immediately upon determination by the Director of Forest, Parks and Beach that any tree, shrub or other plant is a nuisance, s/he shall cause a copy of this chapter to be sent by certified mail to the last address of record of the property owner concerned, together with a notice setting forth the details of the nuisance and the requirement of its abatement, advising the owner of the property that the nuisance shall be abated by the owner within 30 days if the City is not to proceed with the further steps set forth in this chapter. (Ord. 302 C.S. § 2, 1973; Code 1975 § 1236.02).

12.28.270 Notice to City Council.

In the event the nuisance is not abated by the property owner or her/his agent within the specified time, the Director of Forest, Parks and Beach shall forward to the City Clerk a request for resolution by the City Council, indicating that adequate notice has been given the property owner concerned and that the nuisance still exists. (Ord. 302 C.S. § 2, 1973; Code 1975 § 1236.03).

12.28.280 Nuisance Hearing.

The City Clerk shall place on the agenda of the next regular meeting of the City Council a resolution declaring diseased trees, shrubs or other plants to be a nuisance and setting a hearing thereon. The Clerk shall cause a copy of the resolution to be mailed to the property owner at least 10 days prior to such hearing. (Ord. 302 C.S. § 2, 1973; Code 1975 § 1236.04).

12.28.290 Notice of Public Nuisance - Posting.

A. After the passage of such resolution, the Director of Forest, Parks and Beach shall cause to be conspicuously posted on the property upon which such public nuisance is alleged to exist not less than three notices headed "Notice to Abate Public Nuisance," such heading to be in letters not less than one inch in height and substantially in the following form:

NOTICE TO ABATE PUBLIC NUISANCE Notice is hereby given that on the ____ day of _____, 19__, the City Council of the City of Carmel-by-the-Sea passed a resolution declaring that certain (trees, shrubs, or other plants) located upon (description of the property) are (infested with insects, infected with disease, or are a clear and present danger to persons or property), and that the same constitute a public nuisance which must be abated by the removal of the same, otherwise they will be removed and the nuisance abated by the City, in which case the cost of such removal shall be assessed upon the property from which such (trees, shrubs, or other plants) are removed, and such cost will constitute a lien upon such property until paid. Reference is hereby made to said resolution for further particulars.

Any person objecting to the proposed removal, as aforesaid, is hereby notified to attend the meeting of said City Council to be held in the Council Chambers at City Hall at (time) on the ____ day of _____, 19__, when such objection will be heard and given due consideration.

Dated this ___ day of _____, 19__.

Director of Forest, Parks and Beach

City of Carmel-by-the-Sea

B. The notices shall be posted at least five days prior to the time for hearing objections to the abatement of such public nuisance. (Ord. 81-14 § 10, 1981; Ord. 138 C.S. § 1, 1967; Code 1975 § 1236.3).

12.28.300 Council Decision.

At the time stated in such notices, the City Council shall hear and consider all objections, if any, to the proposed removal, and may continue the hearing from time to time. Upon the conclusion of such hearing, the City Council shall have acquired jurisdiction to proceed and perform the work or removal, and the decision of the City Council on the matter shall be final and conclusive. (Ord. 138 C.S. § 1, 1967; Code 1975 § 1236.4).

12.28.310 Abatement of Nuisance.

After final action has been taken by the City Council, or in case no protests or objections have been received, the City Council shall by resolution order the Director of Forest, Parks and Beach to abate the nuisance by having any and all trees, shrubs, or other plants infected as aforesaid removed from the premises in question, and the Director of Forest, Parks and Beach, her/his deputies and assistants are expressly authorized to enter upon private property for such purpose. Any property owner shall have the right to have any such trees, shrubs, or other plants removed at the property owner's expense, providing the same is done prior to the arrival of the Director of Forest, Parks and Beach or her/his assistants to remove the same. (Ord. 81-4 § 11, 1981; Ord. 138 C.S. § 1, 1967; Code 1975 § 1236.5).

12.28.320 Cost of Abatement.

The Director of Forest, Parks and Beach shall keep an account of the cost of abating such nuisance upon each lot, piece, or parcel of land, and shall submit an itemized statement thereof to the City Council at its next subsequent meeting thereafter, and shall forthwith mail a full and correct copy of such statement to the owner or owners of such premises, if known, to the owner(s)' last known place of residence. In the event that any such owner is unknown, the statement shall be posted on the bulletin board of City Hall for one week, giving notice when such statement will be submitted to the City Council for approval. (Ord. 81-4 § 12, 1981 Ord. 138 C.S. § 1, 1967; Code 1975 § 1236.6).

12.28.330 Assessment Against Owner.

At the time for receiving and considering such statement, the City Council shall proceed to consider the same and the objections thereto, if any, and may raise, lower, or modify the amount alleged to be due therein. The determination of the City Council thereon, as aforesaid, shall be final and conclusive, and the amounts of the cost of abating such nuisance upon the various lots or parcels of land mentioned in the statement shall constitute special assessments against the same, respectively, upon confirmation of such statement, a full and correct copy thereof shall be delivered to the Assessor for the City, and it shall be the duty of the Assessor to add the amounts set forth in such statement and charged against any lot, piece, or parcel of land, to the amount assessed against the same for

municipal taxes and assessments, and thereafter said amounts shall be collected at the same time and in the same manner as ordinary City taxes are collected, and such special assessments shall be subject to the same penalties and the same procedure under foreclosure and sale in case of delinquency, as provided for ordinary municipal taxes. (Ord. 138 C.S. § 1, 1967; Code 1975 § 1236.7).

12.28.340 Safeguarding Trees During Construction, Demolition or Tree Removal.

For the purpose of safeguarding trees during construction, demolition or tree removal, the following conditions shall apply to all trees other than trees for which a removal permit has been issued:

A. Prior to the commencement of construction, demolition or tree removal, all trees on the building site shall be inventoried by the owner or contractor as to size, species and location on the lot, and the inventory shall be submitted on a topographical map to the Building Official. This condition may be waived by the Building Official for tree removal and minor demolition.

B. Damage to any tree during construction, demolition or tree removal shall be immediately reported by a person causing the damage, the responsible contractor or the owner to the Director of Forest, Parks and Beach, and the contractor and/or owner shall treat the tree for damage in the manner specified by the Director of Forest, Parks and Beach.

C. Oil, gasoline, chemicals and other construction materials shall not be stored within the dripline of any tree.

D. Drains shall be installed according to City specifications so as to avoid harm to trees due to excess watering.

E. Wires, signs and other similar items shall not be attached to trees.

F. Cutting and filling around the base of trees shall be done only after consultation with the Director of Forest, Parks and Beach, and then only to the extent authorized by the Director of Forest, Parks and Beach.

G. No paint thinner, paint, plaster or other liquid or solid excess or waste construction materials or wastewater shall be dumped on the ground or into any grate between the dripline and the base of the tree, or uphill from any tree where such substance might reach the roots through a leaching process.

H. The property owner/contractor shall be required to erect protective barricades around all trees on a private building site. These barricades must be in place prior to the start of any construction or demolition activities. Barricades shall be upright two-inch by four-inch planks standing a minimum of eight feet vertically, conforming to the tree, tied with wire or rope forming a maximum of one space between the planks. If the tree's configuration or site conditions do not lend themselves to the installation of this type barricade, the Director of Forest, Parks and Beach will designate alternate tree protection methods. Under certain conditions where soil compaction is probable, fences may also be required around a tree or grouping of trees.

I. Wherever cuts are made in the ground near the roots of trees, appropriate measures shall be taken to prevent exposed soil from drying out and causing damage to tree roots.
J. Trimming cuts shall conform to arboricultural standards and shall be made along the branch bark ridge.
K. Earth surfaces within the dripline of any tree shall not be changed or compacted. All equipment, material, and soil storage shall be kept beyond the dripline of trees.
L. Prior to the start of any construction or demolition activities, the property owner/contractor is required to spray or have a certified applicator spray the lower six feet of all pine tree trunks with a pesticide approved by the California Department of Food and Agriculture for the treatment of bark beetles.
M. The property owner is responsible for care of all trees that are to remain on the site. This includes the treatment of bark beetles as designated by the Director of Forest, Parks and Beach. If the property owner wishes City staff to perform bark beetle treatment, he/she may request this service in writing and will be charged an amount equal to the cost of time, equipment, and materials utilized by the City in such treatment.
N. Failure to protect or maintain trees on construction/demolition sites is a violation of the municipal code and grounds for suspension of the building permit. (Ord. 91-4 §§ 1 – 7, 1991; Ord. 84-6 § 1, 1984; Ord. 83-25 § 1(G), 1983; Ord. 81-4 § 12, 1981; Code 1975 § 1237).

12.28.350 Safeguarding Trees That are Required to be Planted as a Condition of Tree-Removal Permit Approval.
A. Trees required to be kept on a building site and trees required to be planted as a condition of tree-removal permit approval shall be maintained according to accepted arboricultural practices for a minimum of five years from the completion of construction or the date that the tree is planted.
B. At no time shall these trees be moved without the issuance of a valid permit.
C. Nothing contained in this section shall be deemed to replace or revoke any requirements for the safeguarding of trees found elsewhere in this municipal code or in the ordinances and procedures of the City. (Ord. 95-10 § 1, 1995; Ord. 84-6 § 1, 1984; Code 1975 § 1238).

City of Carmel-by-the-Sea Municipal Code
Chapter 2.32
FOREST AND BEACH COMMISSION
Sections:

2.32.010 Establishment of Commission.
2.32.020 Membership and Criteria for Appointment.
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2.32.010 Establishment of Commission.
There is created and established the Forest and Beach Commission of the City of Carmel-by-the-Sea. (Ord. 91-19 § 2, 1991; Ord. 88-12 § 1 (Exh. A), 1988; Ord. 213 C.S. § 1, 1970; Ord. 186 C.S. § 1, 1968; Ord. 135 C.S. § 1, 1966; Ord. 110 C.S. § 1, 1964; Ord. 88 C.S. § 1, 1963; Ord. 58 C.S. § 1, 1962; Ord. 26 C.S. § 1, 1960; Ord. 8 C.S. § 1, 1959; Code 1975 § 270.0).

2.32.020 Membership and Criteria for Appointment.
A. The Forest and Beach Commission shall consist of five members, each of whom shall be appointed to serve a four-year term.
B. A two-thirds majority of the members of the Forest and Beach Commission shall be residents of the City, and the remainder may be residents of the City's sphere of influence.
C. Membership shall be representative of persons who have an interest in, or familiarity with, the City's parks and open space. (Ord. 2000-05 § 2, 2000; Ord. 95-5 § 2, 1995; Ord. 91-19 § 2, 1991; Ord. 88-12 § 1 (Exh. A), 1988; Ord. 77-27 § 1(a), 1977; Ord. 213 C.S. § 1, 1970; Code 1975 § 270).

2.32.030 Appointment Process.
A. Members of the Forest and Beach Commission shall be nominated by the Mayor, whose nomination shall be ratified by at least three of the five members of the City Council.
B. Terms of members shall be staggered so that at least two terms, but no more than three terms, shall expire in any one year. Appointments shall be, where possible, made prior to the beginning of the term of office, in order that the new member(s) shall be able to become familiar with the functions of the commission. Terms of office for new members shall begin at the commencement of the first regular meeting in the month of October of the appropriate year.

Terms of outgoing members shall end simultaneously. The newly appointed member(s) shall be sworn in by the City Clerk.
C. In the event an appointment cannot be made in a timely manner, the City Council, with the consent of the incumbent, may extend the incumbent's term for up to 90 days. (Ord. 93-8 § 1, 1993; Ord. 91-19 § 2, 1991; Ord. 89-3 § 2, 1989; Ord. 88-12 § 1 (Exh.A) 1988; Ord. 77-27 § 1(b), 1977; Ord. 142 C.S. § 2, 1967; Code 1975 § 281.1).

2.32.040 Termination of Members.
Members of the Forest and Beach Commission shall be terminated only under the following circumstances:
A. The member ceases to be a resident of the City, thereby causing less than a two-thirds majority of the commission to be residents of the City.
B. The member is ill or absent from the City and unable to attend three consecutive regular commission meetings, but fails to so notify either the Chairperson, Vice Chairperson, or the Director of Forest, Parks and Beach.
C. The member, when neither ill nor absent from the City, fails to attend three consecutive regular commission meetings.
D. The member is terminated by a majority vote of the City Council. (Ord. 95-5 § 2, 1995; Ord. 93-8 § 1, 1993; Ord. 91-19 § 2, 1991; Ord. 89-3 § 2, 1989; Ord. 88-12 § 1 (Exh. A) 1988; Ord. 77-27 § 1(b), 1977; Ord. 142 C.S. § 2, 1967; Code 1975 § 281.1).

2.32.050 Bylaws, Policies, Rules and Procedures.
The Forest and Beach Commission shall adopt or maintain bylaws, policies, rules, and procedures governing parliamentary actions, election of officers and formation of committees. The bylaws shall be filed with the City Clerk. (Ord. 91-19 § 2, 1991; Ord. 88-12 § 1 (Exh.A), 1988; Ord. 77-27 § 1(a), 1977; Ord. 213 C.S. § 1, 1970; Code 1975 § 270.54).

2.32.060 Duties, Responsibilities and Authority.
The Forest and Beach Commission shall have the following duties, responsibilities and authority:
A. To develop, with the Director of Forest, Parks and Beach, a management plan for the urban forest, parks and beach, and to correlate such plan with the City's General Plan;
B. To consider and act on applications for tree trimming and tree removal and on matters involving construction in which root cutting or root crown coverage is involved;
C. To advise the City Council or other government instrumentalities of the City with respect to specified items of management and technical forestry and beach

matters, including the introduction of new species into the urban forest, or the elimination of existing species;
D. To provide publicity in regard to the problems of the urban forest, including a public information program concerning care of forest resources, and including cooperation with school programs on conservation and the like;
E. To encourage gifts, bequests and devises to be made to the City in furtherance of any present or future object or project associated with the commission;
F. To review plans and submit comments to the Planning Commission as requested by the Department of Community Planning and Building;
G. To advise the City Council or other government instrumentalities of the City on the preservation, enhancement, protection and care of the Carmel-by-the-Sea beach and waterfront area;
H. Upon referral from the City Council, to review and recommend to the City Council possible City positions on proposals in the City, the City's sphere of influence, or any wider area, which impact the natural environment of the area. (Ord. 93-8 § 1, 1993; Ord. 91-19 § 2, 1991; Ord. 88-12 § 1 (Exh. A), 1988; Ord. 213 C.S. § 1, 1970; Code 1975 § 272).

2.32.070 Authority to Expend Funds.
The Forest and Beach Commission may incur indebtedness in the name of and on behalf of the City in furtherance of its objectives; provided, that funds are appropriated, approved, or budgeted by the City Council, in advance, for such purpose. (Ord. 91-19 § 2, 1991; Ord. 88-12 § 1 (Exh. A), 1988; Ord. 213 C.S. § 1, 1970; Code 1975 § 272).

City of Carmel-by-the-Sea Municipal Code
Chapter 12.08
ENCROACHMENTS*
Sections:

12.08.010 General.
12.08.020 Definitions.
12.08.030 Permit – Required.
12.08.040 Permit – Application and Fees.
12.08.050 Permit – Process and Determination.
12.08.060 Encroachment Application Review Standards.
12.08.070 Permit – Emergency Work.
12.08.080 Permit – Issuance.
12.08.090 Appeals.
12.08.100 Renewal Fees.
12.08.110 Hold Harmless Agreement, Insurance and Bond Requirement.
12.08.120 Water System Transmission, Sanitary System Transmission and Reclaimed Water System Lines.
12.08.125 Nonconforming Existing Encroachments.
12.08.130 Revocation of Permit and Abatement.
12.08.140 Waiver of Liability.

* For statutory provisions on the construction of sidewalks, curbs and gutters, see Streets and Highways Code § 5870 et seq.; for provisions on maintenance of sidewalks, see Streets and Highways Code § 5600 et seq.

Prior legislation: Code 1975 §§ 1218.0 – 1218.11; Ords. 318 C.S., 82-24, and 85-37.

12.08.010 General.

While it is recognized that special and unusual conditions may justify the erection, installation, or placement of encroachments on, over, or under public property of this City, it is the policy of this City to discourage encroachments onto public lands and that such encroachments shall be kept to a minimum and shall be permitted only when consistent with the General Plan, are for the preservation of public health, safety or welfare, contribute to the furtherance of the general planning and zoning objectives of this City and are characteristic with the appearance of the neighborhood and City. (Ord. 89-9 § 1, 1989).

12.08.020 Definitions.

For the purposes of this code, the following definitions shall apply:

A. "Encroachment" is any excavation, structure or object, temporary or permanent, upon, over, or under any City property or public right-of-way, except driveways which are addressed in Chapter 12.24 CMC.

B. "Utility company" shall include, but not be limited to, any entity or person providing gas, electric, water, television cable, telephone, sanitary service or other utility services.
C. "Permittee" means any person or organization who/which has been issued an encroachment permit.
D. "Temporary encroachment" means any encroachment which remains on City-owned property or on the public right-of-way for 90 days or less.
E. "Permanent encroachment" means any encroachment which remains on City-owned property or in the public right-of-way more than 90 days.
F. "Person" means an individual, group of individuals, company, utility company, governmental agency, or any other organization.
G. "Mitigation" means measures taken to compensate for negative public impacts of an encroachment.
H. "Emergency" means any unforeseen maintenance requiring immediate action to prevent injury to persons or significant property damage or loss.
I. "Structure" is as defined in the Uniform Building Code and CMC Title 17. (Ord. 89-9 § 1, 1989).

12.08.030 Permit - Required.
A permit is required to create, erect, construct, place, operate or maintain any obstruction, structure or encroachment including utility lines, sanitary system transmission lines or reclaimed water system lines in, over, under or on any sidewalk area, street, public right-of-way, park or parkway. (Ord. 89-9 § 1, 1989).

12.08.040 Permit - Application and Fees.
A. Application for any encroachment under this chapter shall be submitted to the Director of Community Planning and Building on approved City forms. The Department of Community Planning and Building shall cause the appropriate City department(s) to review the application prior to forwarding it to the City Administrator for processing. There shall be a fee(s) for the filing of this application as established by the City Council from time to time by resolution. Concurrent with the application submittal, the applicant shall notify in writing, by first-class mail, postage prepaid, owners and residents/business occupants within 100 feet of the location of the proposed encroachment of the following:
1. Description of encroachment;
2. Notice of availability of inspection of a plan showing the location of the encroachment and construction detail;
3. Notice of last day to inspect plans and/or file objection to the proposed project;

4. Scheduled date of City Council (if applicable) or City staff action to be taken on the application;
5. Estimated length of time to complete project;
6. Possible disruption of service or accessibility to adjoining properties;
7. Hours of construction; and
8. A description of mitigation measures, if required.

A declaration under penalty of perjury, on a form supplied by the City Clerk, attesting to the fact that these requirements have been met shall be attached to the application.

B. Two sets of plans showing the location of the proposed encroachment and a construction detail shall accompany the application. This requirement may be waived by the Director of Community Planning and Building if the encroachment is minor in nature and does not include a structure. (Ord. 89-9 § 1, 1989).

12.08.050 Permit – Process and Determination.

A. Applications for encroachments involving properties in the CC, SC, RC and R-4 districts which accompany applications for design review shall be forwarded to the Planning Commission for its consideration and recommendation.

B. The Director of Community Planning and Building shall forward the application for encroachment permit to the City Administrator after the appropriate City department(s) has reviewed the application and made recommendations.

C. The City Administrator, or his/her designate, may approve the application if it conforms to the standards set forth in CMC 12.08.060 below.

D. If the proposed encroachment does not conform to these standards, or it is the opinion of the City Administrator that the nature of the encroachment is contrary to the public interest or should be referred to the City Council for determination, then the application shall be scheduled for action by the City Council. In all other cases, the decision of the City Administrator shall be final, unless appealed as provided for in CMC 12.08.090. The applicant shall be notified by the City Administrator within 10 days of the City Administrator's decision to grant, deny, or refer any application. (Ord. 89-9 § 1, 1989).

12.08.060 Encroachment Application Review Standards.

A. Need. The applicant shall be determined to have a justifiable need for the encroachment, and the encroachment shall not be contrary to the public interest.

B. Safety. The granting of an encroachment permit shall not create a hazard to public health or safety.

C. Drainage. The proposed encroachment shall not adversely affect the normal drainage of surface water, unless an acceptable mitigation is included that will be advantageous to the general public and meet the standards herein.

D. Circulation and Parking.

1. The proposed encroachment shall not adversely affect vehicular and/or pedestrian traffic nor the parking of vehicles.

2. The proposed encroachment shall not adversely impact existing rights-of-way nor preclude or make difficult the establishment or improvement of existing or potential streets or pedestrian ways.

E. Public Use and Enjoyment.

1. The proposed encroachment shall not diminish public use or enjoyment, either visual or physical, of the City property or public right-of-way to be encroached upon.

2. The encroachment and enjoyment shall be in the public interest.

3. The length of time an encroachment has existed shall not by itself prejudice a decision.

F. Compatibility.

1. The proposed encroachment and its mitigation shall be consistent with the General Plan and the adopted ordinances of the City. Particular attention shall be given to Section P1-48 of the General Plan, which prohibits the construction of sidewalks and concrete curbs in the R-1 district, unless necessary for drainage and/or pedestrian safety.

2. The encroachment shall not create, extend, or be reasonably likely to lead to an undesirable land use precedent.

3. Granting of a permit shall not adversely affect the usability or enjoyment of one or more adjoining parcels.

4. The proposed encroachment and its mitigation shall be compatible with the surrounding area and adjoining properties.

G. Public Property/Greenbelt.

1. The proposed encroachment shall not adversely affect any public property, including existing vegetation or its root structure, and shall not significantly reduce greenbelt area that may be used for tree planting.

2. Significant trees which would be affected by the proposed encroachment shall be identified by the Director of Forest, Parks and Beach and approval for removal shall follow City policy.

H. Mitigation. When deemed appropriate by the City, the applicant shall include those measures appropriate to compensate the City for the loss of the use of City property or the public right-of-way, or to repair damage thereto. (Ord. 89-9 § 1, 1989).

12.08.070 Permit - Emergency Work.
Any person or agency, public or private, may perform emergency maintenance without first securing an encroachment permit; provided, the Department of Public Works is notified prior to the starting of work. The person or agency shall apply for a permit following the procedures set forth in CMC 12.08.050 on the first business day subsequent to the emergency action. The City shall not be obligated to permit the encroachment beyond the period of emergency. The City may require changes or improvements to the emergency encroachment which are consistent with this code. (Ord. 89-9 § 1, 1989).

12.08.080 Permit - Issuance.
If, in the opinion of the City Administrator or his/her designate, the issuance of the permit conforms to the standards set forth in CMC 12.08.060 and will not jeopardize the public health, safety or welfare, the Director of Community Planning and Building may be authorized to issue the permit. (Ord. 89-9 § 1, 1989).

12.08.090 Appeals.
Any decision of the City Administrator may be appealed by submitting to the City Clerk, in writing, a request for appeal and the reasons therefor within 14 calendar days of the date of the decision. The City Clerk shall place any such appeal on the agenda of the City Council. Any decision of the City Council shall be final. (Ord. 89-9 § 1, 1989).

12.08.100 Renewal Fees.
Renewal fees are intended to offset costs that the City incurs for processing and renewing encroachment permits. The fees will be established from time to time by resolution of the City Council. Failure to pay a renewal fee may result in revocation of an encroachment permit and abatement proceedings. (Ord. 89-9 § 1, 1989).

12.08.110 Hold Harmless Agreement, Insurance and Bond Requirement.
Before receiving an encroachment permit, and as a condition of that permit, the permittee shall execute an agreement holding the City harmless from any and all claims, actions and demands of third parties of any kind, character and description arising out of or due to any accident or mishap in, on or about said encroachment so constructed or maintained or any error or omission resulting in personal injury or property damage. The permittee shall provide a certificate of insurance naming the City as an additional insured for the term of the maintenance of the encroachment establishing that the permittee has $1,000,000 combined single limit insurance for personal injury and/or property damage

caused by or due to the presence of the encroachment in the CC, SC, RC and R-4 districts and $500,000 of this coverage in the R-1 district. The limit of insurance and any other requirements relating to the insurance required may be adjusted by the City Council from time to time by resolution. The insurance carrier shall certify that the insurance is currently in force and that it will notify the City 10 days in advance of any material change in the policy, including cancellation or nonrenewal thereof. This insurance shall be primary over any other collectible or valid insurance the City may have. In addition, the bonding requirement set forth in Chapter 12.16 CMC shall be met for an encroachment involving excavation work. The City shall have the executed hold harmless agreement recorded with the Monterey County Recorder's office. The recorded document becomes a permanent record, and an encroachment permit and its conditions run with the land. In the event of change of ownership of the property, the terms and conditions of the hold harmless agreement are conveyed with the title. (Ord. 89-26 § 1, 1989; Ord. 89-9 § 1, 1989).

12.08.120 Water System Transmission, Sanitary System Transmission and Reclaimed Water System Lines.

For water system transmission lines, sanitary system transmission lines and reclaimed water system lines, the application shall be accompanied by a duly executed utility easement between the City Council and the party making application and by a conditional use permit issued pursuant to City ordinances. In considering whether to grant use permit applications, the City Council, in addition to other policies and factors required by ordinance or law, shall consider the actual and potential environmental impact upon the City and the surrounding community, and upon adjoining properties. The City Council shall also consider the project's consistency with the City's adopted General Plan and ordinances. (Ord. 89-9 § 1, 1989).

12.08.125 Nonconforming Existing Encroachments.

A. At the transfer of property ownership or the issuance of a building permit, the Building Official shall inspect the public right-of-way adjacent to the affected private property. He/she shall require the abatement of any nonconforming encroachments or the property owner may submit an application for an encroachment permit that will be processed in accordance with CMC 12.08.050.

B. City staff may cooperate with the property owner to help remove and dispose of asphalt that has not been authorized by the City.

C. The City may plant trees and native vegetation, if appropriate, in areas where asphalt has been removed. (Ord. 96-6 § 1 (Exh. A), 1996).

12.08.130 Revocation of Permit and Abatement.

A. Revocation. The City Council reserves the right to revoke any encroachment permit at any time if the permit is not in the public interest or if it fails to meet the other requirements of this chapter. Failure of the permit holder to maintain the required insurance or pay an assessed fee shall result in the immediate revocation of the permit. The City Council may order the removal of the encroachment by the permittee. Should a permittee fail to comply with the Council's order for removal, the City may undertake the removal of the encroachment. In that event, the City's costs of removal shall be assessed against the permit holder and/or the property and become a lien against the property.

B. Determination of Nuisance. Whenever the City Administrator, or his/her designate, determines that an encroachment exists contrary to one or more of the provisions of this chapter, the encroachment shall be considered a nuisance and abatement proceedings may be initiated by the City.

C. Notice to Owner. Immediately upon determination by the City Administrator that an encroachment constitutes a public nuisance, the City Administrator shall cause a copy of this section to be sent by certified mail to the last address of record of the permittee, together with a notice setting forth the details of the nuisance and the requirements of its abatement. The notice shall advise the permittee that the nuisance shall be abated within 30 days. If the City Administrator determines that the encroachment constitutes an immediate threat to health or safety, s/he shall then cause the encroachment to be abated in the most expeditious manner available, giving the permittee a reasonable opportunity under the circumstances to be heard on the issues of abatement and nuisance.

D. Notice to City Council. In the event the nuisance is not abated by the permittee within the specified time, the City Administrator shall forward to the City Clerk a request for resolution by the City Council, indicating that adequate notice has been given the permittee concerned and that the nuisance still exists.

E. Nuisance Hearing. The City Clerk shall place on the agenda of the City Council a resolution declaring the encroachment to be a nuisance and setting a hearing thereon. The Clerk shall cause a copy of the resolution to be sent by certified mail to the permittee a reasonable time, or at least 10 days, prior to such hearing.

F. Notice of Public Nuisance - Posting.

1. After the passage of such resolution, the City Administrator shall cause to be conspicuously posted on, or adjacent to, the property upon which said public nuisance is alleged to exist not less than three notices headed, "Notice to Abate Public Nuisance," such heading to be in letters not less than one inch in height and such notice to be on a form supplied by the City Clerk.

2. The notices shall be posted at least five days prior to the time for hearing objections to the abatement of such public nuisance.

G. Council Decision. At the time stated in such notices, the City Council shall hear and consider all objections, if any, to the proposed abatement, and may continue the hearing from time to time. Upon the conclusion of such hearing, the City Council shall, by resolution, allow or overrule any and all objections; whereupon the City Council shall have acquired jurisdiction to proceed and perform the abatement, and the decision of the City Council on the matter shall be final and conclusive.

H. Abatement of Nuisance. After final action has been taken by the City Council to abate a nuisance, or in case no protests or objections have been received, the City Council shall, by resolution, order the City Administrator to abate the nuisance. The affected permittee and/or property owner shall have the right to have any such encroachment removed at his/her own expense, providing the same is done prior to the arrival of the City staff or contractor to remove the same.

I. Cost of Abatement. The City Administrator shall keep an account of the cost of abating such nuisance and shall submit an itemized statement thereof to the City Council at its next regular meeting, and shall forthwith send by certified mail a true and correct copy of such statement to the permittee and/or the owners of such premises. In the event that any such permittee or owner is unknown, the statement shall be posted on the bulletin board of City Hall for one week, giving notice when such statement will be submitted to the City Council for approval.

J. Assessment Against Owner. At the time for receiving and considering such statement, the City Council shall proceed to consider the same and the objections thereto, if any, and may raise, lower, or modify the amount alleged to be due therein. The determination of the City Council, as aforesaid, shall be final and conclusive, and the amounts of the cost of abating such nuisance upon the parcel of land mentioned in the statement shall constitute special charges and assessments against the permittee and/or the property, respectively. Upon confirmation of such statement, a full and correct copy thereof shall be delivered to the Monterey County Assessor and the Assessor shall add the amounts set forth in such statement and charged against any lot, piece, or parcel of land, to the amount assessed against the same for municipal taxes and assessments, and thereafter said amounts shall be collected at the same time and in the same manner as ordinary City taxes are collected, and such special assessments shall be subject to the same penalties and the same procedure under foreclosure and sale in case of delinquency, as provided for ordinary municipal taxes. Any assessment or charge against any property owner or permittee may be enforced by the City Attorney through the courts. The City shall be entitled to recover its reasonable court costs in connection with any such action.

K. Nothing in this chapter shall prohibit the City, acting through the City Attorney, from seeking judicial relief to abate any condition which constitutes a

nuisance, or an immediate threat or danger to health or safety, pursuant to State law or any other ordinance. (Ord. 89-9 § 1, 1989).

12.08.140 Waiver of Liability.
It is expressly provided that the provisions for hold harmless agreements and insurance and the acceptance of such agreements or certificates shall not be construed so as to prohibit or limit the City's right to remove or cause the removal of such encroachments as it may from time to time deem advisable, pursuant either to applicable general law or other provisions of this code. (Ord. 89-9 § 1, 1989).

City of Carmel-by-the-Sea Municipal Code
Title 17 (applicable sections)
ZONING
Chapters:

17.02 Purpose
17.04 Definitions
17.06 Districts Established
17.08 General Regulations
17.10 Commercial Districts – General Development Regulations
17.12 Commercial Districts – Design Regulations
17.14 Special Overlay Districts
17.15 Community Planning
17.16 Limited Commercial District – Zone C-1-L
17.18 Findings Required for Permits and Approvals
17.22 Multifamily Residential R-4 Land Use District
17.24 R-1 Land Use District
17.26 Park and Recreation Districts – Zones P-1, P-2 and P-2-A
17.30 Theatrical District – Zone A-1
17.32 District A-2
17.33 A-3 Land Use District
17.34 Off-Street Parking Requirements
17.36 Signs and Display Cases
17.38 Nonconforming Buildings and Uses
17.40 Design Evaluation Procedures
17.41 Historic Preservation
17.42 Environmental Review
17.43 Lot Line Adjustments
17.44 Reclassifications and Amendments
17.46 Planning Commission
17.48 (Reserved)
17.50 Appeals
17.52 Enforcement

17.08.040 Water Conservation.

Water conservation is an integral part of the City's water management program. Water resources available to the City are limited. In some cases, water conservation can increase the effective supply and allow development that otherwise would not be possible. Water conservation in new development can reduce the demand from each project and thereby increase the number of projects that can be served with available resources. It is the intent of this section

to establish uniform standards for water conservation and to provide guidance on the manner in which conserved water is to be used within the City's total water management program.

A. Uniform Standards for Plumbing Fixtures. The use of water-conserving plumbing fixtures shall be required for all new construction. All existing plumbing fixtures within any building that do not comply with the adopted standards for water conservation shall be replaced with complying fixtures upon issuance of any building permit authorizing substantial construction. Standards for water-conserving plumbing fixtures and the criteria for when such fixtures are required are established in Chapter 15.28 CMC.

B. Landscaping Standards. It is recognized that the irrigation of plants used in landscaping can consume large quantities of water. Proper design of irrigation systems and proper selection of plant species can significantly reduce water consumption while achieving a more natural appearance in community design through the use of native plants and other species habituated to the central coast. The following standards are intended to achieve these objectives while facilitating the improvement of landscaped areas throughout the City:

1. All plants within landscaped areas on any public right-of-way adjacent to private property shall be drought tolerant and low water use species as determined by the Director of Forest, Parks and Beach.

2. All private projects in all commercial, R-4, and R-1 land use districts that involve additions or new buildings requiring design study or design review shall require the review and approval of a landscape and irrigation plan by the Forest and Beach Department. Standards (a), (b) and (c) below shall be used in evaluating and approving such projects:

a. Privately installed irrigation systems may be authorized within any public right-of-way adjacent to private property upon approval of an encroachment permit.

b. At least 75 percent of the planted area of all open space on project sites in the commercial, R-4, and R-1 districts, except for existing landscapes, shall be planted with drought tolerant and low water use species as determined by the Director of Forest, Parks and Beach. The Director of Forest, Parks and Beach shall develop and maintain a list of appropriate species to assist the public in preparing landscape plans meeting this standard.

c. Irrigation systems shall be designed to minimize the use of water. Low output sprinkler heads and/or drip irrigation shall be required for systems installed on commercial, R-4, and R-1 property.

C. Water Waste. The waste of potable water resources is declared to be a public nuisance. The unnecessary use of water for purposes that can be achieved by alternative means should be eliminated.

1. The use of hoses or other free-flowing water conveyances for the washing of sidewalks, decks, cars, walls, or other large exterior surfaces is prohibited in all commercial and R-4 districts. Exceptions to this prohibition may be granted by the City Council when required for the protection of health or safety.
2. The use of sprinkler systems, hoses or irrigation equipment in such a manner as to repeatedly overwater landscaped areas or excessively waste water in the cleaning of paved surfaces with a result of ponding or copious runoff is prohibited in all land use districts. (Ord. 93-11 § 1, 1993).

17.12.110 Landscaping.
A. Definition. Improvements to property at or near the ground surface of the land incorporating living plant material attractively arranged, planted and maintained to enhance the appearance of property. Landscaping may include nonliving materials such as sculpture, garden benches, water features and patterned paving treatments as long as the combined total area of such plant alternatives is not used to satisfy more than 25 percent of the minimum landscaping requirements on any site.
B. Minimum Landscape Requirements.
1. The minimum required landscaping area on each building site in the commercial districts shall be 40 percent of the minimum open space requirement as calculated in CMC 17.12.050(B). The minimum required landscaping on each building site in the R-4 district shall be 27 percent of the site area.
2. At least 25 percent of the minimum required landscaping area shall be located within 10 feet of one or more property lines adjoining the public street.
3. Not more than 25 percent of the minimum required landscaping area may be located above the first-story level above street grade and shall only be allowed when used to provide a more pleasant outdoor setting for the occupants of second floor residential uses.
4. In order to be counted as landscaped, an area must be visible from a public way or from a publicly accessible open space area except as provided in subsection (B)(3) above.
5. Not more than 20 percent of the required planted area may be less than two feet in width as measured across the narrow dimension of the surface of the soil. Up to one half of this amount may be in aboveground planters if these planters are permanently fixed to the ground or building, or are large enough to contain at least two cubic feet of soil each.
6. All planted landscaped areas as required herein or required as a condition of approval of any use or design permit shall be planted with suitable living plant materials, and replaced as necessary. All landscaped areas required shall be maintained in a healthy and attractive state and shall be watered, weeded and generally maintained. The Design Review Board may, as a condition of approval

of any landscaping, require a performance bond for installation, establishment and maintenance of any or all landscaping on a building site.
7. Building sites incorporating surface parking lots shall include at least 15 percent of the site area of the parking lot in landscaping. Landscaping shall be distributed along all street frontages and pedestrian walkways that are adjacent to parking areas to help screen parked automobiles from view. Plant species and/or planters should be designed to achieve a height of at least five feet above the surface of the parking lot except where this would conflict with safe visibility or good site design.
Landscaping shall also be provided with the interior of surface lots to break up large expanses of paving. Parking lots with four or more vehicles shall provide interior landscaping of at least 10 square feet per vehicle and one tree per each four vehicles.
Any site in the commercial districts directly contiguous to an R-1 district, when devoted to parking lot use, shall have landscaping along the entire length of the property line between the two districts.
C. Landscaping Requirements for Gasoline Stations. Landscaping shall be provided and maintained in a healthy state to give an attractive appearance to the public street along 80 percent of the street frontage not occupied by driveways. Planting shall be of a type that will provide a minimum height of four feet along not less than 60 percent of the required landscaped frontage. (Ord. 90-2 § 1, 1990).

17.22.140 Landscaping.
For general landscaping requirements see Chapter 17.12 CMC. Each site in the R-4 district shall provide a mix of upper and lower canopy trees consistent with the Guide to the Management of Carmel's Forest, Parks and Beaches. When the Planning Commission reviews building plans for proposed projects, adequate space shall be preserved for the growth of trees and the commission shall ensure that such space shall used for this purpose through the review and approval of landscaping plans. The purpose of this requirement is to establish a forested character throughout the district on both public and private property. The proposed location of upper canopy trees shall also be studied for their impact on the protected viewshed established in CMC 17.22.130. (Ord. 90-2 § 2, 1990. Formerly § 17.22.160).

17.24.160 Objectives.
The following objectives shall be used to provide guidance in the design of buildings in the R-1 land use district and in the review of buildings through the design study process:

A. Site Design. Good site design is essential to good building design. Site improvements should be compatible with, and sensitive to, the natural features of the site and of the surrounding area. Design solutions should relate to and take advantage of site topography, vegetation and slope. Designs should recognize the limitations of the land and work with these limitations rather than ignoring them or trying to override them.

B. Neighborhood Design. Site improvements should be compatible with structures existing on neighboring parcels and should be sensitive to their designs and neighboring property rights. Designs which conflict with the use and enjoyment of any property should be avoided. Buildings should be designed in scale with the neighborhood and should complement the character of the neighborhood rather than conflict with it.

C. Scale. Buildings should relate to a human scale in their forms, elements and in the detailing of doors, windows and walkways. Oversized elements make structures appear dominating, massive and monumental. This out-of-scale character represents a poor fit to the human form, vitiates the more intimate, rural charm and village character of Carmel-by-the-Sea and should therefore be avoided.

D. Mass and Bulk. Buildings should not present excess visual mass or bulk to public view or to adjoining properties. Large box-like buildings and buildings with large, blank or continuous, unrelieved surfaces can appear massive. When viewed from the public right-of-way, excessive mass can effectively act as a wall that dominates neighboring structures, and interferes with the enjoyment of open space and the free passage of light and air. The use of natural materials such as wood or stone, the breaking up of building planes and the creative use of landscaping can all be used to avoid excess mass.

E. Boxed-In Neighbors. Designs should protect and preserve the light, air and open space of surrounding properties, when considered cumulatively with other buildings in the neighborhood. Designs incorporating tall or bulky building elements located near the property line of an adjoining site that is already partially boxed-in by previous development should be avoided.

F. Privacy. Designs should respect the privacy of neighbors. The placement of windows, doors, balconies and decks should be sensitive to similar improvements on neighboring properties.

G. Landscaping. Designs should coordinate structural elements with landscaping to achieve a pleasing overall site design. Landscaping can achieve other design objectives such as breaking up mass and bulk and protecting privacy, but such use of landscaping should not substitute for good building design in conformance with all design objectives.

H. Protect the Urban Forest. Site improvements should be designed to preserve significant trees and to maintain the urban forest as a distinctive feature of our City's charm.
I. Public Views. Buildings should be located and designed to preserve significant coastal views from the public right-of-way in conformance with Section 30251 of the State Coastal Act. The protection of public views should not prevent reasonable development of the site, yet development should not preclude reasonable protection of any existing coastal view.
J. Private Views. Designs should respect views enjoyed by neighboring parcels. It is the intent of this objective to balance the private rights to views from all parcels that will be affected by a proposed building or addition. No single parcel should enjoy a greater right than other parcels except the natural advantages of each site's topography. Buildings which substantially eliminate an existing view enjoyed on another parcel should be avoided.
K. Solar Access. Design should preserve the rights to reasonable solar access on neighboring parcels. Excessively tall buildings, particularly those near a north property line, which would block the free passage of the sun onto neighboring solar collectors or south-facing windows should be avoided.
L. Equity. Design controls should be fair and not grant privileges to some sites while withholding them from other sites. The design study process should be fair and decisions should be reached in an unbiased manner.
M. Open spaces should be coordinated with the design of structures to enhance the park-like environment of the City. Open space should be distributed around buildings to provide visual relief from structural bulk and a visible separation from buildings on adjacent sites. Landscaped open space can help enhance the urban forest and coordinate with neighboring yards and roadside landscaping. Open space is a community resource and some front yard open space on each site should remain visible from the street to enhance the open space amenities of each neighborhood. (Ord. 90-8 § 2, 1990; Ord. 85-18 § 3, 1985).

17.24.180 Site Coverage and Open Space.
A. Purpose. Limitations on site coverage and open space are established for the following purposes:
1. To provide sufficient area on each building site for landscaping, open space and visual relief from structures.
2. To protect existing vegetation including the trees of the urban forest and to enhance the viability of the urban forest.
3. To ensure adequate percolation of rainfall into the soil thereby avoiding excessive erosion or runoff of water onto neighboring properties.

B. Definitions of Site Coverage. Site coverage is measured as the sum of building coverage and land coverage.

1. "Building coverage" is defined as the total ground area of a site occupied by all buildings as measured from the outside of their surrounding exterior walls. Building coverage includes interior spaces that overhang or are cantilevered beyond lower floors. Building coverage also includes 200 square feet for parking whether provided by a garage, carport, or parking pad. Accessory structures counted as floor area such as guesthouses, storage sheds, greenhouses and gazebos also count as building coverage.

2. "Land coverage" is defined as the total ground area of a site occupied by materials or structures that cover the natural soil at any level above the ground but which are not counted as building coverage. Land coverage includes:

a. Fully permeable materials including gravel, decomposed granite, spaced decking and open-frame exterior stairs. However, shredded bark, wood chips and similar materials used as mulch for fully landscaped areas shall not be counted as land coverage.

b. Semi-permeable materials including sand-set bricks or pavers, garden walkways of widely-spaced small paving stones, and arbors.

c. Impermeable materials including asphalt, concrete, mortared brick and stone, unspaced decking and balconies at any level, garden walls, solariums, bridges, and swimming pools.

C. Allowable Coverage.

1. Maximum building coverage is limited to the allowed floor area on a site as established in CMC 17.24.170. Designs which do not use the total allowable floor area or which place a portion of the floor area at a second story will, as a consequence, not use the maximum allowable building coverage.

2. Land coverage is limited to 10 percent of the total site area.

3. Unused building coverage cannot be converted or exchanged for additional land coverage. This preserves open space and maintains equity between one-story and two-story projects.

D. Required Open Space.

1. Definition. Open space shall be those areas that are free of structures, paving or improvements other than landscaping from the ground upward to the sky.

2. Relationship to Site Coverage. The sum of site coverage and open space equals the total building site area as defined in CMC 17.04.130.

3. All of the area within required setbacks shall be retained as open space with the exception of that portion of a setback occupied by a driveway or by minimal walkways or pathways.

E. Exceptions to Coverage Limits. The following shall not be counted as coverage:

1. Oriel windows with a minimum dimension of 18 inches above the floor may extend 18 inches beyond the structural support members of the exterior wall; window projections not meeting these standards shall be counted as building coverage.
2. Eaves, overhangs, and overhanging balconies which project no more than 36 inches from the face of the building. The area of projection beyond 36 inches shall be counted as building coverage.
3. Portions of a single driveway and a single walkway located outside required setbacks adjacent to a public street shall not be counted as land coverage if all the following requirements are met:
a. The driveway or walkway is constructed of a semi-permeable or fully permeable material as defined in CMC 17.24.180(B); and
b. An excluded driveway shall not exceed nine feet in width. An excluded walkway shall not exceed three feet in width. Portions of the driveway in excess of nine feet in width and portions of the walkway in excess of three feet shall be counted as land coverage; and
c. Sufficient effort has been made to meet the minimum tree density standards established in the R-1 Design Guidelines for both upper and lower canopy trees, as determined by the Director of Forest, Parks and Beach; and
d. The Director of Forest, Parks and Beach has determined, based on review of a site plan prepared for the property and a site inspection, that all existing and proposed trees have sufficient space to protect the root zones and provide space for new growth.
F. Sites not meeting the open space, land coverage or parking standards as specified in this section and CMC 17.24.120 shall be considered nonconforming and shall not be authorized to increase land coverage or add floor area. Sites with excess land coverage or insufficient open space may only add floor area consistent with CMC 17.24.240 when the following standards are met:
1. The site complies with the minimum tree density standards established in the R-1 Design Guidelines.
2. Director of Forest, Parks and Beach has determined based on review of project plans prepared for the property and a site inspection that all existing and proposed trees have sufficient space to protect the root zones and provide space for new growth.
3. Excess land coverage has been reduced on the site at a rate equal to two times the amount of floor area added to the site, or to an amount that complies with the land coverage standards. (Ord. 98-14 § 1, 1998; Ord. 95-7 § 8, 1995; Ord. 91-10 § 1, 1991; Ord. 90-8 § 2, 1990).

17.40.040 · Commercial Design Review.

The Planning Commission shall review all site plans and architectural developments including all color, material and treatment of exteriors in all commercial districts and in the R-4 land use district, excluding single-family residences, including the following:

- Site developments;
- Landscaping;
- Construction, remodeling and rebuilding;
- Color and material of exteriors;
- Awnings;
- Signs and display cases;
- Floodlighting and other exterior lighting.

The regulations established in Chapter 17.24 CMC shall govern single-family residences within the commercial districts and in the R-1 land use district.

A. Criteria and Standards. The following standards shall be utilized by the commission in reviewing the plans, drawings, sketches, and other documents. These standards are intended to provide a frame of reference for the applicant in the development of site and building plans, as well as a method of review for the commission. These standards shall not be regarded as inflexible requirements. They are not intended to discourage creativity, invention or innovation. The specification of one or more particular architectural styles is not included in these standards. If any other codes in Carmel are in conflict with these provisions, the more restrictive shall apply.

1. Preservation of Landscape. The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas.

2. Relation of Proposed Buildings to Environment. Proposed structures shall be related harmoniously to the terrain and to existing buildings in the vicinity that have a visual relationship to the proposed buildings. The achievement of such relationship may include the enclosure of space in conjunction with other existing buildings or other proposed buildings and the creation of focal points with respect to avenues of approach, terrain features or other buildings.

3. Drives, Parking and Circulation. With respect to vehicular and pedestrian circulation, including walkways, interior drives and parking, special attention shall be given to location and number of access points, general interior circulation, separation of pedestrian and vehicular traffic, and arrangement of parking areas that are safe and convenient and, insofar as practicable, do not detract from the design of proposed buildings and structures and the neighboring properties.

4. Surface Water Drainage. Special attention shall be given to proper site surface drainage so that removal of surface water will not adversely affect neighboring properties of the public storm drainage system.
5. Utility Service. Whenever feasible, electric, telephone and other utility lines shall be underground. Any utility installations remaining above ground shall be located so as to have a harmonious relation to neighboring properties and the site.
6. Advertising Features. The size, location, design, color, texture, lighting and materials of all exterior signs and outdoor advertising structures or features shall not detract from the design of proposed buildings and structures and the surrounding properties.
7. Special Features. Exposed storage areas, exposed machinery installations, service areas, trucking loading areas, utility buildings and structures and similar accessory areas and structures shall be subject to such setbacks, screen plantings or other screening methods as shall reasonably be required to prevent their being incongruous with the existing or contemplated environment and the surrounding properties.
8. Application of Design Standards. The standards of review outlined in subsections (1) through (7) above shall also apply to all accessory buildings, structures, exterior signs and other site features, however related to the major buildings or structures.
Unless otherwise authorized under the municipal code, the commission shall not have the authority to waive or modify the site development requirements of this title or the requirements of any other applicable City ordinances.
B. Required Plans. Drawings and plans shall be submitted in sufficient detail to illustrate clearly the design for which approval is sought. Such plans shall show the following:
1. Existing conditions, contours, trees (both public and private) and natural features, all structures and uses, improvements, public streets, rights-of-way, public and private easements and restrictions, and the official grade of the adjacent public right-of-way as established by the City Engineer.
2. Site plan showing proposed structures, contours, site developments, landscaping and natural features retained, parking and loading facilities, trash storage areas, circulation, public rights-of-way, public and private easements, trees both public and private that are endangered, to be removed or to be retained, and sufficient other information.
3. Architectural elevations, colors, lighting, material to be used in or about the exterior of the structure.
4. Such other information as may be required by the Planning Commission to permit reasonable consideration of the application.

C. Application for Design Approval. Application for design review approval shall be submitted to the Director of the Department of Community Planning and Building on forms provided by the City for that purpose. Such application shall be accompanied by the required fees as set forth by resolution of the City Council. (Ord. 86-3 § 1, 1986; Ord. 85-18 § 5, 1985).

CARMEL-BY-THE-SEA AND WESTERN CHAPTER ISA

PRUNING STANDARDS

PURPOSE:

Trees and other woody plants respond in specific and predictable ways to pruning and other maintenance practices. Careful study of these responses have led to pruning practices which best preserve and enhance the beauty, structural integrity, and the functional value of trees.

If an effort to promote practices which encourage the preservation of tree structure and health, the W.C. ISA Certification Committee has established the following Standards of Pruning for Certified Arborists. The Standards are presented as working guidelines, recognizing that trees are individually unique in form and structure, and that their pruning needs may not always fit strict rules.

Carmel-by-the-Sea's Forest and Beach Commission has adopted these pruning standards with minor amendments. **Licensed tree companies are required to adhere to these standards**. A tree-pruning permit must be obtained if pruning practices that vary from these standards are proposed. Failure to follow these standards shall be grounds for suspension/revocation of a tree company's business license.

1. PRUNING TECHNIQUES

A. A thinning cut removes a branch at its point of attachment or shortens it to a lateral large enough to assume the terminal role. Thinning opens up a tree, reduces weight on heavy limbs, can reduce a tree's height, distributes ensuing invigoration throughout a tree and helps retain the tree's natural shape. Thinning cuts are therefore preferred in tree pruning.

When shortening a branch or leader, the lateral to which it is cut should be at least one-half the diameter of the cut being made. Removal of a branch or leader back to sufficiently large lateral is often called "drop crotching".

B. A heading cut removes a branch to a stub, a bud or a lateral branch not large enough to assume the terminal role. Heading cuts should not be used because vigorous, weakly attached upright sprouts are forced just below such cuts, and the tree's natural form is altered. In some situations, branch stubs die or produce only weak sprouts. Trees shall not be topped unless necessary for utility line clearance or under unusual circumstances for which a pruning permit is necessary.

C. When removing a live branch, pruning cuts should be made in branch tissue just outside the branch bark ridge and collar, which are trunk tissue (Figure 1). If no collar is visible, the angle of the cut should approximate the angle formed by the branch bark ridge and the trunk (Figure 2).

D. When removing a dead branch, the final cut should be made outside the collar of live callus tissue. If the collar has grown out along the branch stub, only the dead stub should be removed, the collar should remain intact, and uninjured (Figure 3).

E. When reducing the length of a branch or the height of a leader, the final cut should be made just beyond (without violating) the branch bark ridge of the branch being cut to. The cut should approximately bisect the angle formed by the branch bark ridge and an imaginary line perpendicular to the trunk or branch cut (Figure 4).

F. A goal of structural pruning is to maintain the size of lateral branches to less than three-fourths the diameter of the parent branch or trunk. If the branch is codominant or close to the size of the parent branch, thin the branch's foliage by 15% to 25%, particularly near the terminal. Thin the parent branch less, if at all. This will allow the parent branch to grow at a faster rate, will reduce the weight of the lateral branch, slow its total growth, and develop a stronger branch attachment. If this does not appear appropriate, the branch should be completely removed or shortened to a large lateral (Figure 5).

G. On large-growing trees, except whorl-branching conifers, branches that are more than one-third the diameter of the trunk should be spaced along the trunk at least 10 inches apart, on center. If this is not possible because of the present size of the tree, such branches should have their foliage thinned 15% to 25%, particularly near their terminals (Figure 6).

H. Pruning cuts should be clean and smooth with the bark at the edge of the cut firmly attached to the wood.

I. Large or heavy branches that cannot be thrown clear, should be lowered on ropes to prevent injury to the tree or other property.

J. Wound dressings and tree paints have not been shown to be effective in preventing or reducing decay. They are therefore not recommended for routing use when pruning .

II. TYPES OF PRUNING - MATURE TREES

A. CROWN CLEANING

Crown cleaning or cleaning out is the removal of dead, dying, diseased, crowded, weekly attached, and low-vigor branches and water sprouts from a tree crown.

B. CROWN THINNING

Crown thinning includes crown cleaning and the selective removal of branches to increase light penetration and air movement into the crown. Increased light and air stimulates and maintains interior foliage which in turn improves branch taper and strength. Thinning reduces the wind-sail effect of the crown and the weight of heavy limbs. Thinning the crown can emphasize the structural beauty.

At least one-half of the foliage should be on branches that arise in the lower two-thirds of the trees. Likewise, then thinning laterals from a limb, an effort should be made to retain inner lateral branches and leave the same distribution of foliage along the branch. Trees and branches so pruned will have stress more evenly distributed throughout the tree or along a branch.

C. CROWN REDUCTION

Crown reduction is used to reduce the height and/or spread of a tree. Thinning cuts are most effective in maintaining the structural integrity and natural form of a tree and in delaying the time when it will need to be pruned again. The lateral to which a branch or trunk is cut should be at least one-half the diameter of the cut being made.

D. CROWN RESTORATION

Crown restoration can improve the structure and appearance of trees that have been topped or severely pruned using heading cuts. One to three sprouts on main branch stubs should be selected to reform a more natural appearing crown. Selected vigorous sprouts may need to be thinned to a lateral, or even headed, to control length growth in order to ensure adequate attachment for the size of the sprout. Restoration may require several pruning over a number of years.

E. CROWN RAISING

Crown raising removes the lower branches of a tree in order to provide clearance for building, vehicles, pedestrians, and vistas. It is important that a tree have at least one-half of its foliage on branches that originate in the lower two-thirds of its crown to ensure a well-formed, tapered structure and to uniformly distribute stress within a tree.

When pruning for view, it is preferable to develop "windows" through the foliage of the tree, rather to severely raise or reduce the crown.

III. SIZE OF PRUNING CUTS

Each of the Pruning Techniques (Section I) and Types of Pruning (Section II) can be done to different levels of detail or refinement. The removal of many small branches rather than a few large branches will require more time, but will produce a less-pruned appearance, will force fewer water sprouts and will help to maintain the vitality and structure of the tree.

The maximum size (Base diameter) or live branches that may be removed without a permit is four (4) inches. Dead limbs should always be removed.

IV. MISCELLANEOUS

A. All motor vehicles and other major equipment of any licensed business used in conducting the licensed business shall be clearly identified with the name of the licensee/business name.

B. All work must be done safely and in accordance with the American Standard for Tree Care Operation (ANSI Z133.1-1988).

C. All tree companies must be licensed to work in the City of Carmel-by-the-Sea and in addition must have a contractors license.

V. WHEN TO PRUNE

The timing of any tree pruning operation depends upon the species of tree, it's condition and the desired results. Crown thinning and major limb removal should be targeted toward the dormant period for most tree species. In Carmel this period is between mid-October through mid-February. Pruning during these months provides several benefits to the tree:

Reduced stress
Less insect activity
Improved callus formation
Lessened water sprout production

Other types of pruning can be done year round but the long-term benefit to the tree should be the primary consideration.

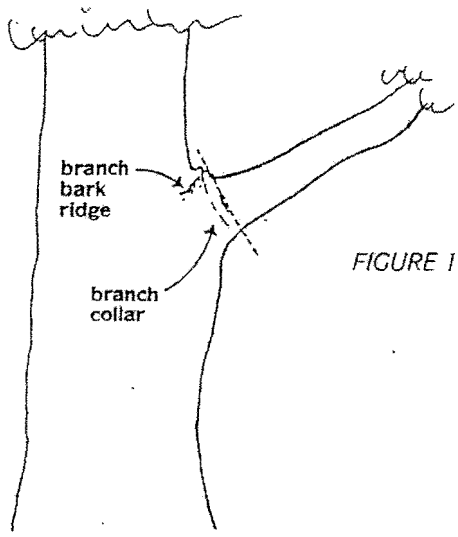

FIGURE 1. *When removing a branch, the final cut should be just outside the branch bark ridge and collar.*

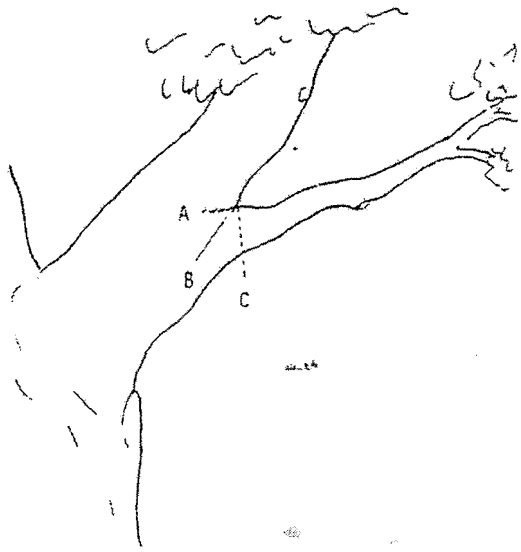

FIGURE 2. *In removing a limb without a branch collar, the angle of the final cut to the branch bark ridge should approximate the angle the branch bark ridge forms with the limb. Angle AB should equal Angle BC.*

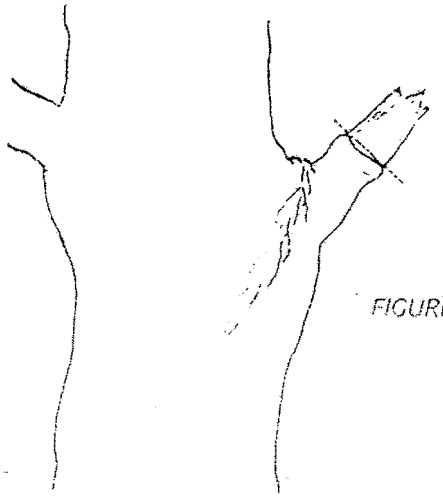

FIGURE 3. *When removing a dead branch, cut outside the callus tissue that has begun to form around the branch.*

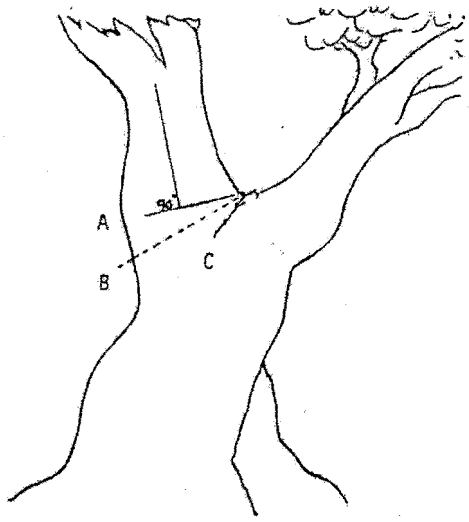

FIGURE 4. In removing the end of a limb to a large lateral branch, the final cut is made along a line that bisects the angle between the branch bark ridge and a line perpendicular to the limb being removed. Angle AB is equal to Angle BC.

FIGURE 5. A tree with limbs tending to be equal-sized, or codominant. Limbs marked B are greater than ¾ the size of the parent limb A. Thin the foliage of branch B more than branch A to slow its growth and develop a stronger branch attachment.

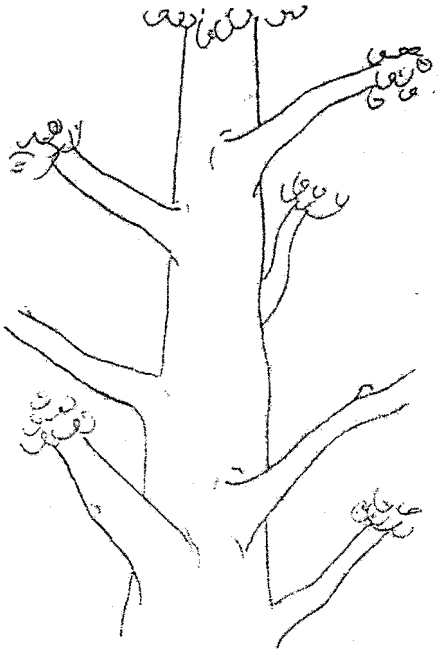

FIGURE 6. Major branches should be well spaced both along and around the stem.

POLICY FOR PRUNING TREES ON PUBLIC PROPERTY BY PRIVATE TREE COMPANIES

1. REQUIREMENTS

A. Valid City of Carmel-by-the-Sea Business License.
B. Provide proof of liability insurance ($1,000,000) naming the City, its officers, agents and employees as additionally insured.
C. Have a California Tree Service Contractors license for any project exceeding $300.
D. The project must be supervised by an ISA Certified Arborist.
E. Attend an annual City sponsored workshop regarding pruning of trees on public property.
F. Meet with the Forest, Parks and Beach Director prior to the start of a project. The contractor shall arrange for his/her client and job foreman to attend this meeting.
G. Meet with the Forest, Parks and Beach Director for an after action/project inspection and report.
H. The Scenic Coastal Overlay District is excluded from this policy and work in this District shall be preformed exclusively by the staff of the City of Carmel-by-the-Sea.

2. CONSEQUENCES OF NON-COMPLIANCE

If in the opinion of the Forest, Parks and Beach Director, the method of pruning or the amount of foliage removed is not in keeping with the standards in paragraph four of this policy, the private tree company shall not be allowed to work on public trees for a period of at least one year from the date of violation(s).

3. TREE PRUNING PHILOSOPHY

Pruning should be done only to enhance the health and natural growth characteristics of the individual tree. The use of the word "natural" is important because a tree's structure may be different depending on its age and location. Several unpruned trees in an area should be observed and used as the basis for determining a tree's natural shape and response to environmental conditions prior to the start of a pruning project.

4. TREE TRIMMING STANDARDS

The individual who is directing the operation from the ground, as well as the trimmer in the tree, shall have an understanding of tree pruning concepts and techniques and particularly the attitude or philosophy of cutting trees in the City of Carmel-by-the-Sea. The resident requesting the pruning shall also be informed of this policy.

The finished sculptural result of a pruning should be a light, minimal approach of cutting which results in a tree's silhouette to be visually altered by 1/8 to no more than ¼ at any one time (unless directed so by the Forest, Parks and Beach Director). It is the intention of the City that a tree can be physically improved by pruning without seeing a drastic change to the silhouette and structure.

Removal of foliage from a tree has two distinct effects on its growth. Removing leaves or needles reduces photosynthesis and may reduce overall growth, which can create a dwarfing effect. At the same time, growth that occurs takes place on fewer shoots. So they tend to grow longer than they would have without pruning. Since each cut has the potential to change the growth of a tree, no branch should be removed without a reason. Leave lower and inside branches evenly distributed along it. Maintain inner lateral branches to achieve even distribution of foliage along the branch. Caution must be taken not to create an effect known as lion-tailing, which is caused by removing all of the inner laterals and foliage. This displaces foliage weight to the ends of the branch and may result in weakened branch structures and breakage.

Each cut should be made carefully at the correct location, leaving a smooth surface with no jagged edges or torn bark. The correct anatomical location is just beyond the branch collar or shoulder. Large or heavy limbs should be removed using three cuts.

This directive is to be strictly adhered to in the two-block zone that is within the influence of the first-exposure-to-seacoast conditions. It is the intent to avoid further dieback of green growing branches, by not removing all of the protective dead branches that baffle the salt laden winds.

These requirements in no way guarantee quality workmanship. They are intended to satisfy the City's legal requirements and demonstrate that the company doing tree work has a basic level of professional capability and commitment to the field of arboriculture.

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Planting Landscape Trees

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The performance of a landscape tree depends a great deal on how it is planted.

In order for a tree to grow well as it matures, almost all of its roots will have to grow in the soil of the planting site. Amending the back-fill soil will seldom be beneficial. Also, amending only the back-fill merely creates another artificial container from which the roots must grow to ensure satisfactory tree growth.

If the soil at the planting site will not satisfactorily sustain a tree, extensive conditioning and modification of the entire rooting area would be needed but is seldom practical. Roots grow and develop in moist soil where oxygen is available. Roots grow little or not at all in dry soil, in compacted soil, or in soil that is saturated.

Trees will have shallow roots if planted on shallow soils with impervious layers or an underlaying shallow water table.

DIGGING THE HOLE

Plant a young tree "high", whether it is bareroot, balled or container grown. Dig the hole no deeper than necessary – approximately 2 inches less than the depth of the soil in the container or the depth of the soil ball. Planting the tree deeper or in loose soil may lead to future crown rot problems. Loose soil in the bottom of the hole will settle, causing the tree to be planted deeper than intended.

Soils compacted by construction, vehicular traffic or former agricultural use must be broken up before planting to ensure adequate air and water penetration. After loosening compacted soil by shovel or equipment, irrigate thoroughly and delay planting for two weeks to allow the soil to settle.

In soils of reasonable tilth, the planting hole should be at least twice the diameter of the container or root ball. In more compacted soil, the hole should be 3 to 4 times the diameter of the root ball. In either case, the sides of the hole should be almost vertical and roughened to provide easier root penetration. When planting bare-root trees, make the hole large enough to take the roots without crowding. Backfill the hole with soil dug from the hole or use more friable surface soil if the soil from the hole is mainly hard clods. Take care to not cover the root ball top of container grown trees because the finer-texture backfill can prevent wetting of the rootball.

FERTILIZING

Adding fertilizer, soil amendments or root stimulants to the planting hole or backfill soil is not recommended. Most nursery-grown trees are well fertilized during production and seldom respond to fertilizing at planting except in the most infertile soils.

PRUNING

The less a young tree is pruned the more total growth the tree will make. However, the growth may not be where you want it or where it will develop the most desirable structure. After planting, remove broken, dead, or diseased branches and those interfering with more desirably placed ones. Remove or cut back branches that will compete with the leader (the top-most shoot). Leave small shoots along the trunk below where you want the lowest permanent branch; remove low large branches or cut them back to 2 to 3 buds. These low shoots will protect the trunk and increase its strength. Check the tree every 2 to 3 weeks during the growing season to see how the tree is doing and to direct its growth by pinching back shoots that are too vigorous or you know you will not want later.

STAKING

Staking requirements depend on the ability of a tree to stand upright and the particular landscape situation. The more freedom the top of the tree has to move, the better it is able to develop structure to stand upright and withstand storms. NO STAKES are necessary for the many trees that can stand by themselves and that have branches to the ground or are planted where little or no protection is needed. Most conifers, trees with upright growth habits and trees planted bare root usually do not need support.

Protective Stakes are needed for trees that can stand without support but need protection from equipment, vehicles or animals. To protect trees from equipment and vehicles stakes need only be high enough to be seen so as to not be a tripping hazard. Three taller stakes with wire mesh or other covering may be needed to prevent animal damage.

Anchor Stakes are needed for trees whose trunks can hold them upright but whose roots may not be able to support the trunks upright, particularly in a wind when the soil is muddy. Usually stakes used for protection from equipment are tall enough for ties to the trunk to hold the roots securely and still allow the top to move in the wind.

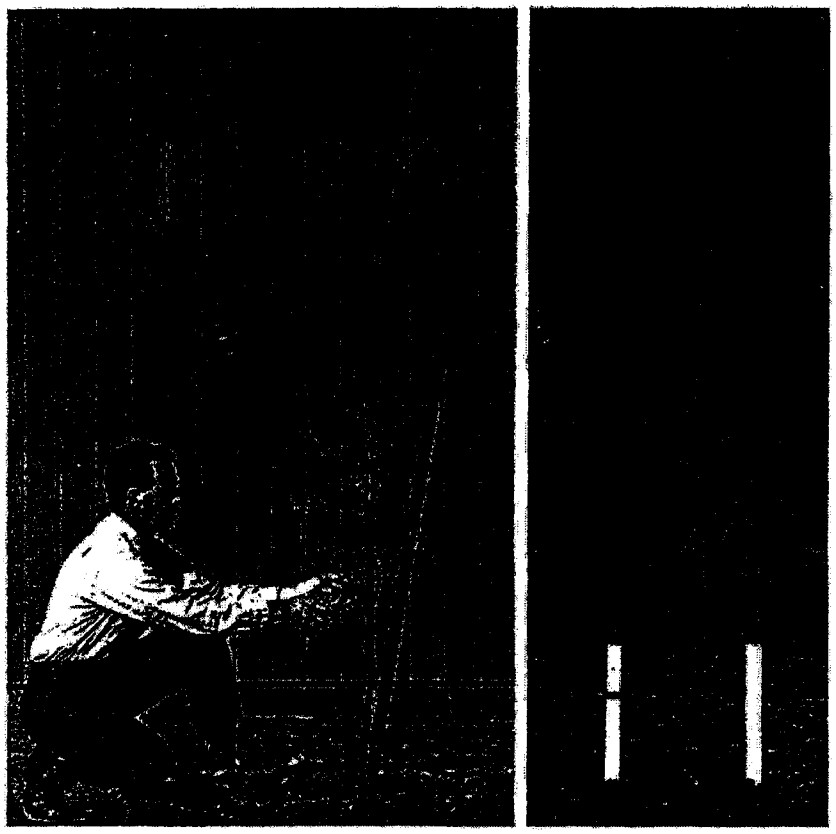
Support Stakes are required for trees unable to stand by themselves. Top support for these trees should be as low on the trunk as possible, but high enough to return the tree upright after deflection. Use 2 to 3 support stakes and if possible, tie the trunk to them at only one height to allow the trunk below the tie to bend in the opposite direction from the top during a wind. Tie material should contact the trunk with a broad smooth surface and elasticity to minimize trunk abrasion and girdling.

COMPETITION FROM TURF AND WEEDS

When trees are planted in a turf area, keep the turf at least 12 inches away from the trunk of young trees the first 2 to 4 years or longer. The growth of young trees may be retarded by turf growing to close to their trunks, even though additional water and fertilizer are applied. A 24 inch diameter of bare soil about the tree trunk will also reduce damage to young trees by lawnmowers. Mechanical damage to the trunk of young trees can have a severe dwarfing effect.

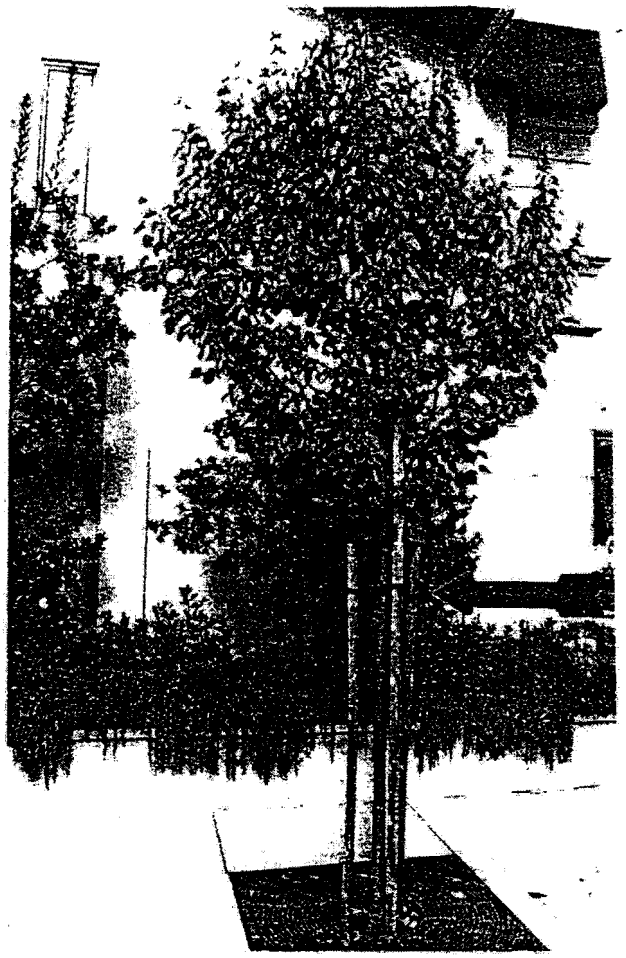
WATERING

The basin for watering the newly planted tree should be so constructed that the water will drain away from the trunk. Even though the soil is moist at the time of planting, thoroughly irrigate the tree to settle the soil around the root system. Remember that most of the root volume occupies a rather limited area, particularly through the first growing season. Lighter and more frequent watering may be needed until the roots become established in the parent soil. If the parent soil is poorly drained be careful not to overwater the tree. Once established thorough infrequent irrigation around the "dripline" (ends of branches) is most beneficial for good tree growth.

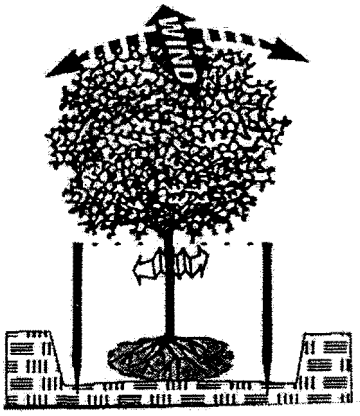


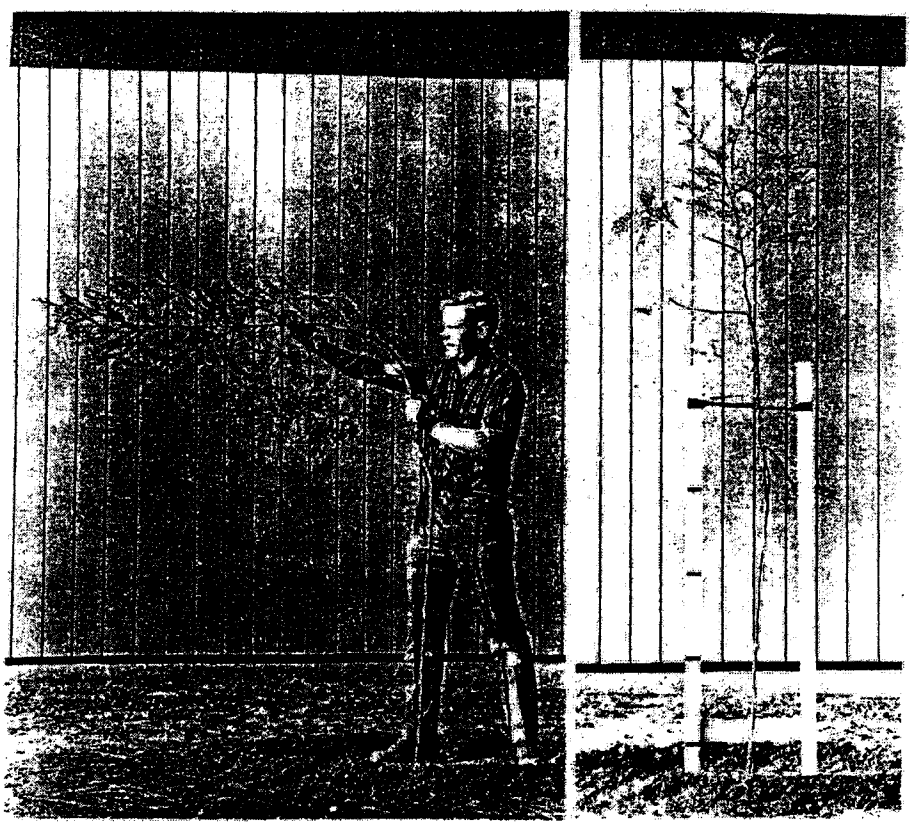
After planting, some of the laterals are removed and others bended to reduce wind resistance, balance the tree, and prevent the laterals from outgrowing the leader (left). Two stakes protect the trunk from equipment damage and allow the tree to develop proper caliper (right).

Maintaining an area of bare soil around young trees prevents competition for water and nutrients by other vegetation. Growth rate of oak tree at left, planted in a 9-square-foot area of bare soil (with resprouting weeds controlled by glyphosate), surpassed growth of tree grown in turf. Both trees were planted as one-year-old liners in tree shelters.

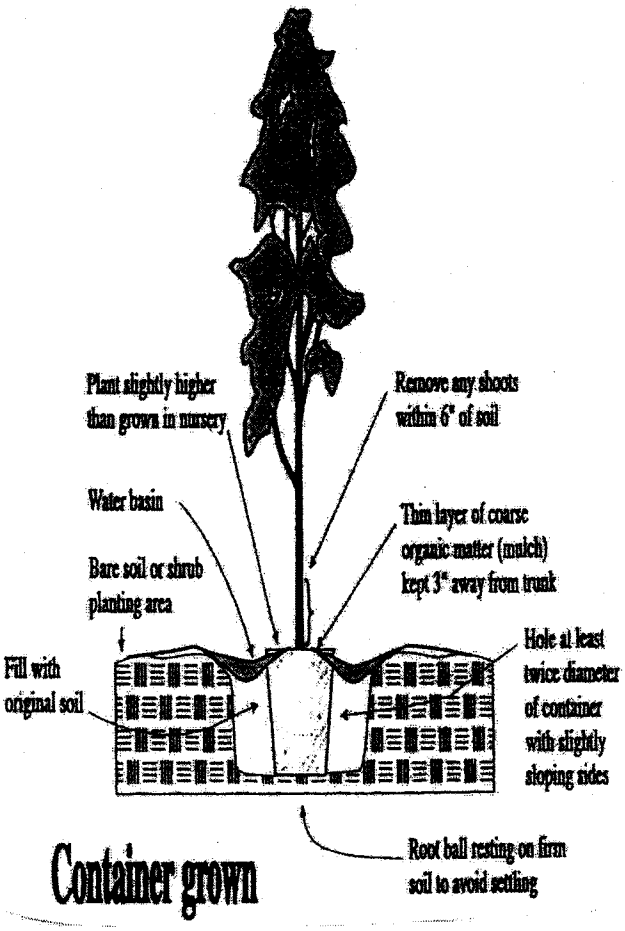


Stakes extend too high into this tree and will rub the laterals, causing injuries that encourage infestation by insects and pathogens. The tree was tied at the correct height (arrow), but support boards should be at the same height as the ties, and the stakes cut flush with boards.





Stakes should be no higher than necessary to hold the tree upright, while allowing the top freedom to move in the wind. To find the correct height, grasp the trunk with one hand and bend the top (left). If the top returns to its upright position when released, tie the trunk to stakes at the height (right).



City Trees Segment IV, 2000

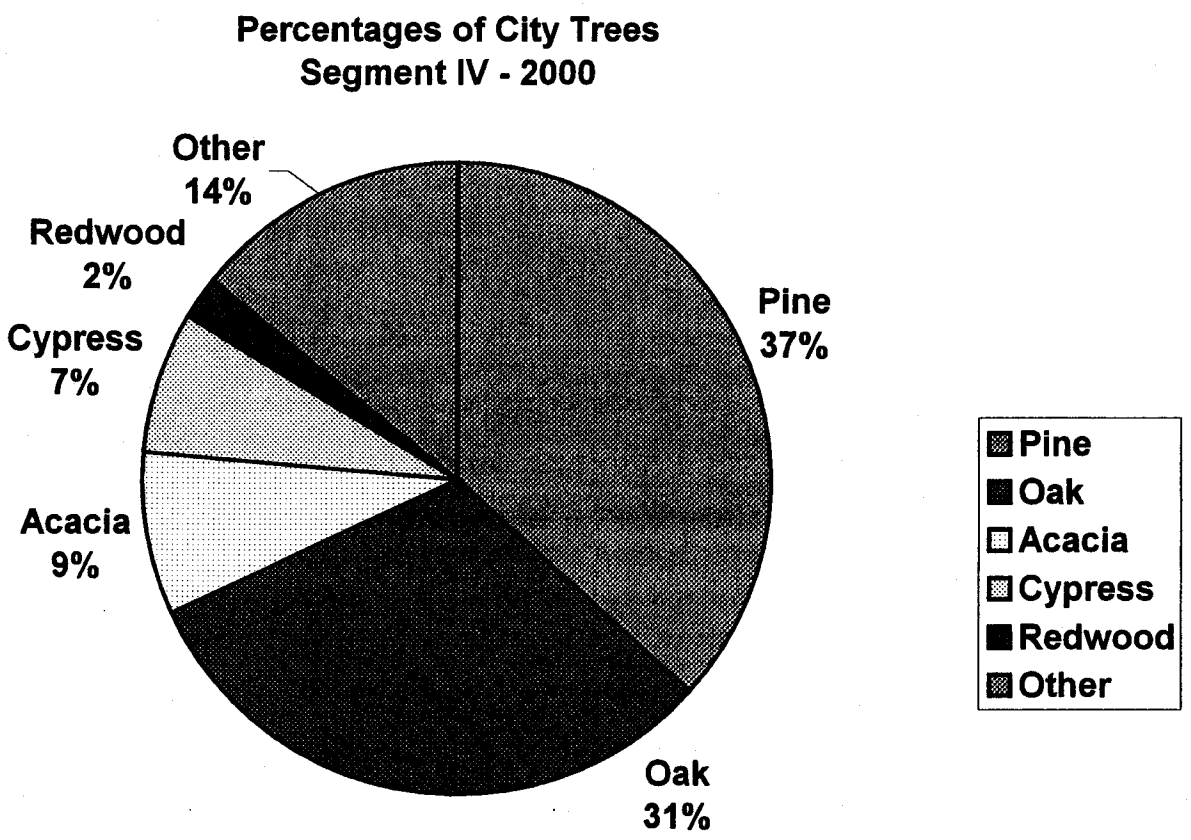
	Pine	Oak	Acacia	Cypress	Redwood	Other	Total	Percent
<1"	11	40	15	1	2	4	73	3%
1-6"	187	398	151	105	35	262	1138	49%
7-12"	103	211	16	18	6	38	392	17%
13-18"	223	65	15	12	5	12	332	14%
19-24"	131	10	6	3	2	5	157	7%
25-30"	111	0	2	2	0	2	117	5%
31-36"	55	0	0	6	0	0	61	3%
37-42"	24	0	0	3	0	0	27	1%
43+"	9	0	0	6	1	9	25	1%
Total	854	724	205	156	51	332	2322	
Percent	37%	31%	9%	7%	2%	14%		100%

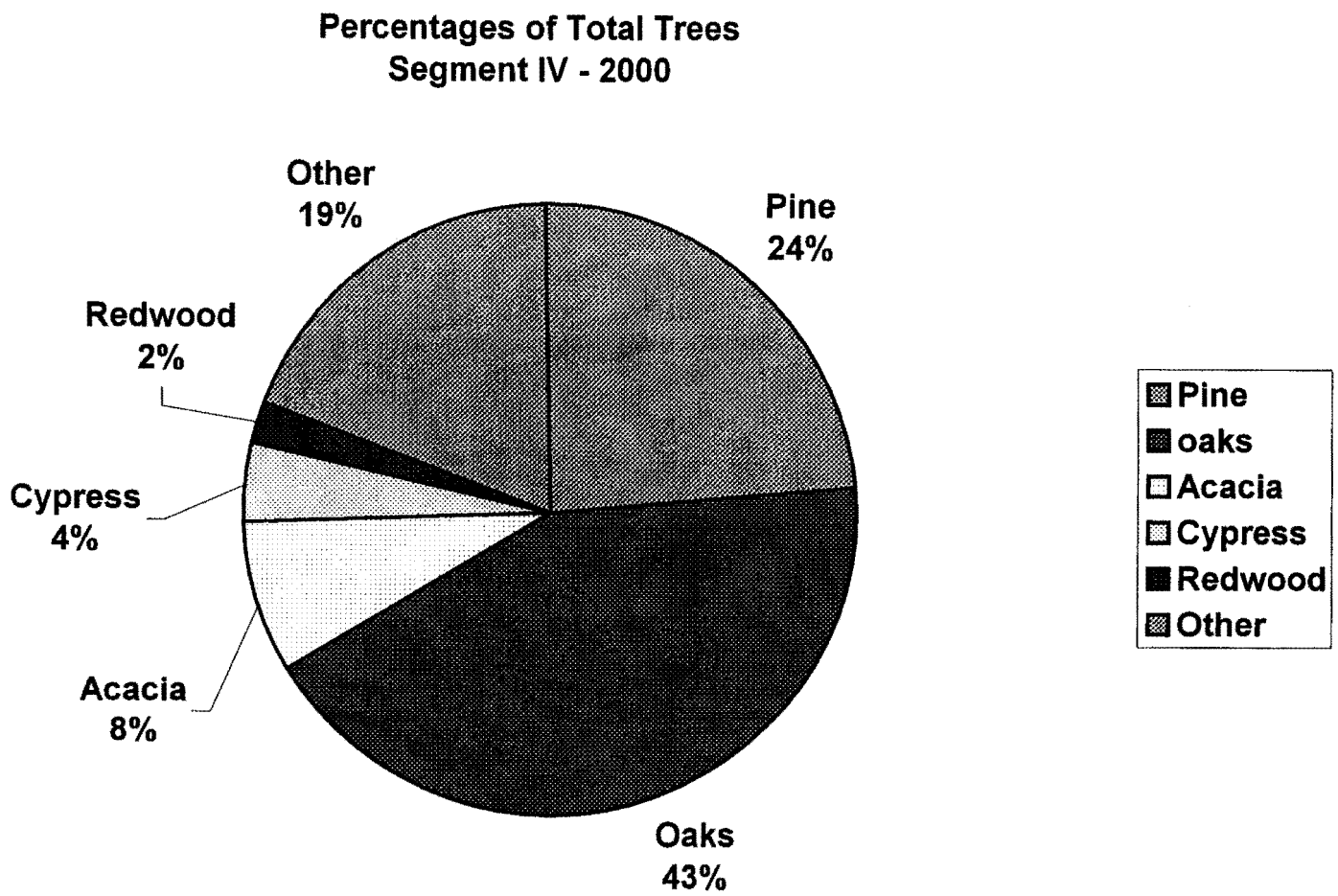
Private Trees Segment IV, 2000

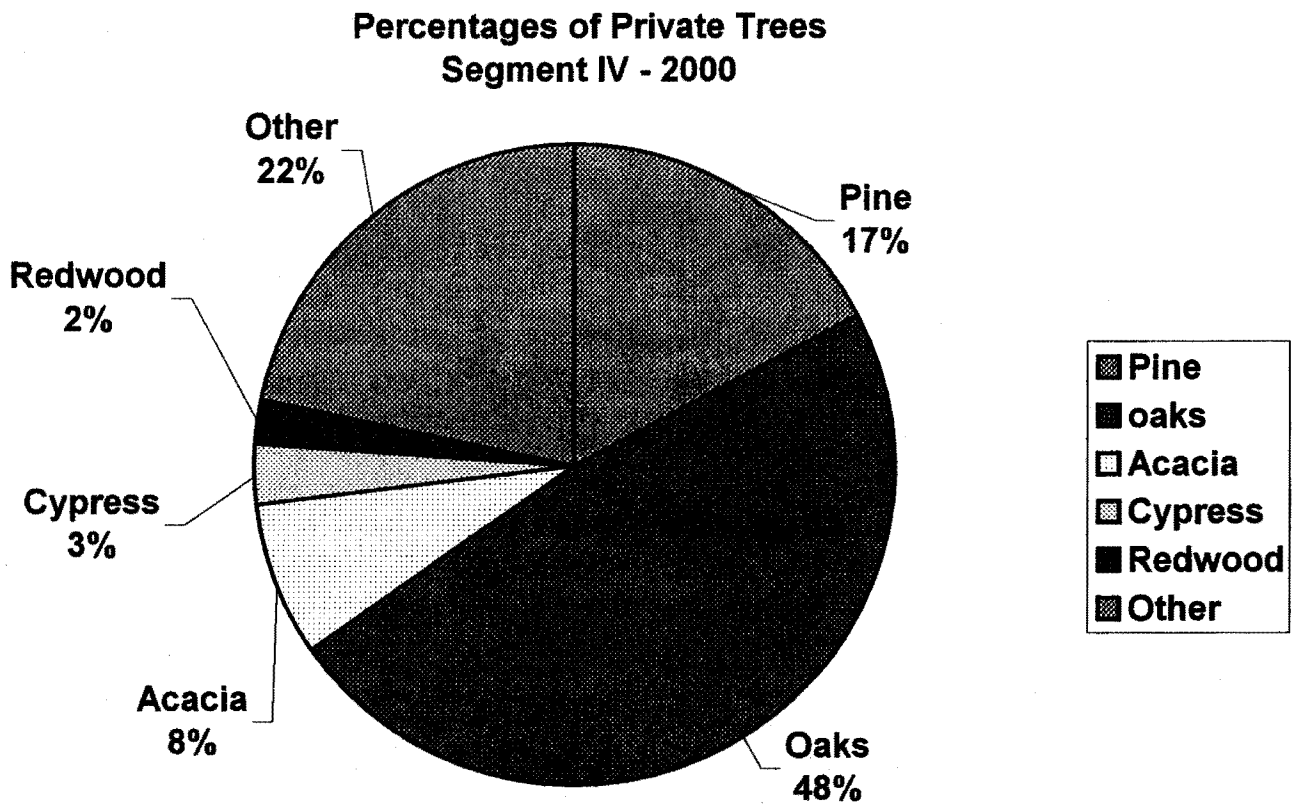
	Pine	oaks	Acacia	Cypress	Redwood	Other	Total	Percent
<1"	14	102	11	13	0	0	140	3%
1-6"	96	871	224	65	22	389	1667	37%
7-12"	123	771	70	31	15	565	1575	35%
13-18"	212	400	35	21	29	22	719	16%
19-24"	132	34	3	10	10	2	191	4%
25-30"	114	5	0	5	10	0	134	3%
31-36"	51	4	2	1	6	3	67	1%
37-42"	17	0	0	2	0	0	19	0%
43+"	6	0	0	2	3	1	12	0%
Total	765	2187	345	150	95	982	4524	
Percent	17%	48%	8%	3%	2%	22%		100%

Total Trees Segment IV, 2000

	Pine	oaks	Acacia	Cypress	Redwood	Other	Total	Percent
<1"	25	142	26	14	2	4	213	3%
1-6"	283	1269	375	170	57	651	2805	41%
7-12"	226	982	86	49	21	603	1967	29%
13-18"	435	465	50	33	34	34	1051	15%
19-24"	263	44	9	13	12	7	348	5%
25-30"	225	5	2	7	10	2	251	4%
31-36"	106	4	2	7	6	3	128	2%
37-42"	41	0	0	5	0	0	46	1%
43+"	15	0	0	8	4	10	37	1%
Total	1619	2911	550	306	146	1314	6846	
Percent	24%	43%	8%	4%	2%	19%		100%


Percentages of City Trees
Segment IV - 2000
Other
14%
Redwood
2%
Cypress
7%
Acacia
9%
Pine
37%
Oak
31%
Pine
Oak
Acacia
Cypress
Redwood
Other


Percentages of Total Trees
Segment IV - 2000
Other
19%
Pine
24%
Redwood
2%
Cypress
4%
Acacia
8%
Oaks
43%
Pine
oaks
Acacia
Cypress
Redwood
Other


Percentages of Private Trees
Segment IV - 2000
Other
22%
Pine
17%
Redwood
2%
Cypress
3%
Acacia
8%
Oaks
48%
Pine
oaks
Acacia
Cypress
Redwood
Other

The City of Carmel-by-the-Sea exists as a "Village in a Forest", and takes a great deal of pride in this fact. In order to maintain and perpetuate the forest, the City has established an application/permit process regarding tree removal and tree pruning on public and private property. Upon receipt of a completed application, Forest, Parks, and Beach Dept. staff and the Forest and Beach Commission use the following criteria to assess and render a decision:

CRITERIA/CONSIDERATION FOR REVIEW OF TREE REMOVAL/PRUNING APPLICATIONS

SAFETY: Does the tree have any structural impairment that is likely to cause tree failure?

HEALTH: Are insects or disease present that indicate the tree is declining and has a very limited life expectancy?

SPECIES: Is this tree an indigenous species? Is it included on the Commission's recommended tree list? Is the tree compatible with the forest character of the neighborhood?

CONSTRUCTION IMPACTS: Is the tree likely to survive the impacts of construction activities? Are any special protection measures appropriate?

TREE DENSITY: Will the number and mix of trees on this site and/or the neighborhood be consistent with the City's recommended tree density if this tree is removed? If not, are there planting opportunities to mitigate the tree's loss and will the recommendation be met on the site?

OTHER TREE AFFECTS: Will the removal of this tree adversely or positively affect other trees on this property or neighboring properties? Consider crowding, competition, wind buffeting, light and privacy screening.

SIGNIFICANCE: Is there some characteristic or combination of characteristics that cause a tree to be of such value that its loss will have a detrimental effect on the forest and residents will be denied the amenities this tree affords them? Are there other significant trees on the site?

PROPERTY DAMAGE: Are damage alleviation measures (notch the eaves, repair the deck or driveway, foundation repair, etc.) available to repair the damage and retain the tree? Damage to patios, walkways, driveways, decks, eaves and outbuildings is not always considered to be significant for tree removal alone. Leaf litter or being messy is not considered significant cause for removal.

NEW CONSTRUCTION: Is there a compelling reason to impact the significant tree(s)? (During evaluation of Design Guidelines Track 2 and Track 3 projects)

CITY OF CARMEL-BY-THE-SEA

POLICY AND PROCEDURE DATA SHEET

Policy/Procedure No.: C99-01 Department of Origin: City Council
Effective Date: 12 January 1999 Authority: Resolution No. 99-07

Revision Date(s):

SUBJECT: Emergency Tree Removal

RESPONSIBLE PARTY: Department of Forest, Parks and Beach

PURPOSE: To establish a protocol for City staff to administer requests for tree trimming and/or removals during emergency situations

POLICY/PROCEDURE:
It is recognized that public safety is the first priority during any hazardous event and those trees growing on both public and private property may threaten the public safety and may need immediate emergency attention during such events. In the event that the staff of the City's Forest, Parks and Beach Department, whose first charge during such situations is to tend to public trees, is unable to respond in a timely manner to a resident's call for assistance pertaining to a private tree, the following procedure shall be followed:

1. A resident's call to the Forest, Parks and Beach Department will be received by the staff on duty or forwarded to the City's Emergency Operations Center. The matter will be scheduled for staff attention or the resident will be referred to a tree service from an official City list of those tree services with a valid City business license that employ a Certified Arborist.

2. After examining the tree(s) in question, the Certified Arborist must contact the Director of the Department of Forest, Parks and Beach or her/his designee for authorization before action is taken.

3. If the tree is removed, an after-action report (submitted on a form supplied by the City) must be submitted to the City by the Certified Arborist who has approved the removal. The report will include the following information: a) tree location; b) species; c) diameter at breast height; d) description of the health and condition of the tree; and e) reason for removal.

4. The property owner/resident from whose property the tree was removed will be responsible for the planting and maintenance of a replacement tree(s), the size, species, and location of which will be determined by the Director of the Department of Forest, Parks and Beach or her/his designee.

RESCINDED: (Date)	CITY ADMINISTRATOR APPROVAL OF DEPARTMENTAL POLICIES: Date: Initial:

CITY OF CARMEL-BY-THE-SEA

POLICY AND PROCEDURE DATA SHEET

Policy/Procedure No.: C91-05 Department of Origin: Forest and Beach

Effective Date: 5 February 1991 Authority: Resolution No. 91-27

Revision Date(s): 10 December 1996 (Resolution No. 96-159)

SUBJECT: Recommended replacement trees and planting requirements for new houses/substantial alterations/tree removals

RESPONSIBLE PARTY: As fully set forth in the policy document, attached.

PURPOSE: As fully set forth in the policy document, attached.

POLICY/PROCEDURE: As fully set forth in the policy document, attached.

RESCINDED: (Date)

CITY ADMINISTRATOR APPROVAL OF DEPARTMENTAL POLICIES:
Date: _____ Initial: _____

CARMEL-BY-THE- SEA
POLICY C91-05
TREE DENSITY PER LOT

RESPONSIBLE PARTY:
This policy will be utilized by the Forest and Beach Commission to determine replacement plantings when a tree is proposed for removal. Planning staff and Forest, Parks and Beach staff shall utilize the policy to determine new plantings in conjunction with new houses and substantial alterations. Staff shall forward a recommendation to the Planning Commission based on this policy.

PURPOSE:
To protect, conserve and enhance the unique natural beauty and irreplaceable natural resources of Carmel-by-the-Sea. To ensure the future of our urban forest by the preservation and planting of native/indigenous trees on private property while considering the diverse vegetation existing within the community. The City recognizes these differences and will consider them when applying this policy. The City also recognizes that this policy is a recommended tree density per lot intended to achieve a mixed, healthy forest, taking into consideration individual site constraints and opportunities.

POLICY/PROCEDURE:
To implement General Plan Goal 6-1, "To protect, conserve, and enhance the unique natural beauty and irreplaceable natural resources of Carmel and its sphere of influence; to conserve Carmel's available water sources; and to protect scenic routes and corridors." The recommended replacement trees and plantings are:

LOT SIZE (SQUARE FEET)	UPPER CANOPY TREES	LOWER CANOPY TREES
Up to 4,000	3	1
4,001—6,000	4	3
6,001—8,000	5	4
Over 8,000	As determined by the Forest and Beach Commission	As determined by the Forest and Beach Commission

Upper Canopy Trees:	Monterey pine, Monterey cypress, coast redwood, Douglas fir, Bishop pine
Lower Canopy Trees:	Coast live oak, liquidamber, London plane, sycamore, fernleaf, Catalina ironwood (Also see "Approved Tree List for Urban Forest.)

CITY OF CARMEL-BY-THE-SEA

POLICY AND PROCEDURE DATA SHEET

Policy/Procedure No.: C89-35 Department of Origin: Forest and Beach

Effective Date: 24 February 1984 Authority: Administrative memo

Revision Date(s): _____

SUBJECT: Firewood - distribution of surplus wood

RESPONSIBLE PARTY: City Forester

PURPOSE: To implement a firewood policy that will both serve municipal facilities and Carmel residents and be workable within City resources.

POLICY/PROCEDURE: As set forth fully in the policy document, attached.

RESCINDED: (Date)

CITY ADMINISTRATOR APPROVAL OF DEPARTMENTAL POLICIES:
Date:_____ Initial: _____

MEMORANDUM

TO: Doug Schmitz, City Administrator

FROM: Gary Kelly, City Forester

SUBJECT: Firewood Policy

DATE: 24 February 1984

With the hope of implementing a firewood policy that will both serve municipal facilities, Carmel residents and be workable with our resources, I have given considerable thought to this matter. There are a few changes to the draft policy of 31 October 1983. I will explain the reasons for these changes and hope that you will agree with them.

1. Wherever practical, wood will remain on the site it is cut for use by residents adjacent to the tree that is being pruned or removed.

2. Wood that cannot be left at the site will be delivered to Carmel-by-the-Sea residents. City residents, who need firewood, may call the Department of Public Works to have their name placed on a list. They will be phoned in the order that their name is listed, notifying them when wood will be delivered. If they cannot be contacted, the next person on the list will be phoned. Only wood that can be handled by residents, 18" in diameter or less, will be delivered. (Delivering wood is preferred to allowing people to pick it up for two reasons; we do not have a storage area that could be managed for this type activity and the liability created by people loading wood on City property is eliminated.)

3. Wood that is infected by insects will be condemned by the City Forester. This wood must be hauled to an appropriate site and disposed.

4. Wood that is not usable by municipal facilities or residents because of size or species may be taken by City employees after Public Works close of business. (Since this wood is not usable by members of the City it is in the City's best interest to have it hauled away on a daily basis. We do not have a facility to store any firewood.)

I would like to announce this Policy in the Pine Cone so that we may compile a list of people needing wood. I will also note that amounts and species of wood will vary.

City of Carmel-by-the-Sea
Policy and Procedure Data Sheet

Policy/Procedure No. C90-05 Department of Origin: Forest and Beach

Effective Date: 10 July 1990 Authority: Resolution No. 90-83

Revision Dates:

SUBJECT: DEMOLITION PERMIT REVIEW POLICY

RESPONSIBLE PARTY: City Forester

PURPOSE: To ensure the protection and preservation of trees on sites where an existing structure or part thereof is to be demolished.

POLICY/PROCEDURE:

Prior to the issuance of a demolition permit:

1. The applicant shall submit to the Building Official a plot plan with a complete tree inventory of the site, to include species and size.

2. The City Forester shall inspect the site to verify that proper tree protection is in place.

RESCINDED: (Date):

CITY ADMINISTRATOR APPROVAL OF DEPARTMENTAL POLICIES:

Date: _____ Initial: _____

CITY OF CARMEL-BY-THE-SEA

POLICY AND PROCEDURE DATA SHEET

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Policy/Procedure No. C97-02 : Department of Origin: Administration

Effective Date: 12/9/97 Authority: Resolution No. 97-143 .

Revision Date(s):

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SUBJECT: Policy and Standards for Public Way Design

RESPONSIBLE PARTY: City Administrator/Planning Commission

PURPOSE: To establish guidelines for design of public way.

POLICY/PROCEDURE: As fully set forth in the Policy document attached.

RESCINDED: (Date)

CITY ADMINISTRATOR APPROVAL
OF DEPARTMENT POLICIES:

Date:---------- Initial----------

CITY OF CARMEL-BY-THE-SEA
POLICY AND STANDARDS
FOR
PUBLIC WAY DESIGN

STATEMENT OF PURPOSE

The purpose of this policy is to identify objectives and to set forth guidelines and standards for review of design (including placement), construction or reconstruction of projects that include sidewalks, pathways, handicapped ramps, curbs, gutters, tree planters, mini-parks, landscaping, utilities, street signs and other amenities located on public ways within the City of Carmel-by-the-Sea. It is the intent of the following policies and guidelines to provide direction in using safe, varied and diverse materials, colors and design approaches that implement the General Plan.

DESIGN REVIEW PROCESS:

For public and private projects requiring Planning Commission review, each municipal department responsible for elements of project design shall review proposed plans and provide comments and recommendations to the applicant or to the Department sponsoring the project. These recommendations shall be forwarded to the Planning Commission at the time of its review. For those projects not requiring Planning Commission review, these policies, standards and guidelines shall be used by the City Administrator and appropriate staff as a basis for design and review of public or private projects.

The City Administrator may give final approval for public projects valued at less than the administrative approval authority limits established by policy of the City Council and/or the California Public Resources Code if they are consistent with the standards in this policy. The Planning Director and any other Municipal Department appropriate to the project shall be advisory to the City Administrator on such projects.

The City Council shall give final approval for all public projects valued greater than the administrative approval authority limit and/or the limits established by the California Public Resources Code. The Planning Commission shall be advisory to the City Council on such projects when they will be visible to the public, located in the public way and represent a change from existing design conditions.

When the City Administrator believes that the project may (1) conflict with these standards, (2) raise issues warranting a policy discussion or (3) would result in a significant change in design character or material, the matter shall be referred to the Planning Commission for review and comment regardless of project cost.

DESIGN GUIDELINES

A. Sidewalk:

Sidewalks shall be constructed of safe, durable materials that are not slippery when dry, wet or worn and shall be selected to promote a limited variety of different sidewalk treatments. Materials for sidewalk surfaces should enhance the village character for the pedestrian and allow for percolation of water into the soil to enhance the urban forest. Standard urban sidewalk treatments such as exposed aggregate (unsafe), blacktop and plain concrete (unattractive) should be avoided.

Sidewalks should not appear excessively uniform. Some variety, or break in paving shapes or colors can help in preserving an informal, unplanned visual appearance. To achieve a balance between excessive monotony and excessive variety, sidewalks should incorporate occasional changes in materials or color at intervals between 200 and 300 feet in length. Changes should occur at natural breaks such as intersections, driveways and similar features. Materials and colors selected should play a subtle, background role and should not compete with adjacent buildings by calling attention to them. To achieve this, sidewalks should:

- Be constructed from sand-set payers that facilitate percolation using square, rectangular, hexagonal, cobble or creased-keystone shapes. Non-creased keystone and wave edged payers should be avoided. (See Figure #1)

- Use earthen, warm hues (tan, brown, warm gray). Saturated colors (solid brick red, etc.) and cool hues (green, blue, cold gray) should be avoided.

- Use a single hue or a mix of not more than two similar hues in paving areas.

- Avoid the creation of patterns through the arrangement of payers. Changes to colors or patterns shall not be used to identify the entrances to driveways, doorways or courtyards.

- Use colored concrete, or driveway payers, for commercial driveways where the use of standard sand-set payers is impractical. Driveway colors and/or materials should match at least one of the adjacent sidewalk designs.

- Remain the same bordering large areas (e.g. Devendorf Park, Sunset Center) where there are no storefronts.

Policy and Standards
Design Improvements to Public Ways
Page Three

B. Pathways and Footpaths:
Informal pathways and footpaths of decomposed granite should be considered the preferred design in all areas that form a transition between the commercial and residential (R-1) districts. Asphalt may be used in specific areas where drainage or erosion-control problems make decomposed granite impractical. The width of pathways and footpaths should not exceed four to five feet of available public ways. Randomly placed landscaping and trees should predominate in these areas to emphasize the transition from the urban to the residential.

C. Sidewalk Ramps:
Access to sidewalks at every intersection must be handicap accessible ramps to meet Title 24 California State Accessibility Standards for the physically impaired as depicted in Title 24 Standards Diagram (See Figure 2). Ramps should be constructed with materials and in colors that blend harmoniously with adjacent sidewalk materials.

D. Furniture in the Public Way:
The Planning Commission shall review the design and siting of furniture in the public way (e.g. benches, newspaper racks, cigarette butt containers, fountains, drinking fountains and tables). The Commission will determine whether a location or placement is appropriate based on demonstrated need, public safety, pedestrian flow, access to parked vehicles, existing structures located in the sidewalk area, the architecture of the area, location of underground utilities and the type of business that the furniture will impact.

Furniture shall be purchased, installed and maintained by the party making the request. The construction material shall be appropriate to the area, and natural appearing using wood, metal or recycled products. All street furniture shall require the property owner to obtain an encroachment permit and maintain insurance coverage acceptable to the City consistent with all City policies.

The City Administrator, following review and comment by the Director of Community Planning and Building and the City Forester, may approve installations of the City's standard wood-enclosed trashcans. The Planning Commission must approve the location of new standard light fixtures.

Policy and Standards
Design Improvements to Public Ways
Page Four

E. Curbs and Street Gutters:
Throughout most of the Residential District, rolled blacktop berms are the preferred design for street gutters. Concrete and cobblestone curbs should be restricted normally to the Commercial District except when required for safety or drainage. (See Figures #3 and #4, Stone and Concrete Curb and Gutter and Blacktop Rolled Berm).

F. Sidewalk Street Trees:
Sidewalk street trees are those planted in spaces on existing sidewalks. Sidewalk street trees are encouraged. The exact number of trees, their species, and location shall be determined by the City Forester depending on site conditions. Sidewalk street trees should be located near the head of, and adjacent to, parallel parking spaces with the trunk of the tree located 4 1/2 feet back from the head of the parking space. (See Figure #5, typical parking stall with planter). These specifications have been designed so that these sidewalk street trees will not be injured by cars maneuvering in parking stalls and not block car doors being opened on the sidewalk side. For trees at the curb line there should be at least 4-feet between the trunk and the facing building or planters in front of the building.

All tree planters should be made as large as practicable so that additional landscaping can be incorporated into the planters. There should also be no contrasting edging around the planter, rather the sidewalk material should frame and be flush with the exposed earth around the tree. Root barriers to prevent root damage to streets, gutters and sidewalks will be installed as directed by the City Forester.

G. Mini-Parks:
A mini-park protrudes into the street from the curb line or is in the Street. Landscaping in mini-parks should include native, drought resistant plants and/or trees. If trees or large shrubs are included, they should not be used at the corner of a street where they could cause a safety hazard by blocking views of cross traffic. The design of mini-parks shall be consistent with the standards in the Forest and Beach Management Plan (See Figure #6). All new mini-park installations shall be reviewed for recommendations by the Staff Traffic Committee and approved by the Planning Commission with consideration of:

Policy and Standards
Design Improvements to Public Ways
Page Five

- Appropriateness of location
- Impact on parking resources
- Impact on traffic and pedestrian safety
- Drainage and maintenance issues including street-sweeper access

H. Street Drainage:
Whenever possible, open drain channels for curbside drainage should be used through planter areas rather than using subsurface pipes. This avoids pipes being clogged with debris and is easier to maintain. See Figure #7.

I. Irrigation:

1. **Drip and Low-Flow Systems**--All landscaping, sidewalk street trees and mini-parks will have drip or low-flow irrigation to help keep vegetation alive and cut down on maintenance requirements by City personnel.

2. **Cistern Recycling Systems**--When feasible, public projects should provide cistern system drainage to capture storm water runoff for irrigation of on-site and public way landscaping area. These systems will:

- Reduce demands on the City's public potable water resources
- Protect municipal water allocations during periods of drought
- Reduce impacts on the City's overtaxed storm drain systems.

3. **Gutter/Downspout Gravity Irrigation for Street Tree Planters**--When feasible, storm water runoff from roofs into roof gutters, downspouts, under sidewalks and exiting at curb gutters should be intercepted and used to irrigate trees in sidewalk planters. Storm water runoff redirected for irrigation purposes reduces the total volume of water entering the municipal storm drain system from a commercial project. (Refer to Figure #8, Detail A, and Figure #9, Cross-sectional Layout Plans for Gutter/Downspout Gravity Irrigation.)

J. Utilities

Utility boxes shall be located in garages, driveways or in planter areas on private property except where this is impractical. Utility boxes located in the public right of way shall be incorporated into sidewalk planters with sufficient additional space to establish screening-vegetation such as ground cover and shrubs when practical. If neither of these alternatives is feasible, utility boxes may be located in a paved area of the street or the sidewalk as close to the curbline as possible and may use standard nonskid utility covers.

K. Street Signs

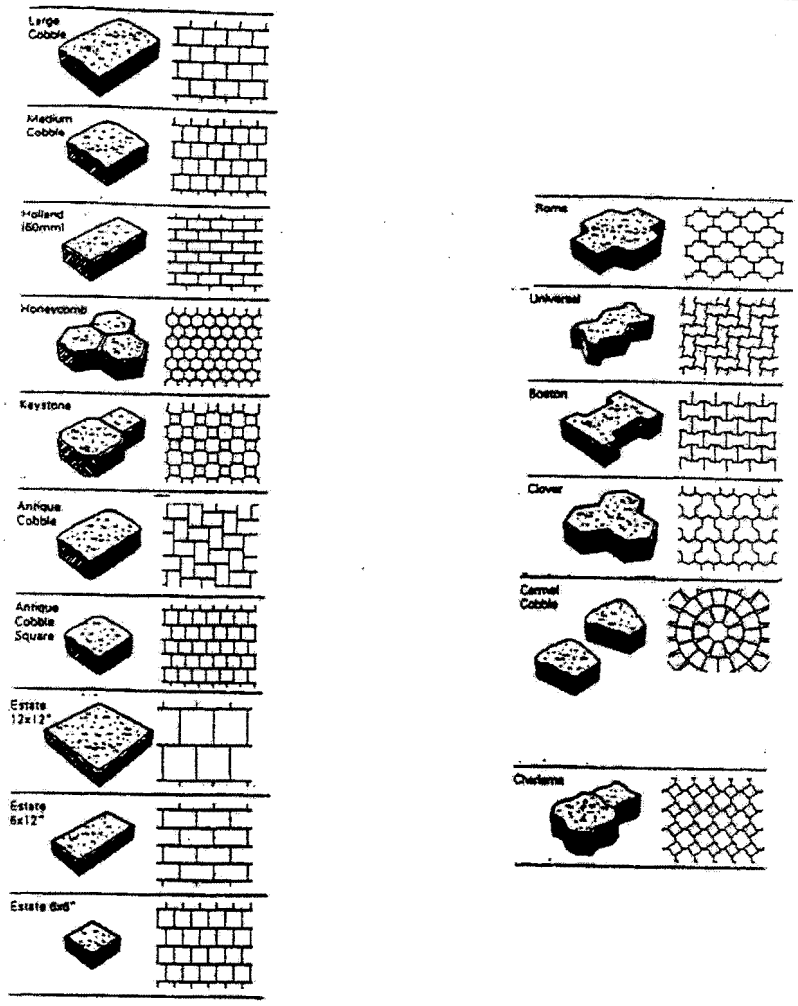
1. **Traffic Control Signs**--The historic and traditional design for stop signs in Carmel uses a 2" diameter, non-reflective, white-painted, metal pole with a four-sided-box, street-name sign mounted mid-way on the pole. Traffic control signs (e.g. stop signs, speed limit signs, warning signs) shall also conform to the design, color and shape requirements of the California Vehicle code.

2. **Stop Signs Combined with Street Name Signs--**Metal pole mounted stop signs combined with street name signs is the preferred method of identifying streets. A four-sided wood box shall be constructed around the steel pole consistent with Figure #10. The wood panels and metal pole shall be painted with a non-reflective white background and lettered with the street name using non-reflective forest green paint and vertical block-stencil lettering. The metal stop sign shall have no wood backing and no wood frame or other appurtenances. .

3. **Stand-alone Post Signs**--Stand-alone street name sign posts (not combined with a stop sign) may be used when there is no stop sign at the intersection or the stop sign location is not suitable for identifying the street names. Stand-alone posts also are the appropriate design to use for No Parking signs.

Stand-alone Street Name or No Parking signposts shall be constructed of 4" X 4" solid lumber of sufficient length to project 4 feet in height from grade. The top of each post shall be cut to a 4-facet taper (see Figure #11). Posts shall be painted non-reflective white except for a 4-inch cap and a 7-inch pine tree emblem at the base, that shall be painted forest green. Each vertical face of the post shall be painted with the corresponding street name (or "no parking" text) using non-reflective, forest green paint and vertical block-stencil lettering.

Appendix F-5

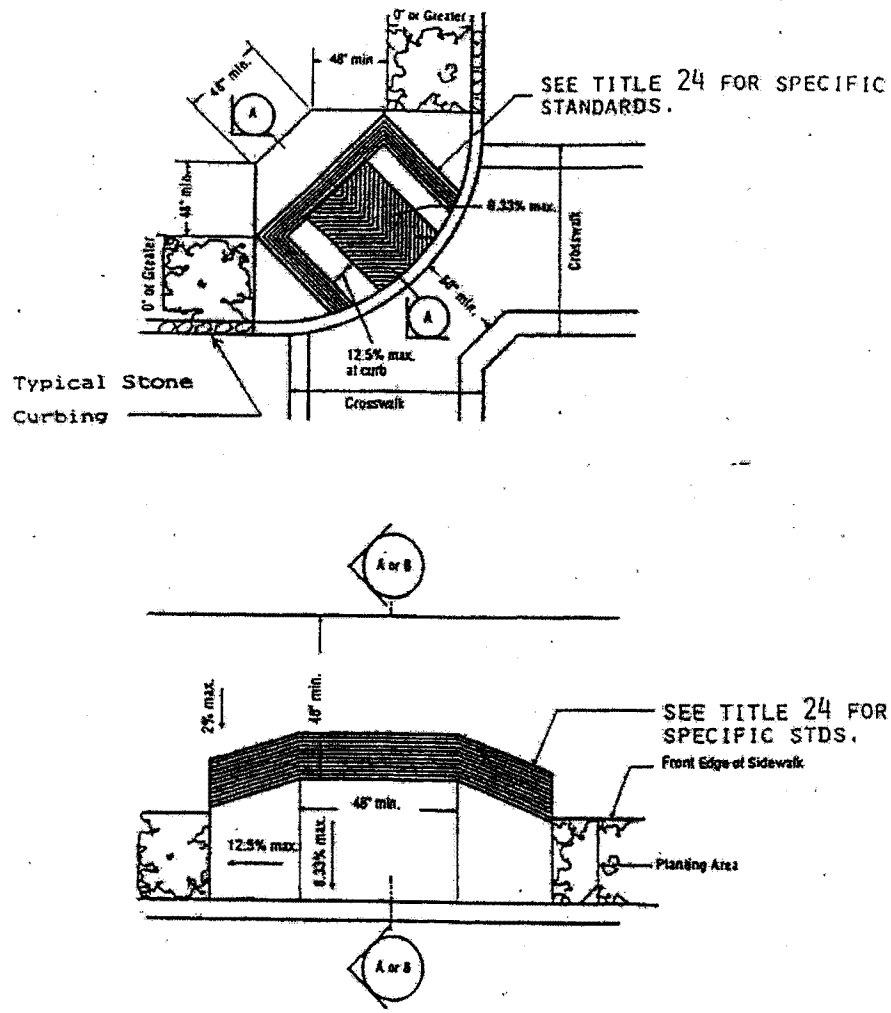


CITY OF CARMEL-BY-THE-SEA

FIGURE-1

PAVING STONE DETAILS

Appendix F-5



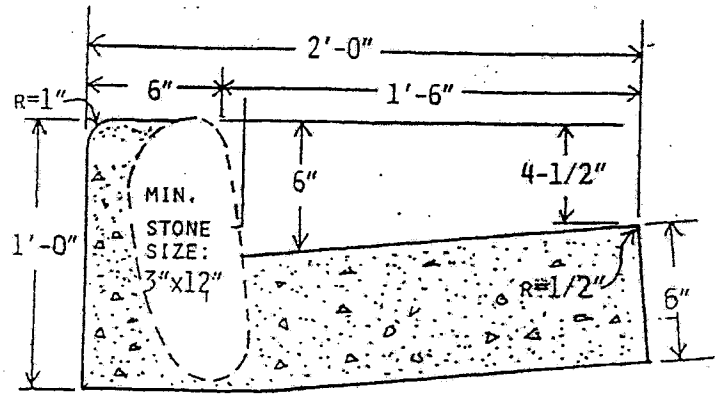
CITY OF CARMEL-BY-THE-SEA

FIGURE-2

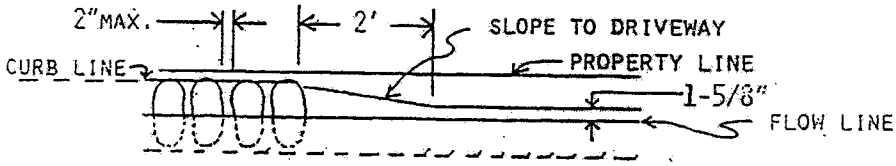
STANDARD SIDEWALK RAMP
FOR TITLE 24 COMPLIANCE

Appendix F-5

NOTE: USE CLASS A CONCRETE.



CURB DETAIL



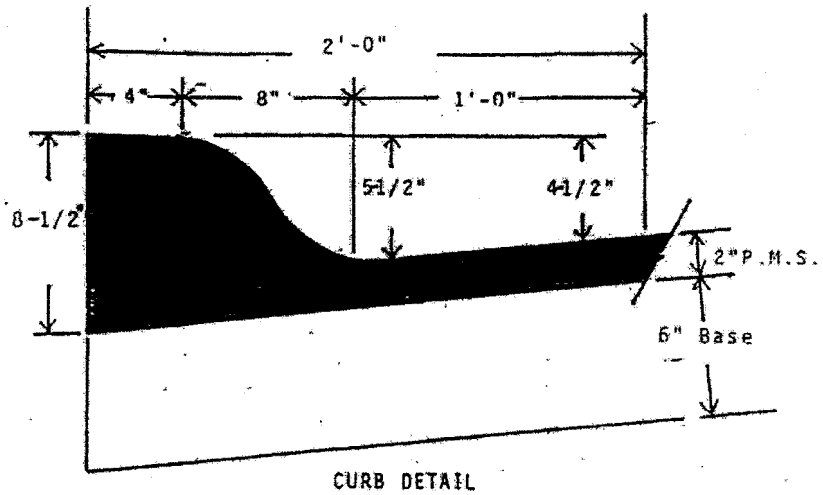
DRIVEWAY SLOPE
FRONT VIEW

CITY OF CARMEL-BY-THE-SEA

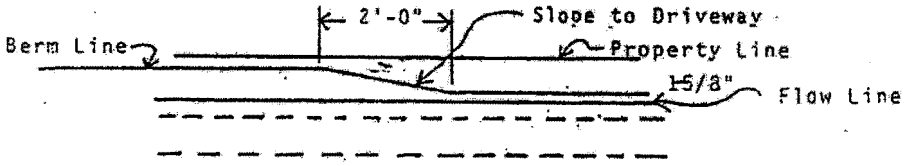
FIGURE-3

STONE CURB AND GUTTER DETAIL

Appendix F-5



CURB DETAIL



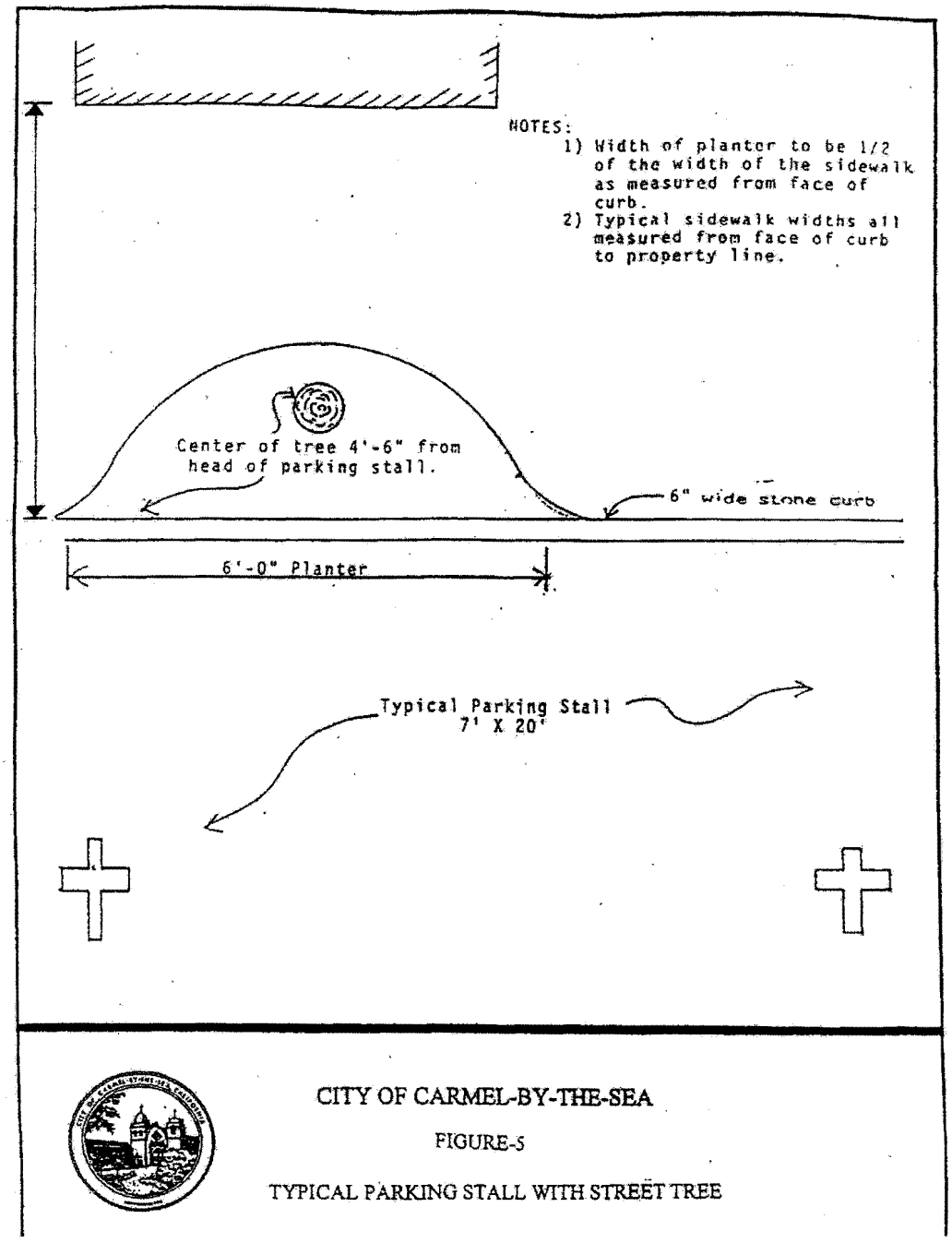
DRIVEWAY SLOPE
FRONT VIEW

CITY OF CARMEL-BY-THE-SEA

FIGURE-4

ROLLED BLACKTOP BURM DETAIL

Appendix F-5

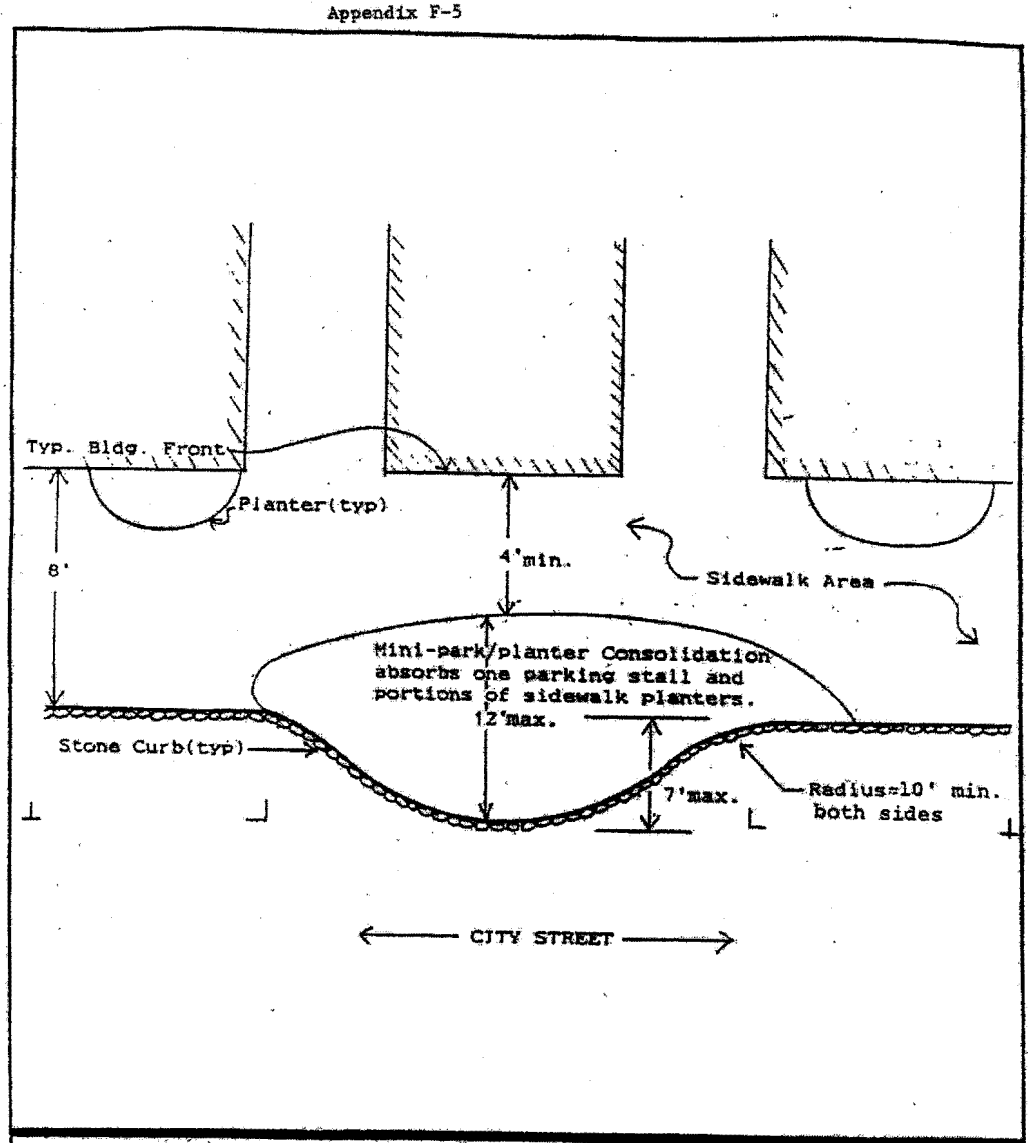


CITY OF CARMEL-BY-THE-SEA

FIGURE-5

TYPICAL PARKING STALL WITH STREET TREE

Appendix F-5

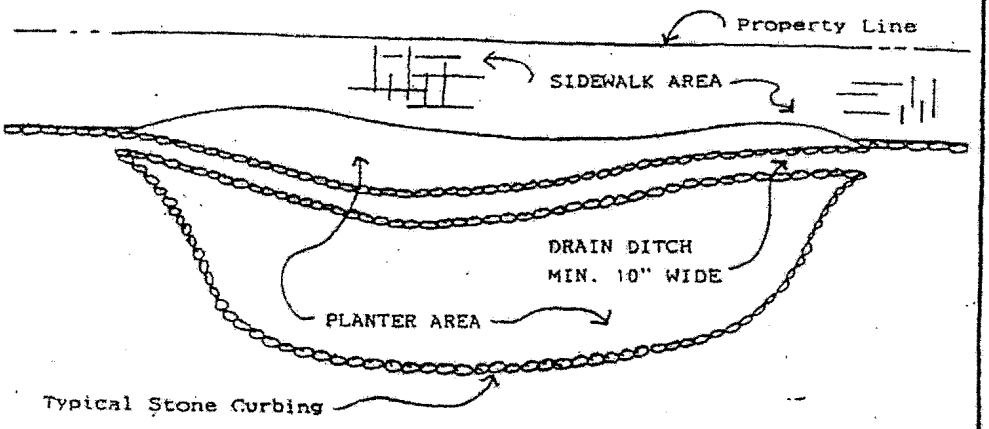


CITY OF CARMEL-BY-THE-SEA

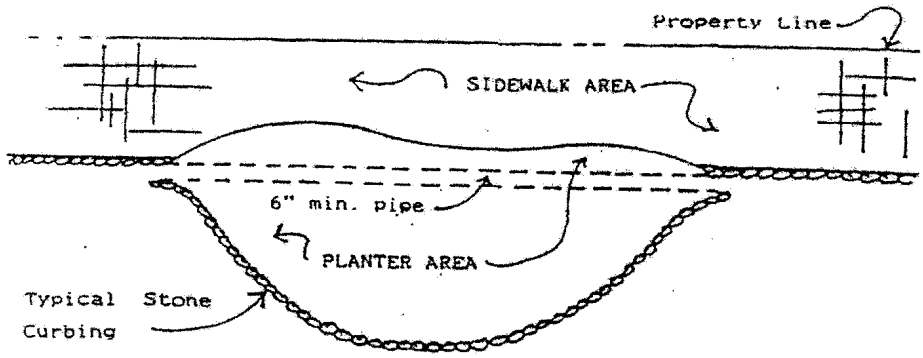
FIGURE-6

MINI-PARK LAYOUT

Appendix F-5



OPEN CHANNEL DRAINAGE (PREFERED)



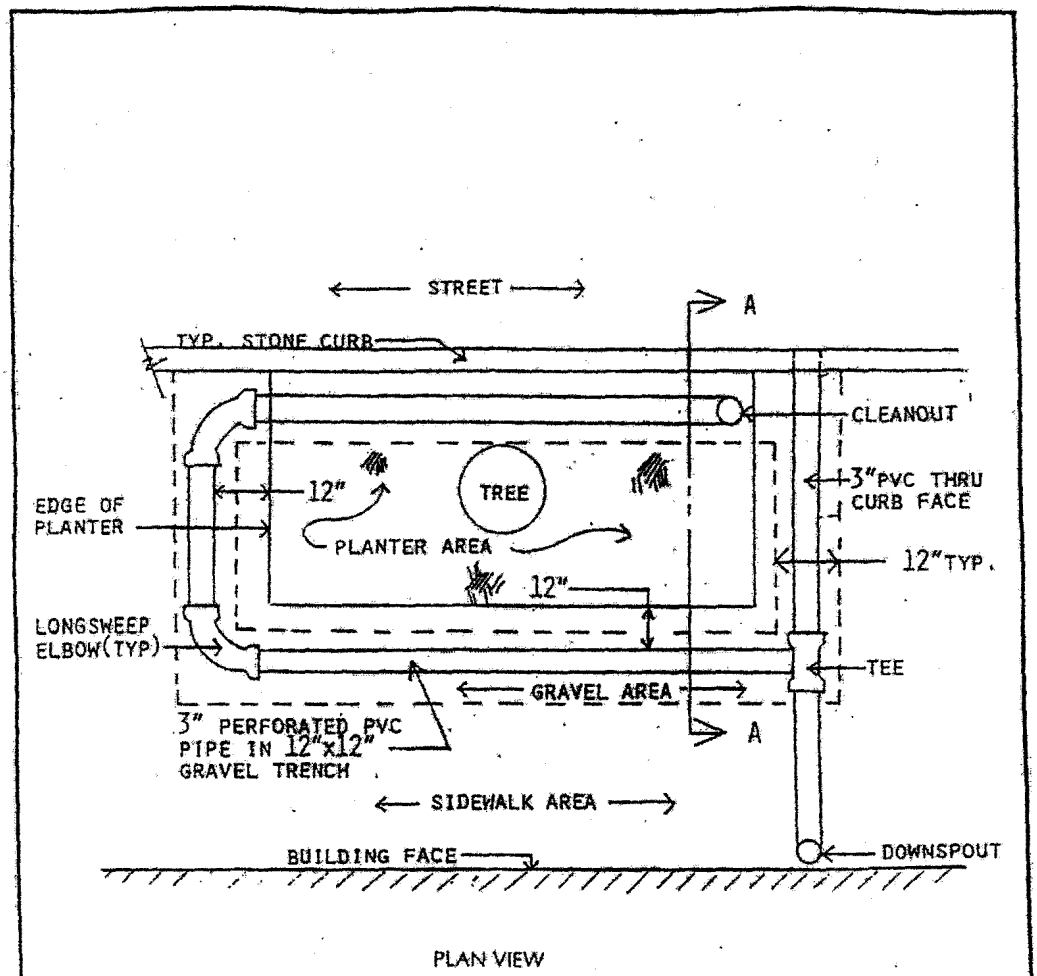
CLOSED PIPE DRAINAGE (LESS DESIRABLE)

CITY OF CARMEL-BY-THE-SEA

FIGURE-7

STREET DRAINAGE FOR MINI-PARKS

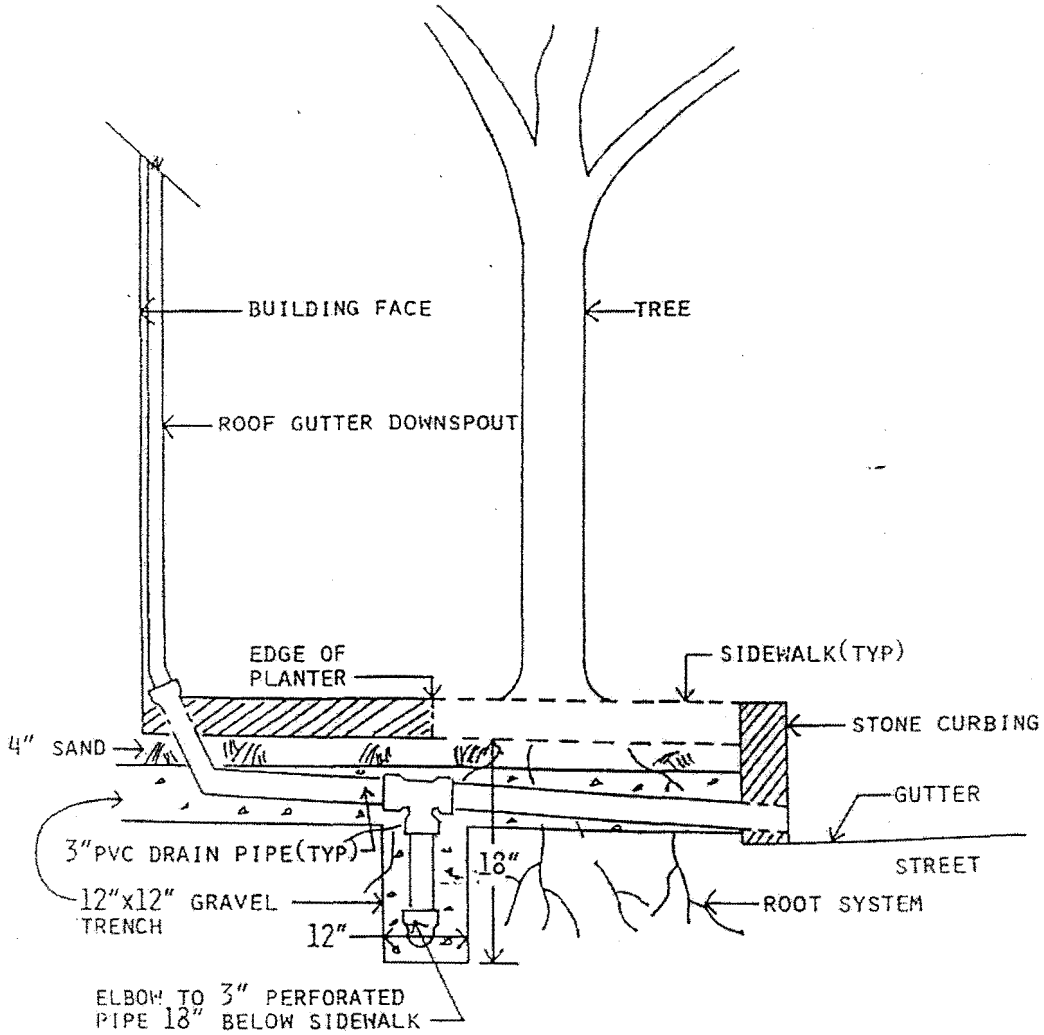
Appendix F-5



CITY OF CARMEL-BY-THE-SEA

FIGURE-8

DOWNSPOUT GRAVITY-IRRIGATION
LAYOUT FOR STREET TREES



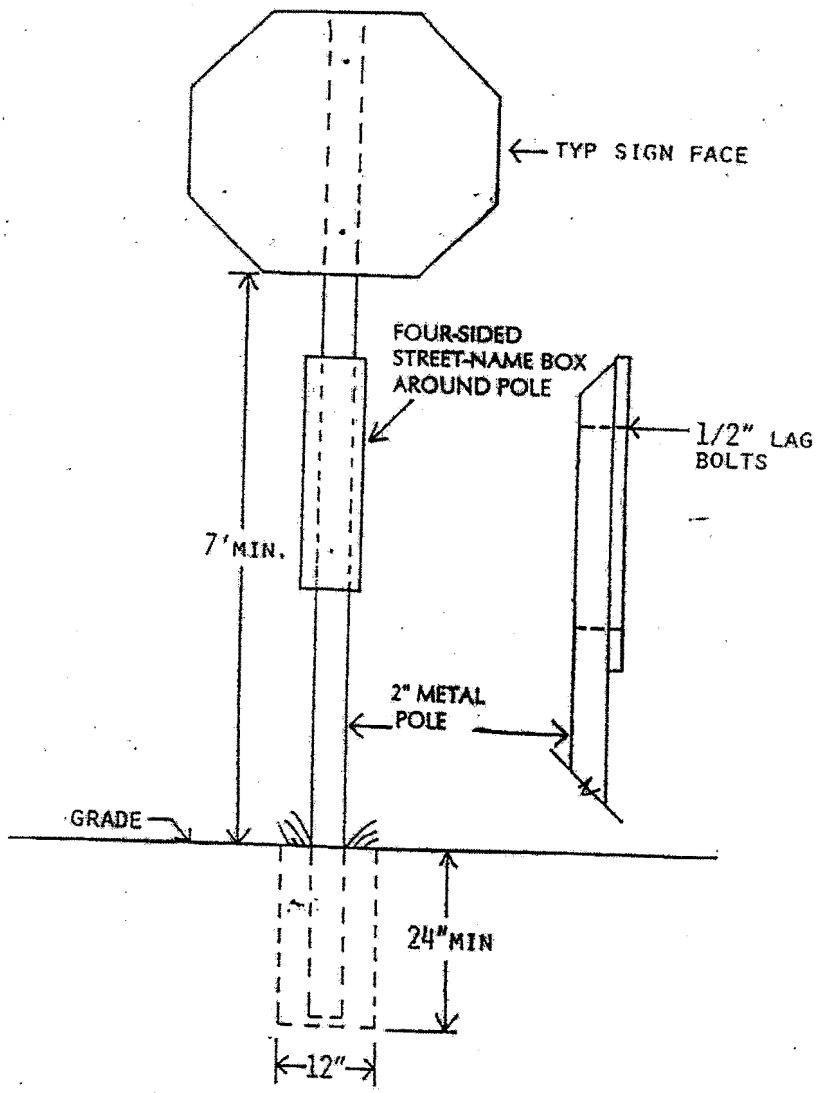
CITY OF CARMEL-BY-THE-SEA

FIGURE-9

CROSS-SECTION FOR STREET TREE DOWNSPOUT GRAVITY IRRIGATION

Map 2

Appendix F-5



CITY OF CARMEL-BY-THE-SEA

FIGURE-10

COMBINATION STOP-SIGN
AND STREET-NAME SIGN

CITY OF CARMEL-BY-THE-SEA

POLICY AND PROCEDURE DATA SHEET

Policy/Procedure No.:C90-04 Department of Origin: Forest & Beach

Effective Date: 10 July 1990 Authority: Resolution 90-83

Revision Date(s):_____

SUBJECT: REVIEW OF STREET RESURFACING AND UNDERGROUND UTILITY IMPROVEMENT PROJECTS BY THE FOREST AND BEACH COMMISSION

REPONSIBLE PARTY: City Forester

PURPOSE: The greenbelt areas of the City are vitally important to the ambiance of our community. This policy is to establish a process whereby the Forest and Beach Commission will review street resurfacing and underground improvement projects from the concept stage through their completion to ensure that this greenbelt is preserved, protected and enhanced.

POLICY/PROCEDURE: The Forest and Beach Commission shall be informed by the Director of Public Works of any proposed street resurfacing or underground utility improvement project in a timely manner, so as to allow for Commission input while the project is in the concept phase.

The Commission shall also review working drawings and final plans and specifications before the project goes to bid or, if no bid process is involved, before construction begins.

The Commission may also conduct a post-implementation tour of the project site and prepare an after-action report identifying ways future projects may be improved.

RECINDED (Date)

CITY ADMINISTRATOR APPROVAL OF DEPARTMENTAL POLICIES:

Date: _____ Initial:_____

TREE SPECIES LIST

An urban forest is an ecosystem that operate as a result of multiple interactions among vegetation, soils, water, insects, wildlife, climate, anthropogenic surfaces, and people. The goal of the Forest and Beach is to manage that operation for the improvement of the urban forest and the quality of life of the City's residents.

Our forest is based on the concept of a two-story canopy consisting of native and indigenous trees and is one, which the Commission feels is essential for the continuation of Carmel's forest. Monterey pines (Pinus radita) and cypresses (Cypressus macrocarpa) are the primary upper canopy trees of the forest and the planting of these species shall receive the greatest priority in appropriate situations. Coast live oak (Quercus agrifolia) is the preferred lower canopy tree. In general, the native indigenous trees (pine, cypress, and oaks) will do well planted at any location throughout the City.

Pinus radita – "Monterey Pine"

An attractive pine that creates the forested character of our village. A fast growing native species, which naturally occurs along the coast of central California,and can rapidly attain 70-100 feet. It is best suited to coastal landscapes where it becomes drought tolerant. Monterey pine has the form of a pyramid, but at maturity develops a rounded or flatish crown. Accepts lots of water, but can overgrown and die at early ages, therefore, watering should be limited to the first few years after planting. (Native upper canopy tree).

Cupressus macrocarpa – "Monterey Cypress"

Stately and conical when young. At maturity attains heights of 40 feet and more, and as wide. With supplemental water, it produces amazing growth. Planted away from the coast, it is susceptible to canker fungus. Fog and wind conditions will allow proper development and freedom from canker (Native upper canopy tree).

Tree Species List

Quercus agrifolia – "Coast Live Oak"

Evergreen tree, developing a broad round dome from 30-60 feet high, 35-80 feet wide. Fast growing when young, especially with ample water. Supplemental watering of mature trees is not recommended. Native to coast ranges from Mendocino to San Diego counties, but will do well inland on not-to-dry-slopes. Has greedy roots and drops almost all of its old leaves in early spring. It is a magnificent year-round cover for small gardens (Native lower canopy tree).

A healthy forest requires a variety of tree species to preclude a single disease from causing irreversible damage. Therefore, the following list of tree species, including growth characteristics, is provided for those circumstances where one of the preferred tree species is not appropriate. Native species are favored. The following trees have proved successful in our community given the proper growing conditions.

EVERGREENS

Pinus muricata – "Bishop Pine"

Native to the northern coast. Rapid growth to 40 – 50 feet. Tolerates wind and salt air. Disease resistant, can grow in pure sand (Native upper canopy tree).

Pinus torreyana – "Torrey Pine"

Native to the warm southern coast. Is a rugged tree that grows to 30-50 feet. Drought tolerant and long-lived, does well in gardens or naturalized landscapes. Does not require pruning, only the removal of dead branches. (Native upper canopy tree).

Tree Species List

Cedrus deodara - "Deodar Cedar"

Moderate growth to 50-60 feet with 30 foot spread at ground level. Very graceful tree with a light texture. Needs infrequent but deep watering and regular fertilization. Prefers sunny warm locations. (Upper canopy tree).

Lyonothamnus floribunda asplenifolius - "Catalina Ironwood"

Moderate growth rate, 30-40 feet in height. Considered drought tolerant, however, will look much better if watered during the summer. Notable feature is its redwood colored bark that peels off in long thin strips. Grows near the coast and is very handsome when planted in groves. Needs excellent drainage (Native lower canopy tree).

Arbutus menziesii - "Madrone"

Slow growing evergreen. Mature height varies with growing conditions and site. Rarely exceeds 25 feet in our area. Main feature is smooth reddish-brown bark that peals in thin flakes. Needs well-drained soil and ample water to become established. (Native lower canopy tree).

Schinus molle - "California Pepper Tree"

Fast growing to 25-40 feet. Distinctive light brown, scaly bark on gnarled trunks. Evergreen tree with pale foliage. Will tolerate poor soil and drainage, wind, dust and limited water. It has a voracious root system and generates large amounts of litter. Avoid summer water. (Lower canopy tree).

Heteromeles arbutifolia - "Toyon"

Dense evergreen shrub or small tree that can grow to 15-25 feet in height. Has large groups of showy red berries during December - February. Tolerant of heat, smog, wind, and poor soil. Very drought tolerant. (Native lower canopy tree).

Tree Species List

Umbellularia californica – "California Bay"

Needs deep moist soil to attain a height of 25-40 feet.Dry or windswept sites cause a more shrub like appearance, which make it a good screen. Aromatic leaves used in cooking (Native lower canopy tree).

Calocedrus decurrens – "Incense Cedar"

Slow growing pyramidal conifer. Can grow to 80 feet, but in our coastal environment 20 feet is the norm. Tolerates poor soil, full sun and high winds. (Native lower canopy in this area).

Sequoia sempervirens - "Coast Redwood"

Fast growing with ample water and good drainage. One of the best upper canopy trees planted next to a lawn. Will grow to 50-60 feet in our area, tops usually die as a result of coastal wind. Relatively pest-free. (Native upper canopy tree).

Schinus terebinthifolius _ "Brazilian Pepper Tree"

Evergreen shrub to small dome-shaped tree that grows at a moderate rate to 15-30 feet. Darker green and coarser leaf than California Pepper. It does not develop the same problems with roots and litter as the Schinus molle. Frequently used for lawn and courtyard accents. It responds well to pruning and can become a clipped screen. (Lower canopy tree).

Olea europaea – "Olive"

A medium sized evergreen tree (25-30 feet). Willow like foliage is a soft gray-green that combines well with most colors. With time, these trees develop into a round dome shape and have interesting gnarled trunks. Needs full sun and are tolerant of most soils. Plant fruitless variety to avoid messy litter. (Lower canopy tree).

Tree Species List

Eucalyptus ficifolia - "Red Flowering Eucalyptus"

Round headed evergreen tree that grows to about 30 feet. Spectacular 1-foot clusters, can have variable colored flowers (cream, light pink, orange and red). Flowers during summer months. Good coastal tree but should not be used in lawns. (Lower canopy tree).

Eucalyptus nicholii – "Peppermint Gum"

Graceful, weeping, vertical evergreen tree that is fast growing to 40 feet. A garden tree with fine textured foliage. Crushed leaves smell like peppermint. (Upper canopy tree).

Eriobotrya japonica – "Loquat"

Grows to 15-30 feet tall and equally broad. Large, leathery and heavily veined leaves. Needs well-drained soil and is drought tolerant once established. May produce edible fruit, but is mainly used as an ornamental. (Lower canopy tree).

Ceratonia siliqua – "Carob"

Evergreen shrub or tree. If pruned to grow as a tree can attain a height of 30 feet and as wide. Male trees have flowers; females produce abundant one-foot leathery pods that create litter beneath the tree. Water deeply and infrequently as this tree is subject to root crown rot. (Lower canopy tree).

Grevilla robusta – "Silk Oak"

Large, fast growing, narrow tree that attains 50-60 feet. Branches are very brittle and subject to break in winter storms. Generates lots of litter and has a shallow, invasive root system. Needs full sun. Grows in poor, compacted soils if not over watered. Use for quick, tall screening while slower growing, tougher-wooded trees grow up. (Lower canopy tree)

Tree Species List

DECIDUOUS

Platanus racemosa – "California Sycamore"

Native to stream banks. Fast growing to 40 feet. Attractive patchy, buff colored bark. Deciduous with leaves remaining on until new growth starts. Generally used in informal gardens (Native lower canopy tree in coastal environments).

Aesculus californica – "California Buckeye"

Small single or multi-trunked tree that will grow to 15 to 20 feet. Native to dry slopes but will grow in a variety of cultural situations. Usually drop their leaves in early summer exposing its silver-gray bark and artistic structure. (Native lower canopy tree).

Liquidamber styraciflua – "Sweet Gum"

Moderate growth rate with cone shape form at maturity. Deciduous trees with brilliant fall foliage. Grows to 40-feet in coastal climate, needs well-drained soil (Lower canopy tree).

Platanus acerifolia "London Plane"

Fast growing to 40-50 feet. Tolerant of most soils, smog, dust, and reflective heat. Deciduous tree that is fairly insect free, but subject to anthracnose, which causes early, continued leaf fall. Interesting bark texture and color. (Lower canopy tree).

Acer macrophyllum – "Big Leaf Maple"

Deciduous tree, native to stream banks and moist canyons. Broad topped, dense shade tree that grows to 30 feet tall in our coastal area. Golden fall color. Tree produces fruit with twin wings that persist for a long time providing the tree with an interesting decorative feature. (Native lower canopy tree).

Tree Species List

Robinia pseudoacacia – "Black Locust"

Deciduous tree. Fast growth to 40-70 feet with rather open, sparse-branching habit. Thorny branchlets and showy flowers form grape-like clusters. A very aggressive tree which tolerates the most adverse conditions. (Lower canopy tree).

Ulmus parvifolia – "Chinese Elm"

Evergreen or deciduous according to the trees individual heredity. Very fast growth to 40 feet. Older trees have bark that sheds similar to sycamores. Makes a good patio tree, but has aggressive root system. (Lower canopy tree).

Quercus palustris – "Pin Oak"

Moderate growth to 40-50 feet. Slender and pyramidal form when young, open and round headed at maturity. Lower branches tend to droop almost to the ground. Intolerant of drought. Develops chlorosis in alkaline soils. Needs ample water and good drainage. A good tree for lawns. Displays fall color. (Lower canopy tree).

City of Carmel-by-the-Sea

List of Compatible Plants

Under and Around

Native Trees

June 2000

Compatible Plants Under and Around Native Trees

(D - Deer Resistant , CN - California Native)

SHRUBS

Arbutus unedo -- Strawberry Tree (D)
8-35 ft, red-yellow fruit in fall

Arctostaphylos densiflora -- Vine Hill Manzanita (D, CN)
low spreading growth except 'Sentinel' (6'), needs good drainage

Berberis darwinii -- Darwin Barberry (D)
hollylike leaves, 10' X 7' , orange flowers, blue berries liked by birds

Buddleia davidii -- Butterfly Bush (D)
sun or light shade, fast growth, fragrant flowers, good drainage

Carpenteria californica -- Carpenteria (D, CN)
slow to 6' , light shade, fragrant white flowers, oak root fungus resistant

Ceanothus spp. -- Wild Lilac (CN)
many varieties, blue-violet-white flowers, very drought tolerant

Cercis occidentalis -- Western Redbud (D, CN)
deciduous, 10'-18' tall, magenta flowers, oak root fungus resistant

Eriogonum spp. -- Buckwheat (D, CN)
full sun, well drained soil, summer flowering, several varieties

Fremontodendron spp. -- Flannel Bush (D, CN)
fast growth to 20', short lived, showy yellow flowers, no summer water

Galvezia speciosa -- Island Bush Snapdragon (CN)
spreading to 8', tubular scarlet flowers, good drainage

Garrya elliptica -- Coast Silktassel (D, CN)
evergreen shrub 8' to 20' tall, sun or light shade, 'James Roof ' good var.

Grevilla rosmarinifolia -- Rosemary Grevilla (D)
Australian shrub to 6', red flowers primarily in winter

SHRUBS (cont.)

Heteromeles arbutifolia -- Toyon (CN)
Shrub or small tree, takes extra water well, red berries loved by birds

Holodiscus discolor -- Ocean Spray (CN)
deciduous shrub to 20' in moist areas, cream colored flowers in spring

Mahonia aquifolium -- Oregon Grape (D, CN)
spiny leaves, yellow flowers, blue berries, oak root fungus resistant

Mimulus (Diplacus) spp. -- Monkey Flower (D, CN)
CA natives are drought tolerant, tubular orange-yellow flowers

Myrica californica -- Pacific Wax Myrtle (D, CN)
attractive evergreen shrub to 30', birds like fruit in the fall

Myrsine africanum -- African Boxwood
small glossy dark green foliage, sun or partial shade, good drainage

Myrtus communis -- Myrtle (D)
several varieties, aromatic leaves and flowers, needs good drainage

Philadelphus virginalis -- Mock Orange
6' to 8' deciduous shrub, full sun, fragrant flowers in summer

Pinus mugo -- Mugo Pine (D)
slow growing pine, prostrate to 10' tall

Plumbago auriculata -- Cape Plumbago
sprawling shrub to 6', white - blue flowers year round in coastal regions

Prunus illicifolia -- Holly Leaf Cherry (CN)
evergreen to 20', holly like leaf, white flower spikes, red fruit

Prunus lusitanica -- Portugal Laurel
shrub or small tree to 20', white flower spikes 5"-10" long in spring

Punica granatum -- Pomegranate
deciduous shrub or tree, showy flowers, can yield fruit, fall color

SHRUBS (cont.)

Rhamnus californica -- Coffeeberry (D, CN)
evergreen to 15', low varieties also, sun or half shade, red-black berries

Rhus integrifolia -- Lemonade Berry (D, CN)
evergreen to 15', clusters of pink flowers in the spring

Ribes sanguineum -- Red Flowering Current (D, CN)
deciduous shrub to 10', maple-like leaves, clusters of red-pink flowers

Ribes speciosum -- Fuchsia-Flowering Gooseberry (D, CN)
very spiny stems, drooping fuchsia-like red flowers in early spring

Rosa californica -- California Wild Rose (CN)
Deciduous spiny shrub, pink flowers followed by crimson hips

Salvia clevelandii -- Cleveland Sage (CN)
4' rounded shrub, aromatic foliage and blue flowers, good drainage

Salvia greggii -- Autumn Sage (CN)
4' shrub, full sun to light shade, red flowers in spikelike clusters

Teucrium fruticans -- Bush Germander (D)
loose gray-green shrub 4' to 8', lavender flowers all year, good drainage

Viburnum suspensum -- Sandankwa Viburnum
evergreen, clusters of white flowers in spring, sun to nearly full shade

Xylosma congestum -- Xylosma
loose spreading growth to 10', yellow-green leaves, bronzy new foliage

ANNUALS

Centaurea cyanus -- Cornflower, Bachelors' Button (D)
to 3', gray foliage, blue-pink-red-white flowers, sow all year with water

Clarkia amoena -- Farewell - to - Spring (D , CN)
sow in fall or spring, 2" pinkish flowers, full sun, good with other annuals

ANNUALS (cont.)

Eschscholzia californica -- California Poppy (CN)
2' tall with orange-yellow flowers, good to naturalize, sow in fall or winter

Linaria spp. -- Toadflax
multi-colored flowers to 2', full sun or light shade, sow in winter or spring

Lupinus spp. -- Lupine (CN)
many varieties, sow in fall or winter, all need good drainage

Nemophila menziesii -- Baby Blue Eyes (CN)
sow in fall or winter, to 1' tall, blue flowers with white centers 1" across

Scabiosa atropurpurea -- Pincushion Flower
sow in winter or spring, prefers sun, 2" red- rose-purple-white flowers

GRASSES

Deschampsia caespitosa -- Tufted Hairgrass (CN)

Elymus glaucus -- Blue Wild Rye (CN)

Festuca californica -- California Fescue (CN)

Festuca rubra -- Red Fescue (CN)
used in lawn blends, shade tolerant, tolerates drought and many soils

Helictotrichon sempervirens -- Blue Oat Grass
2'-3' fountains of blue-gray leaves, full sun, good drainage

Koeleria cristata -- Prairie Junegrass (CN)

Melica imperfectra -- Melic Grass (CN)

Muhlenbergia rigens -- Deergrass (CN)

Pennisetum setaceum -- Fountain Grass
perennial clump to 4', summer 3'-4' flower spikes, winter dormant

Stipa pulchra -- Purple Needlegrass (CN)

PERENNIALS

Acanthus mollis -- Bear's Breech (D)
fast growing, 2' long dark green leaves, 18" spikes of tubular flowers

Achillea tomentosa -- Woolly Yarrow (D)
spreading mat of fernlike hairy leaves, golden flowers in summer

Aloe spp. -- Aloe (D)
many varieties, clumps of fleshy pointed leaves, showy flowers

Artemesia pycnocephala -- Sandhill Sage (D, CN)
round spreading to 2' tall, soft gray leaves, very small yellow flowers

Bergenia crassifolia -- Winter Blooming Bergenia
dark green 8" wavy leaves, 20" tall, dense clusters of rose-purple flowers

Centranthus rubra -- Red Valerian
3' tall bush, clusters of red-pink flowers, naturalizes, can be invasive

Dudleya spp. -- (D, CN)
succulents, full sun, some native to coastal cliffs

Erigeron karvinskianus -- Fleabane, Mexican Daisy
trailing growth to 20" tall, numerous white-pink flowers, naturalizes

Hemerocallis hybrids -- Daylily
Deciduous or evergreen, 1' to 6' tall, many colors of 3" - 8" flowers

Heuchera spp. -- Coral Bells (CN)
several varieties, clumps of round leaves, reddish flowers on tall stems

Iris douglasiana and hybrids -- Douglas Iris (D, CN)
dark green leaves, 1' to 2' stems with lavender-white-yellow flowers

Kniphofia uvaria -- Red-Hot Poker (D)
coarse clumps of grass-like leaves, tall spikes of red tubular flowers

Limonium perezii -- Sea Lavender
leathery green leaves, clusters of purple and white flowers, beach areas

PERENNIALS (cont.)

Myosotis scorpiodes -- Forget-Me-Not (D)
bright green leaves, blue and yellow flowers, spreads by creeping roots

Oenothera berlandieri -- Mexican Evening Primrose
profuse summer bloom of rose-pink flowers, tough sites, invasive

Penstemon heterophyllus purdyi -- Beard Tongue (D, CN)
upright 2' stems, spikes of lavender-blue flowers in spring, full sun

Romneya coulteri -- Matilija Poppy (D, CN)
8' stems, gray-green leaves, fragrant white 9" flowers, invasive rhizomes

Salvia leucantha -- Mexican Bush Sage (D)
3' stems from roots, purple and white flowers enjoyed by hummingbirds

Sedum spp. -- Stonecrop
succulents, fleshy leaves in many shapes and sizes, star-like flowers

Sisyrinchium bellum -- Blue-eyed Grass (CN)
narrow grass-like leaves, 4" to 16" tall, bluish purple flowers in spring

Thymus vulgaris -- Common Thyme
erect shrubby plant, aromatic foliage, tiny lavender flowers

Tulbaghia violacae -- Society Garlic
broad clump of blue-green leaves, 1' to 2' stems of rosy-lavender flowers

Viola odorata -- Sweet Violet
fragrant blue and yellow flowers, 2" to 10" tall, runners root at joints

Zauchneria californica -- California Fuchsia (D, CN)
upright 1' to 2' stems, gray-green foliage, scarlet trumpet shaped flowers

VINES

Clematis spp. -- (CN)
deciduous, prefers cool root area, full sun or light shade, showy flowers

Hardenbergia violacea -- Happy Wanderer
Australian native to 10', purplish flowers, needs good drainage, hardy

Lonicera japonica 'Halliana' -- Hall's Honeysuckle
15' long, cut back to control, white-yellow flowers liked by bees and birds

Polygonum aubertii -- Silver Lace Vine
rapid growing evergreen, useful as a screen, white flowers, full sun

Vitis californica -- California Grape (CN)
deciduous vine

FERNS

Dryopteris arguta -- Coastal Wood Fern (CN)
dark green, finely cut fronds, 2'-3' tall, avoid overwatering

Nephrolepis cordifolia -- Southern Sword Fern
bright green upright fronds to 3', spreads by runners, very adaptable

Polystichum munitum -- Western Sword Fern (CN)
leathery dark green fronds to 4', good in shade, best in rich soil

TREE NOTES
CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION
Pete Wilson, Governor
Richard A. Wilson, Director
Douglas Wheeler, State of California Secretary for Resources, The Resources Agency
NUMBER: 1
APRIL 1989

Protecting Trees From Construction Impacts

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Why Should We Protect Trees

An important benefit of trees to society is their aesthetic value. Our parks, streets, homes and businesses would seem sterile without them. Trees also have monetary value. Residential and commercial properties with established trees have a greater market value than those without them. Trees provide other benefits which include: shade, noise abatement, wind breaks, erosion control and air pollution reduction. Like all green plants, trees convert carbon dioxide into oxygen during photosynthesis. This process contributes significantly to the recycling of the atmospheric gases we breath. Unfortunately trees are often irreversibly damaged or killed during construction and/or landscaping.

Understanding a Tree's Root System

The primary impact of construction around a tree is to the unseen portion, the root system. Activities which disturb or alter the soil in which roots grow can injure or kill a tree. To reduce or prevent adverse impacts, we must understand how roots function and how they develop in the soil.

The greatest proportion (90%) of tree roots is found within the first three feet of soil. Roots function to support and anchor the tree. In addition, specialized (absorbing) roots function to exchange gases and to absorb water and minerals. Most absorbing roots are found in the first 8-12 inches of soil where water and oxygen can readily penetrate. Roots require both water and oxygen to grow and function. A network of supporting roots and absorbing roots grows well beyond the trunk. Depending on soil conditions they may extend two to three times the radius of the crown.
The roots of most tree species are associated with beneficial fungi called mycorrhizae. These fungi increase the roots ability to absorb water and minerals. Soil disturbance during construction can permanently
disrupt this association.

How Construction Affects Roots

By understanding where roots grow and how they function, we can begin to see how construction activities such as trenching, slope cuts, soil compaction, soil grade changes and paving can affect roots.

When trenching for utilities and foundations or where grade lowering is done close to a tree, there is a likelihood that roots will be cut. The closer the trench is to the trunk the greater the damage. Each root that is cut reduces the tree's capacity to supply water and nutrients to the leaves. Trenching within just a few feet of a trunk can reduce the functional root system by as much as 50%.

Soil is compacted during construction by heavy equipment which squeezes out the air spaces making it more dense and stable. Unfortunately, this process greatly reduces the infiltration of water and oxygen into the soil. As a result roots cease to function and eventually die. In addition, root penetration is decreased.

Soil grade changes alter the natural soil level around a tree. The addition of fill soil in particular, can have an effect similar to soil compaction. The depth and porosity of the fill soil are the most important factors affecting the tree. If the depth is significant or the porosity is low, root death can occur. For some tree species, a grade change of two inches can be significant. Soil fill that is compacted or has lower porosity than the native soil will restrict root activity. If roots cannot develop or grow into the fill, recovery by the tree after construction may be impaired or prevented.

Fill soil around the root collar (the flared part of the trunk at or just above soil grade) and trunk will result in death and decay of the bark tissue. This can cause the death of all or part of the root system including the supporting roots. Often this results in a "Hazardous" tree.

Grade changes that require the removal of soil often remove absorbing roots and expose and injure other roots.

Concrete or asphalt paved over soil where roots are present will seal the surface, reducing water availability and gas exchange to the roots beneath. Usually soils are compacted prior to installing pavement which compounds these problems.

Symptoms Of Construction Impacts

An injured tree may take several months to many years to exhibit symptoms of construction impacts. These can include: slow decline, insect or disease attack, sparse foliage, significant branch dieback and wilting or yellowing of leaves.

Reducing Construction Impacts

The following techniques can be used during construction to prevent or reduce tree injury:

- **Fence around the area within the dripline to protect it from construction activities. Because roots often grow beyond the dripline, enclosing a larger area is desirable.**

- **Place six inches of mulch over the root zone to reduce soil compaction where vehicular access is required.**

- **Dig trenches by hand or tunnel under the tree if underground utilities must be installed within the tree's drip line.**

- **Prune roots that must be removed, do not rip them out with a trencher or back hoe.**

- **Bridge over roots when trenches for new foundations will damage them.**

- **Construct wells around trunks and root collars to keep soil away and install aeration systems when the soil grade must be raised. Use a coarser fill soil than the soil being covered and do not compact. Add fill in the late fall or winter when roots are less active. Avoid working on wet soils.**

What To Do After The Damage Is Done

- **Soil aeration (vertical or hydrojet mulching) can be effective where soils have been compacted.**

- **Only remove dead, hazardous or obstructive branches. Never remove more than 20% of the foliage during a single year. Leaves produce carbohydrates and buds produce hormones - both are necessary for root growth.**

- **Where appropriate, apply pesticides to reduce attacks by insects or other pests until the tree's vigor is restored.**

- **Place organic mulch over bare soil.**
- **Restore soil grade by removing fill.**
- **Restore irrigation regime that existed before construction took place.**

Summary

Construction around trees can be done successfully. However, this requires planning before construction or landscaping. Not all trees on a site are worth saving.
Each tree should be evaluated by a consulting arborist to determine its condition and value in the landscape. It may be more desirable in the long run to plant new trees after construction is completed. The value of a tree should be used as a guide to determining the measures used to save it from construction impacts. Where trees of high value are present the effort and expense to save them is worthwhile. Mature trees take years to grow and their beauty and aesthetics are irreplaceable.

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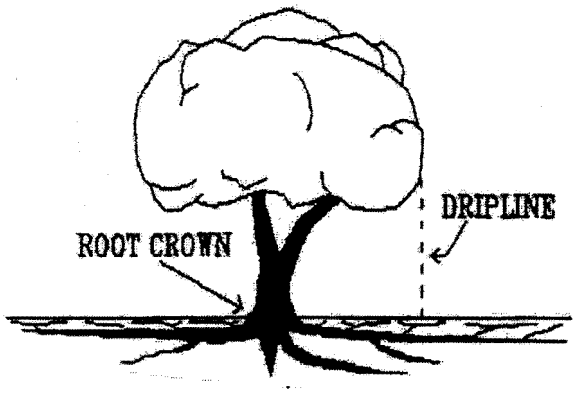
Revised 12/13/90



Tree Notes
CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION
Pete Wilson, Governor, State of California
Harold R. Walt, Director
Douglas Wheeler, Secretary for Resources, The Resources Agency
NUMBER: 2
APRIL 1989

Tree Roots - Major Considerations For The Developer

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Roots support and anchor, absorb water and minerals, store energy and produce important compounds.

Roots grow where there is sufficient oxygen, water, minerals, and where the soil is not too hard to penetrate. 90% or more of tree roots grow in the upper three feet of soil. Up to 70% are in the top one foot. The surface layer of undisturbed soils is generally quite porous, allowing oxygen, water and roots to penetrate. Minerals are also concentrated there. Soil becomes less porous and more difficult to penetrate as depth increases.

Oxygen availability affects mineral absorption, growth, health and root depth. Poor oxygen availability is associated with compacted, waterlogged, heavy clay, paved over and filled (raised) soils. The mixing of soil or the addition of off-site soil, greatly reduces oxygen availability and water drainage. Waterlogging of the surface layer and excessive dryness may result.

Roots do not normally grow deeper than three or four feet. Most grow radially outward and largely horizontal to the surface. Vertical growing roots are common close to and under trees. They may go down to five feet or more in sandy soil. These roots take up water during dry periods and provide support, especially if lateral roots are cut.

The large buttress roots which originate at a tree's base, rapidly decrease in diameter, one to three meters from the trunk to form a network of long, thin, rope-like roots, 8 - 12 inches below the surface. These roots branch and rebranch to form an extensive network o absorbing roots, extending outward one to two times the height of the tree.

The greatest concentration of active roots is directly beneath the leaf canopy (drip zone).

Cutting large roots near the trunk is much more injurious than cutting smaller roots beyond the area of rapid taper. Few large roots are found beyond 10 feet of the trunk. Much of a tree's water absorbing roots are under and close to the tree's base. Because of their depth and location, These roots are less likely to be damaged by construction.

Root loss due to root pruning, trenching or grade changes, reduces tree growth, health, aesthetics and stability. The destruction of roots just outside the drip zone on one side of a tree represents about a 15% loss. If the roots are cut midway between the drip zone and the trunk on one side, about 40% of the roots will be lost. Severe root loss (50%) or more) usually causes immediate water stress and reduces photosynthesis (food production). Growth is reduced, dieback and even death may result.

Young healthy, vigorous trees can survive severe root loss while large, old, or declining trees may not. Recovery following the shock of severe root loss depends on rapid root replacement.

The recovery of a tree sustaining severe root lose is influenced by:

- **Species, age, vigor and size**
- **Growing conditions**
- **Date of injury (season)**
- **Percent of root loss and distance from the trunk**
- **Other soil disturbances**
- **Treatment given**

Root growth requires adequate food reserves, growth stimulating hormones, water and minerals. If these are available, and there are no other restrictive influences or construction impacts, root growth and replacement will generally proceed rapidly. Low or depleted food reserves will delay root replacement. If the soil conditions have been seriously altered by construction, root development will be slowed or stopped. **A DELAY IN RECOVERY FROM ROOT LOSS WILL RESULT IN GROWTH LOSS, DIEBACK OR TREE DEATH.**

The worst time to cut roots is just prior to bud break in the spring because growth hormones are not present in the roots to stimulate root growth. Avoid cutting roots later in the spring when food reserves have been nearly depleted by leaf growth. Root growth proceeds most rapidly in the summer and fall when top growth has slowed, food reserves are high and growth hormones are present in the roots.

Top pruning to reduce demands on the damaged root system reduces the amount of food available to the roots, thus slowing recovery.

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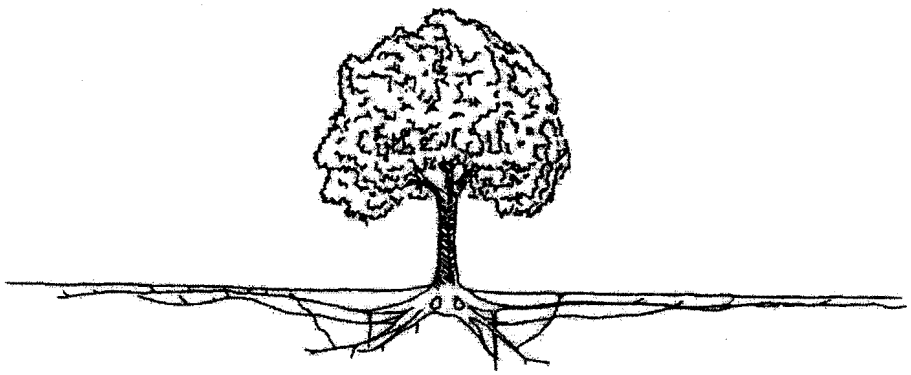
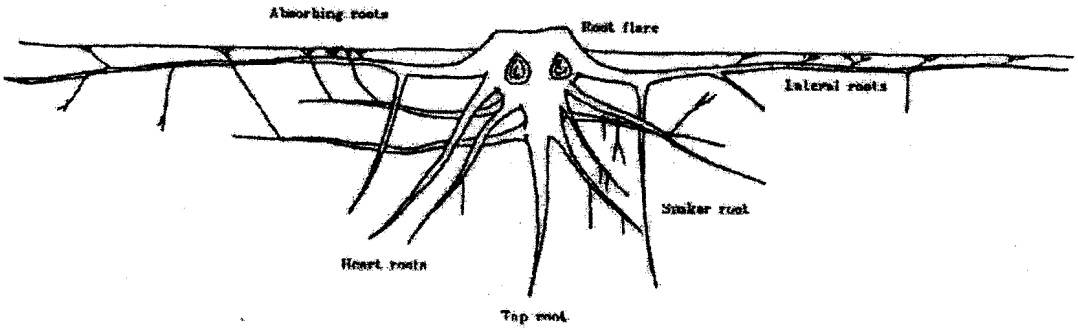


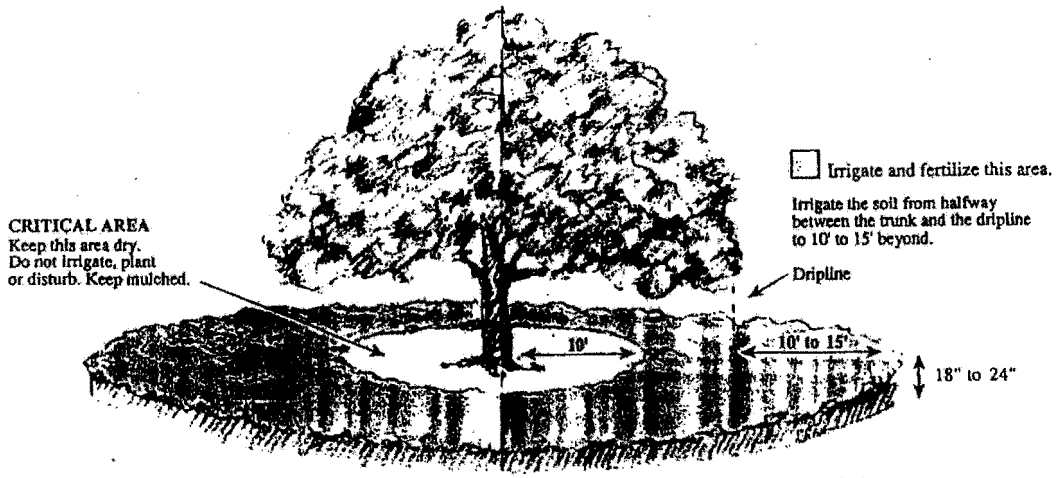
Schematic representation of root spread in a mature tree.



Schematic representation of the root system in a mature tree.

GUIDELINES FOR IRRIGATION AND FERTILIZATION

Figure 2



IRRIGATION

Generally, native oaks do not require irrigation.

Additional water may be appropriate
- to minimize drought stress
- when natural water sources have been altered
- after root loss due to construction injury or transplanting
- to establish compatible plants
- when using fertilizer

Do not use sprinkler system, use dripline or soaker hose placed on surface and cover with mulch. Check water infiltration.

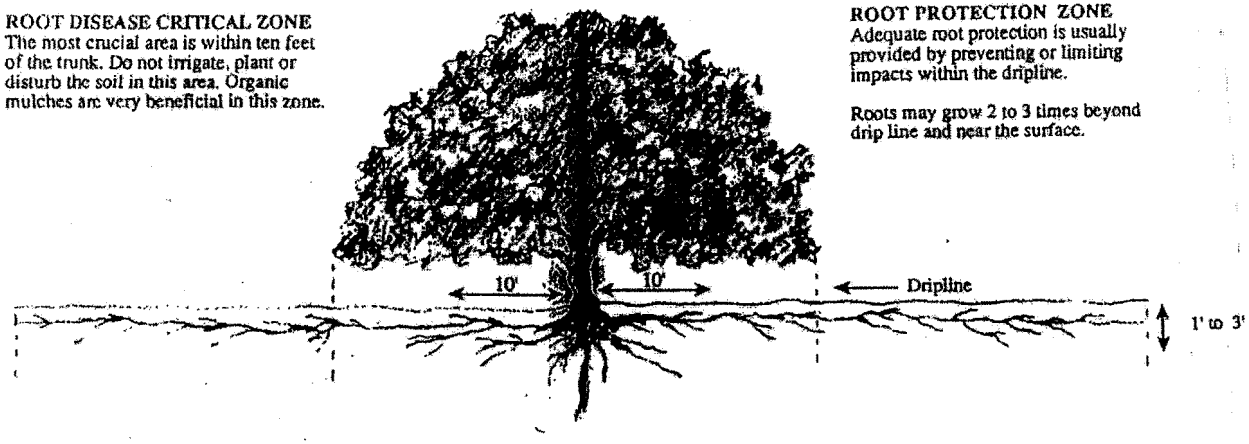
FERTILIZATION

Healthy oaks growing in undisturbed conditions normally do not need supplemental fertilizer.

Stressed and weakened oaks should not be fertilized.

If needed, broadcast fertilizer in late winter or early spring when soil is moist and water in.

If fertilizer is applied in summer, irrigate soil before application then water in thoroughly (6" to 12"deep).



DO

- Select appropriate plants
- Mulch with 2" to 4" of organic matter
- Protect from compaction
- Tunnel through soil for utility line installation
- If paving is required, use porous paving, such as brick on sand or gravel

DO NOT

- Compact soil with heavy machinery, vehicles, livestock, etc.
- Change drainage patterns
- Raise soil grade
- Lower soil grade
- Trench or otherwise cut roots
- Till

CARMEL BUSINESS DISTRICT PLANTING POLICY

The Central Business District is a 20- block section that represents the City's area for commerce. It is bounded by Torres Street/Junipero Avenue, 8th Avenue, Monte Verde Street and 4th Avenue. This is the only area of the City that has formal curbs and sidewalks and yet the trees growing here contribute greatly to the overall forested charm and informal atmosphere of the village.

Managing the trees and tree planting in this area presents many challenges. Trees naturally grow in groups, their roots are free to extend in all directions. Pruning for building clearance or artificial water practices is not necessary. Trees growing in sidewalks, concrete planters, or small mini-parks are at a great disadvantage. These are hostile growing environments leading to stress, physical injury and disease. Any activities to install or care for trees living in a formalized commercial area needs to be cognizant of the negative environmental factors and employ mitigation's to minimize their impacts on trees.

Goal: To perpetuate and enhance the number, mix and vitality of trees growing in the Central Business District.

Objective: Favor planting of indigenous trees.

Policy: Until such a time as a pitch canker resistant Monterey pine is available, the upper canopy tree of choice shall be Monterey Cypress and coast redwood.

Objective: Increase tree planter size whenever reasonable.

Policy: The typical "tree square" is 16 square feet. It is advantageous to increase the size and to create a more curved planter configuration whenever sidewalks are replaced.

Objective: It is desirable to install native plants in sidewalk planters to enhance the natural look of the area.

Policy: Only native drought tolerant plant material shall be used on public property. Maintaining this theme is particularly important in the center island planters on Ocean Avenue. The forested nature of this area should not be augmented by an unnatural influence of exotic plants or colored flowers.

Policy: Wherever improvements are made to private property consideration should be given to landscape enhancements on the adjacent public property.

Objective: Improve the percolation of water in the root zone of trees.

Policy: Amend soil to improve drainage when necessary.

Policy: Any sidewalk replacement should favor sand set pavers.

Position Paper

Transport, Disposal, and Use of Woody Material Infested with the Pine Pitch Canker Fungus

Note: The practices described herein are key to the implementation of the Board of Forestry's Zone of Infestation.
Counties with infestations of pine pitch canker include Alameda, Contra Costa, Los Angeles, Marin, Monterey, Mendocino, Orange, San Benito, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, and Sonoma. Infestations may be localized or widespread depending upon the county. Know if you are in an infested area. If you are unsure, assume you are within an infested area whenever working with pine within an infested county. Most pines and Douglas-fir are susceptible to the disease, although the disease is most likely to be encountered in either Monterey or Bishop pines. In order to reduce the spread of pitch canker to uninfested areas, The Pine Pitch Canker Task Force recommends the following actions within infested areas:

TREE PRUNING AND CUTTING

- Tools and machinery which are used to prune, cut, or chip trees with pine pitch canker disease should be cleaned and sterilized before use on uninfected trees or in uninfested areas. Lysol™ or a 10% solution of bleach (1 part household bleach in 9 parts water) are effective sterilants. A logical alternative to repeated cleaning of equipment is to reserve one set of equipment for use only in infested areas and another set for use only in uninfested areas.

- Limbs and small pieces of wood from diseased trees may be chipped and the mulch deposited on site or they may be burned. Any material that is removed from the site should be tightly covered with a tarp during transit and taken to the nearest landfill or designated disposal facility for prompt burial, chipping and composting, or burning. Do not transport diseased wood out of infested counties.

- Logs from diseased trees may be split for firewood for local use, but the wood should be seasoned beneath a tightly sealed, clear plastic tarp to prevent the buildup of destructive insects. California Department of Forestry and Fire Protection **TREE NOTE #3, Controlling Bark Beetles in Wood Residue and Firewood**, provides specific guidelines for firewood tarping. Do not stack pine firewood next to living pine trees or transport it to uninfested counties.

FIREWOOD

- Do not transport pine firewood out of infested counties. If you are traveling from an infested area to camp elsewhere, take another type of firewood with you, such as oak or cedar, or purchase firewood at your destination.

- If you are camping within an infested county, use up or leave behind any pine firewood you have with you. This should be done even if you brought the firewood with you from an uninfested county.

CHRISTMAS TREES

- Individuals are advised not to transport Monterey pine Christmas trees out of infested counties. Purchase and use trees locally; dispose of Monterey pine Christmas trees locally.

- Preferred methods of disposal include:
    - dispose of the tree promptly through a local recycling program, or
    - dispose at a local landfill which either buries or composts green waste, or
    - chip the tree and compost the chips or use them as a mulch around your home.

SEEDS

- Seeds collected in pitch canker infested areas may carry the pathogen, even if they are taken from cones on apparently healthy trees. Pine seeds should not be transported out of pitch canker infested areas.

CHIPS

- Unless the chips have been composted, do not transport pine chips out of infested counties. Composting chips prior to transport should greatly reduce or eliminate the potential for disease spread.

- Within infested areas, the use of infected chips for mulch would contribute little to the total number of sources of the disease. However, it is best to use chips near the site of origin as it will minimize dispersal of the pathogen to uninfested

- areas within an infested county. Avoid using potentially infested chips near healthy pines or Douglas-fir.

LOGS

- Do not transport pine logs with intact bark out of infested counties, unless you are positive the logs originated from an uninfested area. Removing all bark prior to transport should greatly reduce the potential for disease spread, as would prompt milling of the logs.

- Pine bark should not be transported out of infested counties. Handling, disposal and use is the same as for other pine green waste.

OTHER

- Any untreated pine material that originates within infested counties is a potential source of pine pitch canker disease, unless the material has been treated to eliminate the disease or has been certified to be disease-free.

BACKGROUND

Pine pitch canker is a fungal disease that infects many species of pine trees. It infects Monterey pine Christmas trees and has been found in ornamental Douglas-fir at one location in Santa Cruz County. First discovered in California in 1986, its range is spreading and now includes 16 coastal and adjacent inland counties from Mendocino to San Diego. There is no cure and thousands of Monterey and Bishop pine trees have been killed.

Bark beetles, which carry the fungus, primarily infest Monterey and Bishop pines but also feed and breed on inland forest trees such as ponderosa pine. As yet, the disease has not been found in the Sierra Nevada or other heavily forested parts of the state. Transport, disposal and use of diseased material should be done so as not to spread the disease to uninfested areas. Insects spread the disease locally, but people are responsible for long-distance spread. Pine firewood, logs, chips, branches, needles, cones, and trees may all be a source of the disease.

University of California scientists are currently doing studies to characterize the survival of the pitch canker fungus, Fusarium subglutinans f.sp. pini and associated insects in pine green waste, but the full results are not yet in. The fungus can survive in cut wood up to a year. The fungus also survives in soil up to 8 weeks or more. Insects may survive in cut wood or chips for many months. Chipping does not eliminate insects. When branch tips infested with twig beetles are chipped, some insects may

emerge up to 12 weeks after chipping. Undoubtedly, some insects will survive even longer in chipped material. All of these findings implicate pine green waste as a viable source for the spread of pine pitch canker disease.

This position paper was developed by the Pitch Canker Task Force and approved on *January 23, 1997* . It reflects conditions current as of that date.

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Last edited June 26, 2000

Pitch Canker Task Force
California Forest Pest Council

Guidelines for Handling Woody Material

Infected with the Pitch Canker Fungus

Pitch canker is a fungal disease that infects many species of pine trees and Douglas-fir, but is most likely to be encountered on Monterey, Bishop, or knobcone pines. First discovered in California in 1986, the disease is spreading. Preventing spread is important because once pitch canker becomes established in an area there is no way to stop it from infecting and killing trees. No cure or preventative exists. Insects spread the disease locally, but people are responsible for long-distance spread. The fungus can survive in cut wood or soil for a year or more. Insects that carry the fungus may survive in cut wood or chips for many months. Chipping does eliminate most insects. Pine firewood, logs, chips, branches, needles, cones, trees and seedlings may all be a source of the pitch canker pathogen.

Counties with infestations of pitch canker include Alameda, Contra Costa, Los Angeles, Marin, Monterey, Mendocino, Napa, Orange, San Benito, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, and Ventura. Infestations may be localized or widespread depending upon the county. Know if you are in an infested area. If you are unsure, assume you are within an infested area whenever working with pine within an infested county. In order to reduce the spread of pitch canker to uninfested areas, the Pitch Canker Task Force suggests the following guidelines. Compliance with these guidelines is voluntary, except for commodities regulated by the California Department of Forestry and Fire Protection (CDF) or California County Agricultural Commissioners.

CDF has authority to impose conditions on the commercial harvest of trees from timberland. For all timber operations regulated by CDF, the Department must be informed if pitch canker is present within the operating area. The State Board of Forestry has declared a Zone of Infestation (ZOI) that largely coincides with the infested counties mentioned above and can be checked on the pitch canker website.

Pitch Canker is a "B"-rated disease by the California Department of Food and Agriculture. As a result, the local or destination California County Agricultural Commissioner may restrict the movement of known infected host material. If you are planning to move diseased material from an infested to uninfested area, contact the local and/or destination agricultural commissioners' offices to determine if there are any restrictions.

GUIDELINES

Guidelines are divided into two sections:
Guidelines for various commodities – seeds, chips, compost, firewood, logs and lumber, nursery stock and Christmas trees, imported pine material, and other commodities
Guidelines for various clientele – homeowners, arborists and tree care workers, firewood cutters, registered professional foresters and licensed timber operators, and nurserymen and Christmas tree growers.
The first category addresses concerns and recommendations for specific types of woody material. The second section addresses concerns and recommendations for specific clientele that handle infected woody material. It is not necessary to read through the entire set of guidelines. For each section, consult the subcategories that apply to you.

I. GUIDELINES FOR VARIOUS COMMODITIES

SEEDS

Seeds collected in pitch canker infested areas may carry the pathogen, even if they are taken from cones on apparently healthy trees. Treatments which sterilize the surface of the seed will not eliminate internal infections, therefore pine seeds should not be transported out of pitch canker infested areas.

CHIPS

- Chipping infected wood will reduce but not eliminate insects that carry the pitch canker pathogen. Chipping has little impact on pathogen survival and may serve to more thoroughly distribute the pathogen among the chips through contamination.
- The preferred management option for infected, chipped material is to keep it within infested areas.
- Within infested areas, the use of infected chips for mulch would contribute little to the total number of sources of the disease. However, it is best to use chips near the site of origin as it will minimize dispersal of the pathogen to uninfested areas within an infested county. Avoid using potentially infested chips near healthy pines or Douglas-fir.
- Material that is composted under a treatment regime that eliminates the pitch canker pathogen (see guidelines below) may be transported out of infested counties.

- For chips that are not composted or otherwise treated to eliminate the pathogen, the following will greatly reduce the possibility of pathogen spread when said material is transported out of infested counties:
  - the transportation route is free of indigenous or planted pines
  - the material is shipped in tightly enclosed trucks
  - no indigenous or planted pine forests are within a ten mile radius of the destination area.

COMPOSTING

Composting can be an effective means of eliminating the pitch canker pathogen from infected branches. The composting operation should be conducted as close as possible to the source of the infected material.

Wood to be composted should be chipped and mixed with a source of nitrogen such as grass clippings or manure. Elimination of the pathogen requires exposure to 50 C (120 F) or higher for at least 10 days. As it will be necessary to turn the pile to ensure exposure of all material to the higher temperatures at the interior, the duration of the composting will necessarily be longer than 10 days. Standard commercial composting operations will ordinarily exceed the minimum time and temperature required to kill the pathogen, but if this is in doubt, temperatures should be monitored to confirm they are high enough. Note that moist conditions in a compost pile facilitate the elimination of the fungus. If dry heat is used, as by simply placing logs under plastic, higher temperatures may be required to kill the fungus.

FIREWOOD

- Do not transport pine firewood out of infested counties, either for sale or for personal use. If you are traveling from an infested area to camp elsewhere, take another type of firewood with you, such as oak or cedar, or purchase firewood at your destination.
- If you are camping within an infested county, use up or leave behind any pine firewood you have with you. This should be done even if you brought the firewood with you from an uninfested county.

LOGS AND LUMBER

- The preferred management option for untreated pine logs is that they be milled within the Coastal Pitch Canker Zone of Infestation (see addendum).
- If pine logs originated from an uninfested area (defined as a minimum of 10 miles from the nearest known infected tree) <u>and</u> the source trees are inspected to

confirm they are disease-free, the logs pose little or no threat of spreading the pathogen out of the Zone of Infestation.

- Pine logs from infested areas pose little or no threat of spreading the pathogen out of the Zone of Infestation if the logs have received one of the following treatments:

- have been stockpiled for one year or more within the Zone of Infestation.

- heated to 160°F at the center of the log for 75 minutes

- have been completely debarked and all bole cankers removed

- When logs from within the Zone of Infestation are processed outside of the Zone, wood residue from those logs should not be stored, utilized, or disposed of in a manner that brings it in close proximity to living pines. Consider burying, burning, or composting the material. If it is used as a soil amendment or mulch, keep it away from living pines.
- Kiln-dried lumber (dried until the center of the largest dimensional piece reaches 140°F) can be shipped out of the Zone of infestation immediately after treatment.
- Air-dried lumber, provided it is free of deep-wood insects, does not present a hazard for pitch canker spread. Lumber which comes from trees that were dead or dying prior to their harvest could harbor deep-wood insects, and thus should be used within the Zone of Infestation or cured a minimum of one year prior to being moved out of the Zone.
- Pine bark should not be transported out of infested counties. Handling, disposal and use is the same as for chips.

NURSERY STOCK AND CHRISTMAS TREES

Purchasers of Choose and cut Christmas trees

- Individuals are advised not to transport Monterey pine Christmas trees (choose and cut) out of infested counties. Purchase and use trees locally; dispose of Monterey pine Christmas trees locally.

- Preferred methods of disposal include:

-- dispose of the tree promptly through a local recycling program, or

-- dispose at a local landfill which either buries or composts green waste, or

- chip the tree and compost the chips or use them as a mulch around your home.

Sellers of Nursery Stock and Christmas Trees

Christmas tree growers

The best approach to management of pitch canker is to prevent it from becoming established. The pitch canker fungus can be introduced to a Christmas farm as contaminated seed, or as infected seedlings. To avoid such problems, do not use seed that originated within the Zone of Infestation and be sure that seedlings are disease-free. If you do use seed from within the Zone of Infestation, treat the seed prior to use and do not transport it out of the Zone of Infestation. The pathogen can also survive in soil and consequently, it is advisable to remove soil from tools or equipment that have been used in an infested area before moving them to a non-infested area; a high-pressure water wash can be used for this purpose. Additionally, wood-by-products (e.g. shredded fir and pine bark) or compost material used in growing media should be from a source free of pitch canker.

Once pitch canker has become established, it is possible to manage the problem through timely removal of infected trees and treatment of soil. Removal should include the stump and as much of the root system as possible. Disposal of the infected material should be undertaken according to the above guidelines for arborists and tree care workers. Spot fumigation with registered materials can be used to eliminate the fungus from soil at the site of tree removal. Consult with your Country Agricultural Commissioner or U.C. Cooperative Extension office for specific treatment options. On replanting, trees should be closely monitored for development of pitch canker symptoms. If trees become symptomatic they should be removed and the site retreated.

Guidelines for growers of nursery stock

The pitch canker pathogen, *Fusarium circinatum,* is a "B" rated pest in California. All nursery stock sold in California must be free from "B" rated pests unless sold under a "buyer - seller agreement". Growers of nursery stock must apply for a "License To Sell Nursery Stock" and are subject to at least annual inspection to assure that State standards for pest cleanliness, labeling and quality are being met. For a "B" rated pest like the pitch canker pathogen, the standard of cleanliness is to be "free from," meaning that all nursery stock shipments in California must be free from visual symptoms of pitch canker. It is your Agriculture Commissioner's responsibility to perform visual inspections and determine if the nursery stock meets the "free from" standard of cleanliness, and if it does, to issue California Nursery Stock Certificates for Interstate and Intrastate Shipments (CNSCs).

If you are operating a nursery within the Zone of Infestation, it is recommended that you work with your County Agriculture Commissioner to determine if you have susceptible stock and to acquire and maintain a "free from" pest status for your nursery. Most species of *Pinus* are susceptible to pitch canker and are considered possible carriers of the pitch canker pathogen. This includes nearly all native California pine species as well as many non-native pine species. Since pitch canker can be soil borne, it is recommended that only bare root stock be shipped outside the Zone of

Infestation. Nurseries located within the Zone of Infestation and producing susceptible species of pines should be monitored and tested for *Fusarium circinatum* at a California Department of Food and Agriculture certified laboratory. Susceptible pines should only be sold if tested and found free of pitch canker, even within the Zone of Infestation. Testing specifications may need to be tailored to each individual case but example protocols are available from your Agricultural Commissioner or Cooperative Extension offices. The Agricultural Commissioner, Cooperative Extension, along with many private foresters and nursery professionals can give you valuable information on ways to raise your nursery stock to minimize the risk of infection. Your nursery may enter into a compliance agreement with your Agricultural Commissioner to help facilitate the movement of "free from" nursery stock of susceptible species.

Sanitation practices in your nursery are critical to ensure a standard of cleanliness that qualifies your stock for CNSCs. Since the pitch canker pathogen is readily transferred, contaminated tools, equipment, etc. can transmit pitch canker to susceptible pines. All tools, equipment, etc. that you use should be routinely sanitized between uses with Lysol or other suitable solution. Each nursery operation needs to be evaluated to determine the most effective means to manage pitch canker. It is necessary to work with your Agricultural Commissioner and Cooperative Extension personnel to control this destructive tree disease.

Shipments with CNSCs need not be held for inspection in California, but are subject to review by the Agricultural Commissioner of the receiving county. The destination Agricultural Commissioner may verify the shipment meets the State standards for nursery stock cleanliness. If pitch canker is found in your shipment, the destination Agricultural Commissioner may, at your expense, destroy the infected part of the shipment, return it to your nursery, or have you make other arrangements, or may approve a "Buyer/Seller Agreement."

Note. The Pitch Canker Task Force recommends that in addition to meeting the California standards for "free from" that Monterey pine growing stock be lab tested to determine whether the pitch canker pathogen is present. We believe that visible inspection is not adequate to determine "free from" status. We encourage nurserymen to enter into voluntary compliance agreements in the county of origin. Seedling buyers need to be aware that there is a significantly increased risk of pitch canker pathogen spread if they purchase stock that has not been lab tested for the pathogen.

IMPORTED PINE MATERIAL

- Pitch canker occurs naturally in the southeastern United States and Mexico and has been introduced to some other countries. It is not known how pitch canker came to California, but the closest possible sources are the Southeast and Mexico. In the southeastern US, pitch canker is distributed from Virginia to Florida and west to eastern Texas. The complete distribution in Mexico is

unknown, but it occurs in at least 14 states, from the Texas border into central Mexico.

- Pine material from these areas could potentially be contaminated with or infected by the pitch canker pathogen. For example, it was recently discovered that bales of pine needles imported into California from Georgia were contaminated with the pathogen.
- Only import pine material from these areas if it is known to be free of pitch canker. If infected or contaminated material is imported, it should be treated to eliminate the pathogen or only used in settings far removed from living pines.

OTHER

Any untreated pine material that originates within infested counties is a potential source of pitch canker disease, unless the material has been treated to eliminate the disease or has been certified to be disease-free.

II. GUIDELINES FOR VARIOUS CLIENTELE

HOMEOWNERS (for related information, see the press release "Living With Pines Infested With Pitch Canker".)

Tree pruning and cutting

- Tools and machinery which are used to prune, cut, or chip trees with pitch canker disease WILL BECOME CONTAMINATED with the pitch canker fungus. If pitch canker is already present on your property, the use of contaminated tools is not likely to spread the disease any more than would occur naturally.
- If contaminated tools are to be used in an area free of pitch canker, the tools and machinery should be cleaned and sterilized before use. Lysol® or a 10% solution of bleach (1 part industrial bleach in 9 parts water) are effective sterilants. A two minute soak time is recommended when using bleach. A logical alternative to cleaning of equipment is to reserve one set of equipment for use only in infested areas and another set for use only in uninfested areas.

Wood Disposal

- The best alternative for reducing the spread of pitch canker is to keep wood from infected trees on site.
- Logs from diseased trees may be split for firewood for local use, but the wood should be seasoned beneath a tightly sealed, clear plastic tarp to prevent the buildup of destructive insects. California Department of Forestry and Fire Protection **TREE NOTE #3, Controlling Bark Beetles in Wood Residue and**

Firewood, provides specific guidelines for firewood tarping. Do not stack pine firewood next to living pine trees or transport it to uninfested counties.

- Limbs and small pieces of wood from diseased trees may be chipped and the mulch deposited on site or they may be burned.
- Any residual woody material that is removed from the site should be tightly covered with a tarp during transit. Consult with county waste management staff for disposal options. Do not transport diseased wood out of infested counties.

ARBORISTS AND TREE CARE WORKERS

- Tools and machinery which are used to prune, cut, or chip trees with pitch canker disease WILL BECOME CONTAMINATED with the pitch canker fungus and should be cleaned and sterilized before use on uninfected trees or in uninfested areas. Lysol® or a 10% solution of bleach (1 part industrial bleach in 9 parts water) are effective sterilants. A two minute soak time is recommended when using bleach. A logical alternative to repeated cleaning of equipment is to reserve one set of equipment for use only in infested areas and another set for use only in uninfested areas.
- Limbs and small pieces of wood from diseased trees may be chipped and the mulch deposited on site or they may be burned. Any material that is removed from the site should be tightly covered with a tarp during transit and taken to a designated disposal facility for prompt burial, chipping and composting, or burning. Do not transport diseased wood out of infested counties.
- Logs from diseased trees may be split for firewood for the landowner for local use. Advise the landowner to season the wood beneath a tightly sealed, clear plastic tarp to prevent the buildup of destructive insects. California Department of Forestry and Fire Protection **TREE NOTE #3, Controlling Bark Beetles in Wood Residue and Firewood**, provides specific guidelines for firewood tarping.

  Do not stack pine firewood next to living pine trees or transport it to uninfested counties.
- Logs that are removed from the site should be taken to a designated disposal facility for prompt burial, chipping and composting, or burning. Do not transport logs from diseased trees out of infested counties unless they are treated according to the log treatment protocol described in Section I of the Guidelines.
- If you are outside of the Zone of Infestation, contact CDF or the County Agricultural Commissioner's office to report trees you suspect might have pitch canker.
- Make sure that clients and co-workers are aware of these guidelines.

FIREWOOD CUTTERS

- Tools and machinery which are used to cut trees with pitch canker disease WILL BECOME CONTAMINATED with the pitch canker fungus. There is little chance of spreading pitch canker if contaminated tools are only used on dead trees or on trees that are not pines. However, if contaminated tools or machinery will be used on living pines, the tools should be cleaned and sterilized before use on uninfected trees or in uninfested areas. Lysol® or a 10% solution of bleach (1 part industrial bleach in 9 parts water) are effective sterilants. A two minute soak time is recommended when using bleach. A logical alternative to repeated cleaning of equipment is to reserve one set of equipment for use only in infested areas and another set for use only in uninfested areas.
- Do not transport pine firewood out of infested counties. Sell pine firewood for local use only.

REGISTERED PROFESSIONAL FORESTERS AND LICENSED TIMBER OPERATORS

On June 4, 1997 the State Board of Forestry passed a resolution establishing the Coastal Pitch Canker Zone of Infestation. The Zone encompasses all or parts of 21 counties on or near the coast from Mendocino County to San Diego County. Infested counties are listed at the beginning of this document.

Map of the Zone of Infestation. The Zone includes all infested areas as well as adjacent areas that might reasonably be expected to become infested in the near future. The distribution of the disease is discontinuous and thus there are infested as well as uninfested areas within the Zone.

- Know when you are working within an infested area.

- The Department of Forestry and Fire Protection (CDF) has the authority to impose conditions on the commercial harvest of trees from timberland within the Zone of Infestation. Such actions are be carried-out on a case by case basis and depend upon the harvest operation's potential to contribute to disease spread. For all timber operations regulated by the Department, the Department must be informed if pitch canker is present within the operating area.
- Do not transport infected or contaminated material to areas that are free of the disease.
- When cutting or pruning a diseased tree, clean tools with a disinfectant before using them in uninfested areas. Lysol® or a 10% solution of bleach (1 part household bleach in 9 parts water) are effective sterilants. A two minute soak time is recommended when using bleach.

- If you are outside of the Zone of Infestation, contact CDF or the County Agricultural Commissioner's office to report trees you suspect might have pitch canker.
- Make sure that clients and co-workers are aware of these guidelines.

The initial draft of this position paper was developed by the Pitch Canker Task Force and approved on January 23, 1997. It was amended and reapproved on September 7, 2000 and reflects conditions current as of that date.

Position Paper on the Retention of Pines Infected with Pitch Canker
(Revised September 25, 2001)

The purpose of this document is to update the position of the Pitch Canker Task Force concerning when the presence of pitch canker justifies the removal of a diseased tree. Decisions concerning tree removal are often complex and the following information is a general policy statement and not a substitute for on-site professional hazard tree evaluation.

Monterey pine, along with many other pine species, is susceptible to pitch canker. The earliest symptom of pitch canker is dieback in the canopy, caused by infections on individual branches. Infections on large branches and the main stem of a tree can lead to top-kill and, in some cases, death of the entire tree. Trees differ in their susceptibility to pitch canker (see "What is Genetic Resistance?"), but nearly all will sustain some infections. Thus, when a tree shows early symptoms of pitch canker, it is not possible to predict hoe far the disease will progress in that tree. Recent research indicates that approximately 10% of Monterey pines are at least somewhat resistant to pitch canker, and will not sustain serious damage from this disease. Furthermore, some trees that do become heavily infected will recover from pitch canker.

Pitch canker infection is not a sole reason to remove a tree. The decision to remove a tree should be based on more general criteria, such as safety. Thus, if a tree has been deemed hazardous for any reason, it should be removed, regardless of its prospects for recovery from pitch canker.

Any recovery of the tree will be from living material. Infected trees may have numerous dead branches or the top section of the tree may be dead. Dead parts of the tree will not recover and will become increasingly weakened and unpredictable over time. Large dead material should be mitigated as soon as possible. Sometimes the tree may need to be removed even if it shows signs of recovery.

Most pitch canker affected trees will be found in areas where the disease is already present, and the above policy will be applicable. However, where pitch canker occurs in an area that is otherwise free of the disease, more aggressive might be appropriate. To determine if this is applicable to your situation, contact your city forester, county agricultural commissioner, the Department of Forestry and Fire Protection, or your local U.C. Cooperative Extension office. Please keep in mind that county or municipal regulations may require that a permit be obtained prior to tree removal.

TALKING TREES WITH YOUR CONTRACTOR

The largest single physical impact to trees in our urban forest occurs during the process of modifying the human environment, or more simply put , building something. Significant changes in a tree's soil, water, energy, and biological resources can occur in this process.

Carmel-by-the-Sea's urban forest is one of the unifying elements of the community. Most lots have trees that are owned by individual property owners, but these individual trees are part of the larger forest that is enjoyed and appreciated by all. Tree-generated values impact psychological, social, and biological aspects of daily life. Trees also add tremendous monetary value to the site on which they grow.

If you are planning to modify your human environment, it is critical to the health of the trees on your site to communicate with your architect and contractor thee care that must be employed regarding tree health and safety to ensure that the work to be done does not upset the balance needed for tree survival. In this way you can avoid the disappointment and cost associated with having to remove a dead or unsafe tree once the project is complete.

The following are some tips for avoiding tree damage during construction:

Soil Compaction

What happens below the ground is more important than what meets the eye above ground. The key to tree survival in the years following construction is protection of the roots during construction. This is probably the most insidious problem because the results of compaction cutting off air and water passages in the soil show up slowly. When barriers are not possible to keep away vehicles and foot traffic, other protective methods that can be used include: spreading several inches of wood chips; pumping concrete from the truck through conveyor pipes instead of driving over root systems; and bridging root areas with plates of steel.

Severing roots

Some cutting of roots near construction is inevitable, but much is avoidable. For example, the routing of underground utilities does not have to follow a straight line from street to house. Careful route selection can often avoid important trees. When that is not possible, tunneling is a good way to reduce damage. To reduce trenching for foundations, posts and pillars can be substituted for foundations and walls.

Drainage Changes

If terrain is altered, there will be a change in how water drains from the land. If flows are created that add too much moisture to a wooded site, a drainage system may be needed to maintain the previous amount of moisture (which provided the natural growing conditions for the existing trees). Similarly, existing trees along the edge of a new pond may eventually die from their roots suffocating. On sites deprived of water, irrigation may be needed to maintain existing trees.

Soil Chemistry

Poisoning or other wise altering the soil can result in weakened trees, making them more susceptible to insect and disease. In some cases, trees can be killed outright within a few years after construction. To prevent adverse effects on soil chemistry:

- Spread heavy plastic tarp where concrete is to be mixed or sheetrock will be cut. The alkalinity of these materials can change the soil pH.
- Read labels. Do not use wood products containing pentachlorophenol. These are deadly to roots. CCA-treated lumber (greenish color) is a safer alternative
- Paint brushes and tools should not be cleaned over tree roots.
- Chemical wastes (paint thinner, etc...) should be disposed of properly and not drained on site. Local sanitary authorities can advise on recommended disposal methods.

There are many techniques that will help save trees during construction, but this is only one part of the challenge. The key to success is communication. It begins with the property owner making it very clear to the architect that mature trees on a lot are just as important as the size of the kitchen. In fact , you may want to seek out an architect who has an interest and has experience designing with trees in mind.

Most importantly, communication with the actual builder is essential. Many builders sympathize with the need to save tree, but often they view it as too time consuming or otherwise costly. Still others may not know much about tree saving techniques as you do, so there is an education challenge.

Finally, there are dozer operator, truck drivers, painters, masons, and a small army of others who are on the site daily. While it is usually not possible to work with each one or even visit the site daily, it is possible to convince contractors and foreman that you are serious in your desire to save trees and that they need to relay this concern to their workers.

CARING FOR THE COAST LIVE OAK

The majestic Coast Live Oak that we enjoy in Carmel is an integral part of the landscape. Since this is a native species, it is well adapted to our climate, soil, and geographic environment. Native oaks, when young, are very adaptable and fairly quick growing, making them excellent landscape assets.

The Coast Live Oak is a hardy tree that provides beauty, shade, and is essential to many species of birds and animals. Oaks increase property value - a single mature tree can add thousands of dollars to the value of a homesite. Under ideal conditions, oaks should live for hundreds of years.

While oaks are hardy, mature trees cannot tolerate many changes. They are sometimes subjected to stress which could endanger their lives.

Three items to consider are:

#1. Watering

Once established, native live oaks need little or no irrigation to survive, since they

are adapted to this climate, but they may benefit from some watering and fertilizing. Do not over water. Damage due to over watering may not appear immediately, but will hasten the demise of your prized tree.

When watering, (and it is best to water in the fall or winter), keep water at least four feet from the trunk of an oak. Moist, warm soil near the base of a native oak promotes crown and root rot. Water on the outer edge of the root feeding zone, which is beneath the tips of the outer branches. Irrigation should be by the "deep watering method" only once or twice a season.

Frequent, shallow watering not only encourages root rot, it also results in ineffective, shallow roots, a needless waste of the tree's energy. When watering, you can use a soaker hose, or deep water with a probe attached to your hose.

A good mulch three to four inches deep out to the drip line (outer tips of branches) is helpful in retaining moisture and eliminating competing plants. Avoid raking within the root zone of trees.

Fertilizing can be helpful. For large trees, it is best to apply fertilizer in holes spaced two feet apart — out at the drip line.

#2. Grading

Changing the surface around the base of an oak can be detrimental to its health. Filling or grading soil away from trees results in injury to the roots since nearly

all of the lateral root system occurs within the top three feet of soil. Also, this leaves only the poorest soil in which trees cannot be expected to do well.

If fill is necessary, the common practice is to leave a pit around the trunk of the tree. Wall up to the rim of this pit with rock or brick to allow air to reach the trunk and crown of the tree. Since heavy fills may kill the tree despite this precaution, avoid fills whenever possible.

Grading the soil away from the oak tree is especially detrimental to the roots since it destroys the trees' power to gain nutrients and moisture essential for growth.

#3 Planting Near Oaks

Planting lawns, flowers, ivy, ferns, or shrubs which require extensive watering around the base of oaks can be detrimental to the trees in that the roots could get waterlogged and rot. Only drought resistant plants that require no summer watering should be selected.

There are a number of plants, some of which are native to California that can be grown beneath oaks. For an extensive listing of compatible natives to plant around oaks, contact the city forester.

I place of plants, other types of ground cover can be used to landscape beneath oaks. Cobbles, gravel, and redwood bark are good examples, when installed properly, that do not interfere with the roots' ability to obtain oxygen.

If you have questions or need additional information, please call the city forester at 624-3543.

ADOPT A TREE PROGRAM

Want to help your favorite city tree survive - that tree in front of your house or store? Then why not join the "ADOPT A TREE" program co-sponsored by the Carmel Soroptomist Club and Friends of Carmel Forest.

Many trees in the urban forest are subject to stress and lead a precarious life due to mankind's "improvements," i.e. paving, compacting, cuts and fills and over and under watering. Also, nature does not always cooperate. Bark beetles attack stressed trees; the drought, now in its fifth year, causes problems.

So what can you do? What is required to "Adopt a Tree?"

The age and species of the tree will determine what is required. But they will all require (1) deep root watering, (2) mulching and some fertilization.

Seedlings

All young trees, regardless of species, that are newly planted or up to two feet tall require sufficient water until the roots are able to tap available ground water. They need water every two weeks. Mix in a little Miracle-Gro® or spread a small amount of long lasting, slow release Osmocote® fertilizer around the base.

If you are caring for a seedling or a young tree, why not measure its height and see how much it has grown in a year and let us know.

Watering

Trees should be deep watered and fertilized a couple of times during the fall and winter. It is important that the watering be slow and deep to maximize absorption by the tree's feeder roots and to avoid wasting water form run-off. Water at least 4 feet away from the trunks. The objective is to get the soil around the tree wet to a depth of 18 to 24 inches. It takes around 10 gallons of water for each 10 square feet of root area. If you can reach your adopted tree with a hose, use a soaker placed around the tree out at the drip line (outer branches of tree).

If you choose to use a deep watering probe, insert the probe into the soil at an angle to a depth of 12 to 18 inches every 3 feet around the entire drip line of the tree and let it run for 8 to 10 minutes at the location of each penetration. You can buy a watering probe for four or five dollars at a hardware store - or better yet, just borrow one from Friends of Carmel Forest.

If you are hauling the water, let it percolate slowly into the soil. You may want to use a rubber trash container. Fill it with water and poke a few small holes in the bottom for slow drip into the soil. This works well.

Mulching

All trees will benefit from a good, deep 3-inch mulch. The mulch will help retain soil moisture, reduce soil cracking, which can damage small roots, prevent soil compaction from foot traffic and reduce weed growth.

Quite often the Forestry Department has wood chip mulch available from branches and leaves they have ground up. So call them if to see if any is available. Otherwise, you can buy mulch from a garden shop.

Bark Beetles

Eradication of Red Turpentine Bark Beetles.

Stressed Monterey pines are prone to Bark Beetle infestation and construction sites with new lumber attract these beetles. So, be aware of these potential tree killers.

It is quite simple to spot a tree that has been infested, by the Bark Beetle. There will be a pinkish-colored sawdust or fine popcorn-like material in small heaps, usually somewhere around the base of the pine. This is called "frass", and it is the digested wood from the beetle's trail. I one looks up from the frass, a "pitch tube" entrance hole marker can often be discovered. This is a small clump (about ¾" in diameter) of sticky material, ranging in color from light pink to brownish-red, with a small hole in the center. Beetle presence over a short time will also cause yellowing and death of individual branches. If these conditions exist, please contact the City Forester's office for their pamphlet on eradication of Bark Beetles.

Dr. Roy Thomas reports success in eliminating the Bark Beetle by using termite spray available at hardware stores. Just put the tube into the beetle hole and spray. It's worth a try!

GROW YOUR OWN OAK TREE

Oaks are easy to grow and develop rapidly. Trees that best survive are the native trees that have evolved genetic traits favoring the local conditions of soil, moisture, climate, etc. By planting acorns from local trees, you maximize chances for survival and minimize damaging local stock by introducing trees with poorly adapted genes

Here's how to proceed:

1. Collect acorns in the fall from healthy, vigorous trees in your neighborhood – from the tree or under it on the ground, choosing large acorns. Remove the cap if it is attached.

2. Soak the acorns for one hour if picked off the tree or 24 hours if taken from the ground. Add ½ cup of bleach per gallon to the water. Discard any acorns that float or have holes, cracks or other defects. Dry the acorns on towels, newspaper or other absorbent material.

3. Pack the acorns in zip-lock plastic bags and place in the refrigerator (not freezer) for at least a month. This should stimulate faster and more complete germination. Check the stored acorns occasionally for mold. If mold develops, repeat the soaking and drying and return to the refrigerator. Acorns can be stored in the refrigerator for several months.

4. After refrigeration, plant the acorn in the ground or in a container (see Paragraph 6). When planting in the ground, choose a sunny, weed-free spot with well drained soil. With a hand trowel or shovel, dig a shallow hole. Loosen the soil several inches under the hole an add a pinch of Miracle-Gro®. Plant the acorn, sideways, one inch below the surface. Water lightly.

5. Water weekly until the seedling is well established. Do not over-water; this will cause the acorn to rot. After the seedling is established, watering two or three times during the dry season should be sufficient.

6. For container-grown seedlings, use a quart milk carton or similar container slit near the bottom for drainage. Fill with potting soil. Thoroughly moisten the soil and place on a saucer or pie tin. After planting acorn, place the container near a window where it will receive adequate light.

7. Container-grown seedlings should be transferred to the planting site when 3 to 4 inches high. Scrape a circle two feet in diameter around the seedling to remove other vegetation, thus eliminating competition for moisture. Placing some type of mulch around the seedling will also help conserve moisture and discourage competing plants.

For further information, call the Carmel Forestry Department at 624-3543. Acorns are available from Friends of Carmel forest by calling 625-2855.

HOW BEAUTIFUL TREES CAN ADD SUSTANTIAL VALUE TO YOUR HOME

Trees not only affect our living environment, they also have a direct impact on the value of our homes.

Trees perform a variety of functions in the landscape, all of which impact the quality of our lives and our pocketbooks.

Trees reduce air pollution noise and light pollution, reduce soil erosion and water run-off, aid in climate control, and improve the viewshed and aesthetics of the neighborhood.

Research has shown that trees and landscape planting can save 20 to 25 percent of energy use in the home for both cooling and heating. In fact, without the moderating effect of trees, urban areas grow hotter and drier—an effect felt by anyone seeking the shade of a tree.

Numerous studies have shown that people are willing to pay more for homes that have trees on the property. But how much more? Depending on the area of the country, anywhere from 3 to 18 percent more.

So what does this mean for developers and the real estate business? Very simply this: in most cases homes with mature trees will sell for more and will sell faster.

Although developers often cite the increased cost of preserving existing trees, studies have shown that this extra cost is more than offset by the increased aesthetic value and marketability of the home. Trees not only increase in their individual value, but also add to adjacent property values.

If a community is going to remain economically viable—if it is going to attract long-term residents and businesses—the community must be concerned with its appearance livability and "feel." Protecting the community's natural resources—particularly trees and open space—contributes to a positive image for the community, and that translates into a sound economic base.

TIDY GARDENS OR BENIGN NELECT BY GARY GIRARD

With a title like that, you might be expecting a slanted article on perfection, but being the contrarian that I am, sometimes benign neglect can look very refreshing in a community driven by property values.

In fact, if you're a seasoned Carmel person, history paints a simpler picture o how individual gardens happened then. Those old gardens were often just the pine needles that dropped between the manzanitas, or a coffee can on the porch with a happy red geranium. It is now a romantic notion in our busy minds of how it used to be, but the times change and sophistication slips in on us. Sophistication has several meanings, but one obscure definition is the absence of nature.

Several years ago, I was asked to design a garden in a spot that I remembered for its old tangled growth and mysteriousness that only time can bring to a garden, and yes, it was neglected. I tried to be gentle with this almost spiritual feeling of the landscape, but lost in my effort to clean up before creating the new landscape. The completed garden took several months to develop, and when it was completed, it was new and fresh in a sort of negative way. The earlier essence was long gone and in its place was an adolescent waiting desperately for maturity.

I receive a number of landscape trade magazines and their pictures pridefully show the just finished, immature gardens with dots of color along the edge of a newly-sodded lawn with other just-planted shrubs in a gawky posture. All freshly mulched like the garden was just shipped in from the County Fair. If a person could add time as a quality in designing a garden, it would surely be included.

So the title of this piece is really just a subjective judgment and another dance around the old idea of what is beautiful. But beautiful doesn't have to be a consensus of opinion anymore than it has to follow obvious standards that lead to thoughtless boredom. A well-designed garden that becomes old and shows some neglect can be considered natural in a refreshingly laid-back way. It might even be considered real.

Gary Girard is a landscape architect an former Forest and Beach Commissioner

TREE NOTES

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION
Pete Wilson, Governor, State of California
Richard A. Wilson, Director
Douglas Wheeler, Secretary for Resources,The Resources Agency
NUMBER: 3
July 1996

Controlling Bark Beetles in Wood Residue and Firewood

Sherburn R. Sanborn
Forester, Resource Management, P.O. Box 670, Santa Rosa, CA 95402-0670
Revised 1996 by Donald R. Owen,
Forest Pest Specialist, 6105 Airport Rd., Redding, CA 96002.

Each year, timber losses in California forests due to bark beetle attack exceed those caused by wildland fire. Drought conditions worsen this situation. It was estimated that 10 million trees were killed throughout the state in 1989 and 1990 alone, destroying
enough timber to build one million three bedroom homes.

Many valuable urban landscape trees are also killed due to drought stress and bark beetle attack. In some urban areas of Southern California, pines are frequently killed by bark beetles transported in infested firewood obtained from dead and dying trees in the Southern Sierra Nevada (personal communication, Eric Oldar, CDF Service Forester). Firewood may harbor immature beetles (larvae) which complete their development, emerge, attack and kill nearby pines in the urban landscape. This problem may be occurring in other areas as well.

This article discusses several techniques that may be used by both forest landowners and urban dwellers to reduce tree mortality by reducing local bark beetle breeding sites. An important first step before applying any of the following techniques is to determine if a potential bark beetle problem exists. Next, identify the species of bark beetle infesting the wood as well as the species of tree (host) infested. Because host preference and life cycle are so variable among different species of bark beetles, reducing tree mortality may depend on

the proper selection and timing of control techniques. Because these techniques are preventative in nature, their use may be justified even where bark beetle problems do not exist. This is particularly true where high value trees, such as those in parks or residential areas, are at risk.

Firewood Pests and Regulations

Wood from tree removals, salvage logging, and forest thinning is often used for firewood. The freshly cut wood of many trees can attract bark beetles which can breed in it, while the wood of trees killed by bark beetles may harbor developing brood. Trees of particular importance are pine, true fir, Douglas-fir, elm and eucalyptus. Whenever wood is moved, there is a risk that associated insect and/or disease pathogens are moved as well. This can result in the introduction of new pests or exacerbate existing pest problems. Some bark beetle species become so numerous during periods of drought that they will mass attack and kill healthy trees.

Pine pitch canker is an incurable tree disease that has killed thousands of Monterey pines and other pines in the state. Bark beetles and other insects help move the disease around. Pine logs, firewood, branches, needles, and cones may all be a source of the
disease. This material should not transported from one part of the state to another unless you are sure it is disease-free. Contact your local Agricultural Commissioner's office or California Department of Forestry and Fire Protection forester to determine if you are in a pitch canker-infested area.

Elm wood is of particular concern because the European elm bark beetle which breeds in it vectors the Dutch Elm Disease (DED) fungus. The spread of DED over long distances has invariably been due to the movement of elm firewood from infested areas.

The eucalyptus longhorned borer (ELHB), a native of Australia, was introduced into Southern California in 1984. Since then, it has spread to a number locations in the state. Many mature eucalyptus trees have been killed in areas where this insect has
become well established. The movement of eucalyptus wood has become an increasing problem because ELHB and other introduced insects can be carried great distances in firewood. The transport of ELHB infested wood is prohibited under section
4714.5 of the Public Resources Code.

Firewood Tarping

Tarping and sealing wood piles with clear plastic is a very effective way to prevent the emergence of beetles from the wood. This technique will also prevent them from colonizing freshly cut un-infested wood. To properly tarp a wood pile you will need the
following materials: Six mil clear plastic sheeting of a size sufficient to cover your wood pile This material is available in various sizes at most hardware supply stores. If available, six mil ultra-violet (UV)resistant plastic sheeting such as CIL Durafilm
Polyethylene Greenhouse film is excellent. Do not use black plastic because beetles are attracted to areas that are lighter in color and they chew through it.

- Lumber such as 2X4's to use as runners to keep the wood off the ground.

- An old tarpaulin, carpet, cardboard, automobile tires or similar material to protect the plastic from tearing.

- Soil, gravel or other material to seal the plastic along the ground.

Figures 1 & 2 are examples of how to stack the wood. Use these examples and the following procedures to tarp it:

1. The wood stack can be any size provided it can be covered by a single sheet of plastic that will allow for 12 inches of overlap along the ground.

2. To aid in drying, keep the wood off the ground by stacking it on 2X4 runners. Placing the stack in partial sunlight will reduce drying time, minimize the breakdown of non-UV resistant plastic and render the wood unsuitable for beetle breeding.
3. Prior to covering the stack, make sure there are no sharp projections which could pierce the plastic. Place a tarpaulin, cardboard, automobile tires (see diagrams) or similar material over the top of the stack to protect the plastic.

4. Cover the stack with plastic allowing 12 inches of material to overlap along the ground (see diagram).

5. Seal overlap against the ground with soil, gravel or similar material. Tarp must be sealed entirely around the stack.

6. After sealing, the plastic may become tightly stretched over the wood stack. If this occurs, gently pull up on the plastic allowing 2-3 inches of slack to relieve strain. This will reduce punctures and tears If the plastic is held too firmly against the bark, tarpaulin, cardboard or other materials, beetles will get between that material and the plastic and escape by chewing their way out. This would necessitate retarping the wood.

7. Inspect tarping frequently for damage. Repair small holes and tears with duct tape. Larger tears may require retarping.

Wood should be tarped for one season after cutting, from April 1 until November 1. Firewood seasoned in this manner through one spring and summer will not support beetle colonization. Any beetle brood present in the wood when it is tarped will be killed. Wood that is tarped dries more rapidly, particularly during the winter.

Slash Treatment

Slash is woody material generally consisting of branches and tops of trees left behind after commercial logging or thinning operations. Those materials with bark still attached may become a breeding site for bark beetles and can lead to a bark beetle population buildup. There are several techniques which can be used to render this material unsuitable for beetle breeding.

Lop and scatter involves 1) severing branches from bolts 3 inches or larger in diameter, and 2) scattering the branches and bolts so that they receive maximum exposure to the sun. This technique is recommended where pine trees are being logged or thinned particularly when beetles of the genus *Ips* are already abundant. Heat from the sun increases the temperature under the bark and hastens drying. Both heat exposure and drying can greatly reduce the breeding success of bark beetles. To be effective, lop and scatter slash within one week of slash creation. As an alternative,
avoid activities in pine stands that will place "green" slash on the ground from February through June.

To be effective, the remaining techniques must be completed within five weeks of slash creation or before beetle broods emerge:

Piling and burning is another effective technique which will render the slash unsuitable for beetle colonization or will kill beetles infesting the slash. This may be a very cost effective approach in rural areas where burn permits (LE-7) can be obtained through CDF.

Chipping is a very effective way of reducing bark beetle population buildup in logging slash and wood residue from pruning, thinning or tree removal in urban areas. Chipping destroys most beetle brood present in the wood while leaving chips that are unsuitable for bark beetle breeding. Many tree services have chippers that can chip wood up to 12 inches in diameter. Whole-tree chippers are also available for biomass production.

Debarking logs, or bark removal, destroys the habitat where bark beetles breed and their larvae feed. Once removed, the bark and the wood are unsuitable for bark beetle breeding. The wood can then be left on site or used for firewood without concern. Wood that is still green or freshly cut is easier to debark than dry or seasoned wood. There are various devices available that can speed the process. They range from steel bars and chain saw attachments to commercial log debarking machines.

Chemical Control

Controlling bark beetle infestations through the application of pesticides have demonstrated varying levels of success. On commercial forest land, insecticides are costly and difficult to apply on a large scale. They can also disrupt the effect of natural enemies, and their effectiveness in controlling beetle outbreaks has been variable. In the urbanizing forest, it is possible to manage bark beetle-caused mortality with insecticide application as a temporary prevention measure or to reduce pocket killing. However, this should be considered a short term remedy used in conjunction with long term practices that improve the growing conditions for the tree.

Conclusion

Whichever technique(s) you choose, be sure to investigate the legal requirements pertinent to your activities. If you are involved in timber harvesting, insure that you are in compliance with the California Forest Practice Rules. The Registered Professional Forester (RPF) or Licensed Timber Operator (LTO) responsible for the timber harvest plan will be aware of current rules. If you plan to burn woody material, you will need a burn permit from the California Department of Forestry and Fire Protection (CDF) or other local agency. There are many communities that have ordinances restricting the removal of trees.

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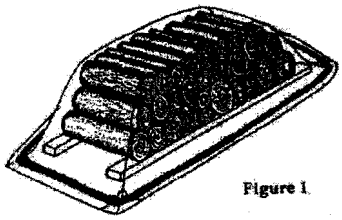
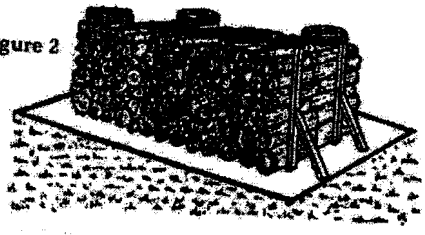


Figure 1

Figure 2



Principles and Recommendations Concerning Conservation of the Amount, Structure, and Integrity of Genetic Diversity of native Monterey Pines at Carmel-by-the-Sea and Environs

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Prepared: October 25, 2001

Introduction

Genetic diversity is important to the ability of Monterey pine to inhabit different environments and to its longterm survival as a species. Genetic diversity provides the potential for persistence of a species through various changes in the environment. For example, with changes in climate or introductions of new insects or diseases, there is more potential in a genetically diverse and healthy forest to accommodate and survive these influences, than in a genetically impoverished or stressed forest. The maintenance of genetic diversity is also a relatively inexpensive management tool, as genetically based traits are inherited from one generation to another, without requiring the constant input of resources to maintain them.

In Carmel and surrounding areas, Monterey pine grows in contrasting contexts including native forests, transportation corridors, planted greenbelt areas, and natural and planted residential settings. Each of these uses has implications for the genetic and ecological well-being of the native forests, in addition to the value of the specific use. For example, planted Monterey pines in urban environments will influence the genetic composition of the nearby native forests through pollen and seed movement. Depending on specific choices, planted trees can either complement or undermine the local adaptations and longterm viability of Monterey pine forests. Similarly, planted trees can either complement or detract from other processes and values of the native forests (e.g., wildlife habitat, soil composition, disease dynamics) depending on the specific decisions involved in planting projects. Because of the interconnections via genetic exchange, disease transfer, and ecological processes among the native Monterey pine forests and the various extended and introduced uses of Monterey pine, it is recommended that science-based information pertaining to the pines and other forest species and processes be appropriately considered and incorporated into decisions at the various scales (e.g., city, county, regional, state) and with the various constituencies (e.g., private, NGO, public) that influence Monterey pine forest health. Furthermore, it is recommended that any practice that involves selective removal of Monterey pine trees, or planting of trees, be carefully planned and reviewed in the context of the overall and longterm ecological and genetic consequences for Monterey pine forests.

Provided here are some principles and recommendations to assist in genetic conservation of Monterey pine. As there isn't much specific information on spatial structure of genetic diversity in the (former or current), Carmel-area forests or on distances of pollen travel within this region, the recommendations are mostly based on genetic principles and rules of thumb for genetic conservation.

General Genetic Principles

In general, it is best to maintain as much of the natural genetic diversity in Monterey pine as possible. Activities that can reduce genetic diversity include removing individual trees, harvesting/converting forested areas, planting clonal material, planting many seedlings from one parent tree or a narrow genetic base, etc.

The integrity or local adaptations of Monterey pine should be maintained. Activities that can compromise genetic integrity, over the long run, include planting trees from nonlocal or unknown sources.

The natural genetic diversity of Monterey pine may have spatial patterns. That is, the remaining (or former) trees in one geographic area (e.g., along the coast) may have some different types of genetic diversity or different adaptations than trees in other areas (e.g., further inland, higher elevation, different soil type, etc.). It is important, to the extent possible, to respect these patterns; maintaining the structure of genetic diversity.

Activities that tend to support the native levels and structure of genetic diversity in Monterey pine are the using seeds from local (native) trees in replanting programs, planting more seedlings than are desired at maturity, and allowing for natural selection to play a role in determining which trees survive, which remain healthy, and which reproduce.

Recommendations

1. Keep records on individual trees and forested areas that identifies, if possible, whether the trees are native or have been planted. For all current or future planting efforts, keep record of the genetic source of the seedlings (i.e., not just the nursery, but the geographic area from which the seeds were collected).
2. For any planting projects of Monterey pine (individual pines or reforesting areas):
    a. Use seeds collected from trees in a similar ecological/geographic area (i.e., rather than seeds from a distant or different area, from a different region of Monterey pine (e.g., Cambria), or imported seeds (e.g., from New Zealand). Be sure to match the characteristics of the source tree's environment with the planting environment. That is, until/unless there is further genetic information available at that time to warrant lumping, I would take the approach of keeping the seedlings segregated by 'site type' and using only those site-matched seedlings for replanting events.
    b. To the extent possible, allow natural screening by planting several seedlings and allowing for some to die or be removed later.
    c. Plant seedlings rather than clonal material, thereby maintaining more genetic diversity, unless there is a well-supported reason to plant clonal material.

3. Maintain seedbanks, if possible, of local native Monterey pine. To develop these seedbanks, the following principles should be employed:
    a. Avoid collecting from any non-native or planted trees (as the latter may not be local in origin).
    b. Sample from a range of tree sizes, as a proxy for tree age (and thus getting different pollen mixes and natural selection pressures, etc.). One could also sample the same tree in different years to get some variation.
    c. Sample from many native trees over the full natural range that they occur in the region. If possible, don't collect from immediate neighbors as they may be closely related and have similar genetic compositions.
    d. Avoid sampling from trees that are isolated by long distances from other Monterey pines. These trees, because of their distance from others, may have high levels of inbreeding in their seeds.
    e. Collect cones from several heights and different aspects of the tree. By collecting from different sites within the crown, you will again be increasing the chance that you're sampling from different pollen donors, different selection pressures (e.g., amount of heat due to differences in aspect) on the seeds (determining differential survival of seed, etc.), etc.
    f. Keep records on the location and site characteristics of each tree from which seed were collected.
    g. Maintain the identity (i.e., parent tree location/information) of the seed collected from each tree or area to allow proper matching for planting needs.
    h. In the absence of direct information on how genetic diversity is structured (or spatially arranged) in the Carmel area, use proxies such as: elevation, soil type, riparian or other habitat type, differences in associated vegetation, distance from the ocean, etc. That is, select trees from a range of these categories over the entire (Carmel) area.

4. If individual native trees, or forested areas, have to be removed (e.g., for safety or other reasons), collect seeds from these trees and deposit them in the seedbank prior to removal.

5. Avoid applying unnecessary filters in seed collecting, seedling development, or planting decisions. Rather, try to sample the native genetic diversity as broadly as possible and allow natural selection to play a role in determining which trees survive and reproduce in the long run. Strongly selecting for certain traits (e.g., fast growth, insect resistance) could have the inadvertent impact of removing some genetic diversity that could have been useful to Monterey pine in surviving future influences.

Related Issues

Education: There is a need to increase the genetic literacy among the general public as it pertains to the conservation and management of Monterey pine. There is lack of understanding of the long-term consequences of using a small genetic base (which is superficially appealing because of uniformity) for planting purposes. This lack of understanding may reduce the suite of options for conservation-related management. For example, one possible manifestation of genetic illiteracy could be public intolerance of diversity in planting stock and/or intolerance to accepting some survival risk (e.g., in the seedlings) by using an array of individuals rather than clones. Although it may be appealing to plant clonal Monterey pines that have some particular feature, doing so may—if planted in many copies over a broad area for a long period of time—contribute to lower genetic diversity in natural Monterey pine forests because of the lower genetic diversity in the pollen and seeds of these clonal trees. There is considerable evidence for inbreeding depression in Monterey pine. The public could assist in good genetic conservation strategies by using locally-adapted Monterey pine planting stock (rather than trees from a different geographic area or an unknown geographic source), by using seedlings rather than clonal material, and by planting a larger number of trees each with some survival risk rather than trying to install a few trees with perhaps lower individual survival risk but with less genetic diversity. This would allow more opportunity for natural selection, maintenance of genetic-environmental relationships, and maintenance of genetic diversity.

Pitch canker resistance: Introduced diseases stimulate debate and research concerning the most appropriate, if any, management response. Currently, the nature and genetic basis of resistance to pitch canker are not well understood. As a species, Monterey pine is one of the least resistant among the 23 pine species studied for resistance to pitch canker (in one study). Results of controlled studies may vary according to the source of genetic material for the pines, the type of fungal isolates used, the infection protocol, and how resistance is measured. One greenhouse study found little resistance to pitch canker among samples from the native mainland and Cedros populations of Monterey pine. In other studies, variability in susceptibility among individual trees of Monterey pine suggests there may be some genetic basis. The diversity within the fungus (measured in one system as vegetative compatibility groups, VCGs), coupled with evidence for recombination between VCGs of the fungus in the laboratory, suggest that there is the potential for a dynamic relationship between host and pathogen. Furthermore, there is the possibility that different genotypes of Monterey pine may have different susceptibilities to infection by different strains of the pathogen, although there is no evidence of this to-date for pathogen strains resident in California. However, exotic strains (from México and Florida) have been found that are more virulent than resident strains, based on growth chamber innoculations. Such strains could compromise genetic resistance in some Monterey pine genotypes.

Numerous laboratory, nursery, and field trials are in progress and planned which should elucidate genetic relationships. Any breeding and delivery program aimed at providing disease-resistant trees for use within the genetic sphere of influence for native Monterey pine populations should be well-informed about the genetic basis of resistance for that disease, the inheritance of the desired trait, its interaction with the environment, and the overall impact of artificially selected genotypes on the genetic diversity and population viability of Monterey pine. Any such program should not unnecessarily screen out potentially valuable genetic diversity. Deployment of propagules from such programs should proceed only when and if their use is well reasoned and well informed. Natural regeneration and selection processes should be encouraged and accommodated as much as possible, and unnecessary artificial selection should be avoided. Given the long-lived nature of Monterey pine and the uncertainty of how any resistance may play out over the lifetime of an individual tree, the potential for complex interactions between the pines and new variants of an introduced pathogen, and the potential to inadvertently screen out valuable genetic diversity, a cautious and conservative approach to any genetic manipulation motivated by introduced biotic influences is indicated. A crucial factor is that disease resistance is almost always just one of many components of fitness, and any selection for resistance is likely to incur a cost in the selection differential for other fitness components. A large palette of genetic diversity, expressed in good levels of regeneration, will allow scope for strong natural selection to operate in a biotic crisis.

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Appendix C: Shoreline Management Plan

City of Carmel-by-the-Sea

SHORELINE MANAGEMENT PLAN

Approved by the City Council
December 6 December 2001
Revised 12 November 2002

CARMEL-BY-THE-SEA

SHORELINE MANAGEMENT PLAN

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Section 1. INTRODUCTION: A Shoreline To Be Managed

To some, the concept of managing Carmel's shoreline may seem, at first, an impossible task. So many of its characteristic features appear to be out of our control: sparkling white sands that disappear and re-appear each year, ancient dunes, bluffs, rocky promontories, and decades-old Monterey cypress that are exposed to erosion from wind and wave, a vast and powerful ocean whose sea level appears to be on the rise, and intense winter storms generated by weather patterns that seem to be less predictable than in the past.

Photo 1 – *The Carmel Shoreline*

Yet, in the face of these powerful forces, the City of Carmel-by-the-Sea has shown that it is possible to maintain, protect, and even enhance its shoreline. Over the past half century, the City has embarked on a series of projects and programs that have:

- helped protect Carmel's coastal dunes, bluffs, and Scenic Road (including its infrastructure and houses) from erosion;
- provided and maintained ample horizontal and vertical shoreline access;

- maintained a landscape of native drought-tolerant and "natural-looking" plants that protect the dunes and upper bluffs; and most important; and

- provided for the health, safety, and welfare of the residents and visitors who enjoy the City's shoreline.

MANAGEMENT OF THE CARMEL SHORELINE

City Departments, Commissions, Task Forces

For many years, management of Carmel's shoreline was the responsibility of its Department of Public Works. In 1988, the City created a separate Forestry and Beach Department that shared some of the beach maintenance responsibilities with Public Works. Then, in 1995, Forestry and Beach became the Department of Forest, Parks, and Beach, a name that more accurately reflected its mission.

At present, responsibilities along Carmel's shoreline are still shared between the Public Works and Forest, Parks, and Beach Departments. The two departments work cooperatively on issues affecting the Carmel shoreline. They are both housed in the same building (on Junipero Avenue), and there is extensive formal and informal dialogue between the directors of the two departments. Regular maintenance along the Beach Bluff Pathway, litter and trash pick-up from the Pathway and beach areas, maintenance of trees, landscape plants, Pathway irrigation system, beach access stairways, and restroom facilities are all performed by personnel from the Forest, Parks, and Beach Department or City contractors. Maintenance and repairs of shoreline walls and revetments, beach access stairways and ramps, the Beach Bluff Pathway, storm drains, Scenic Road, and other structures, are the responsibility of the Department of Public Works.

Issues affecting the coastline are also dealt with by the City's Forest and Beach Commission. Members of this advisory group are appointed by the Carmel City Council. As with the department it advises, the Forest and Beach Commission grew out of the Forestry Commission in 1988.

On at least two occasions, the City Council has appointed task forces to deal with specific issues related to Carmel's shore. In response to the extensive beach bluff and structural damage caused by the devastating 1982/83 El Niño storms, the Carmel Beach Rehabilitation Task Force was created in 1983. It worked with City staff and consultants to oversee structural repairs during Phase I of the Carmel

Beach Rehabilitation Project. From 1984 through 1988, this Task Force assisted in Phase II: the planning and development of the Carmel Beach Bluff Pathway project.

In 1996, the City Council created the Carmel Beach Master Plan Task Force. This group worked with City staff and produced the Beach Master Plan that was approved by the City Council in 2000.

Previous Management Documents

Over the years, three documents have provided information and direction for management of the Carmel shoreline:

Beach Bluff Pathway Landscape Plan

Between 1985 and 1988, the Carmel Beach Rehabilitation Task Force and landscape architects Royston, Hanamoto, Alley, and Abey (RHAA) of Mill Valley, California, developed the landscape design plan for the Carmel Beach Bluff Pathway. Plants utilized in the design were chosen because they "fit" well with the Carmel shoreline environment; these native or "native-like" plants could thrive when exposed to salty air, coastal winds, and limited water.[1] This landscape plan and plant list were approved by Carmel's Forestry Commission, Planning Commission, and City Council, as well as the California Coastal Commission. The plan provides the framework for the City's current shoreline landscape. Approval of coastal permits for some of Carmel's recent shoreline projects has been based, in part, on conditions specifying that the City continue to follow the RHAA landscape plan.

Emergency Action Response Plan

In 1989, coastal biologist David Shonman and Assistant City Administrator Greg D'Ambrosio developed emergency response guidelines for dealing with damage to Carmel's beach and bluff. The Emergency Action Response Plan (EARP) was written primarily in the form of worksheets, describing procedures for shoreline monitoring and erosion repair. Carmel's Beach Master Plan, described below, recommends that the City:

> "Continue the implementation of the SHORELINE EMERGENCY ACTION RESPONSE PLAN ... to minimize the dangers to public safety and facilities that may be caused by winter storms or other

[1] The Task Force and landscape architects also chose plants whose leaves and flowers were "subdued" in color, to better match existing native coastal plants.

natural disasters."[2]

Beach Master Plan

In September 2000, the City Council approved the Beach Master Plan (BMP), which contains goals, objectives, and policies for dealing with the Carmel's shoreline.

Each of these documents deals with some aspect of managing Carmel's shoreline, but no one document constitutes a complete management manual. The RHAA plan, written more than a decade ago, has not been assiduously followed by the City. Many of the plants recommended in this City-approved landscape design have since been replaced by other species, for reasons that have never been documented. The Beach Master Plan omits mention of the numerous seawalls and revetments that line and support the beach bluffs. The Emergency Action Response Plan only deals with conditions that might be encountered along the shoreline south of Eighth Avenue. None of these plans gives guidance regarding the level of action along the shoreline that will require review by City planners in order to conform to the Carmel LCP and State coastal law. Finally, none of these plans serves as a practical document that City staff can use for managing the shoreline.

In 2001, the City received approval from the California Coastal Commission to repair its shoreline damaged during the 1997/98 El Niño storms.[3] One of the conditions of permit approval was that the City prepare a "comprehensive shoreline management plan."

Carmel Shoreline Management Plan

This Carmel Shoreline Management Plan is a response to the Coastal Commission's directive. It is also a response to concerns expressed by City staff and consultants regarding the need to consolidate prior documents into a single useable plan.

The Shoreline Management Plan addresses the topics suggested by the Coastal Commission while incorporating the Goals, Objectives, and Policies of the City's Beach Master Plan. It updates the Emergency Action Response Plan and incorporates the principles that guided the original RHAA landscape design. The Shoreline Management Plan replaces the Beach Master Plan and the Emergency

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[2] City of Carmel-by-the-Sea. Beach Master Plan, section (VI)(E)(OM-4). Sept. 2000.
[3] The permit was for the "Carmel Bluff and Beach Access Improvement Project" (Coastal Development Permit # 3-00-140), approved on April 13, 2001.

Action Response Plan. It now serves as a comprehensive document that will guide future management of the City's shoreline area, including its beaches, dunes, bluffs, landscape, and associated infrastructure.

The Shoreline Management Plan will be periodically updated to reflect new ordinances, policies, plans, and information necessary for optimal management of the City's shoreline. Pertinent information from the Del Mar and North Dunes Master Plan will be added to the Shoreline Management Plan upon adoption.

A Word About Words

This management plan deals with Carmel's beach, dunes, bluffs and bluff top, Ocean Avenue, Del Mar, Scenic Road, adjacent streets, and pedestrian easements. In the past, the City, its departments, commissions, task forces, documents, reports, and plans, all have used the word "beach" to refer to different parts of Carmel's coast. Sometimes "beach" has actually meant Carmel's sandy beach, but other times, it has referred to portions of the City's coastline, including its dunes, bluffs, and surrounding areas. In this management plan, "beach" specifically refers to the portions of Carmel's shoreline where sand is naturally deposited by wave action. "Dunes" refers to areas of wind-blown sand, especially landward of the beach. When referring to Carmel's coastal area in general, this management plan uses the words "coast" "shore" and "shoreline."

Section 2. THE CARMEL SHORELINE

The Carmel shoreline, with its white sand beach and wind-swept Monterey cypress trees, is known the world over. It is located in Carmel Bay, a bight that is protected by the granitic headlands of Pescadero Point in the north and Point Lobos in the south (Figure 1).

The geomorphology of Carmel's shoreline has been described in detail by Simpson (1972)[4] and Johnson (1984).[5,6] The shoreline's main feature is Carmel Beach, one of the world's most beautiful public beaches. Behind the beach, in the north and central portion, are dunes; in the far north and southern reaches, are steep bluffs.

The Carmel shoreline is affected by a variety of meteorological and oceanographic conditions; some of these are addressed in Section 10, Appendix A.

CARMEL BEACH

Carmel Beach is a pocket beach, situated near the middle of the Carmel Bay shoreline. Carmel Bay is divided into two smaller embayments. The City's beach is crescent-shaped and extends about one and one-quarter miles, from the mouth of Pescadero Canyon south to Abalone Point.

Carmel Sand

There are many features that characterize Carmel's coastline: its rocky promontories, wind-swept cypress trees, and clear blue waters. But it is the sparkling white beach and dune sand that represents the Carmel shore to most people. Carmel's fine white sand is, perhaps, the most important aesthetic feature of the City's beach and dunes. It provides the backdrop for many memorable beach-going experiences and photos.

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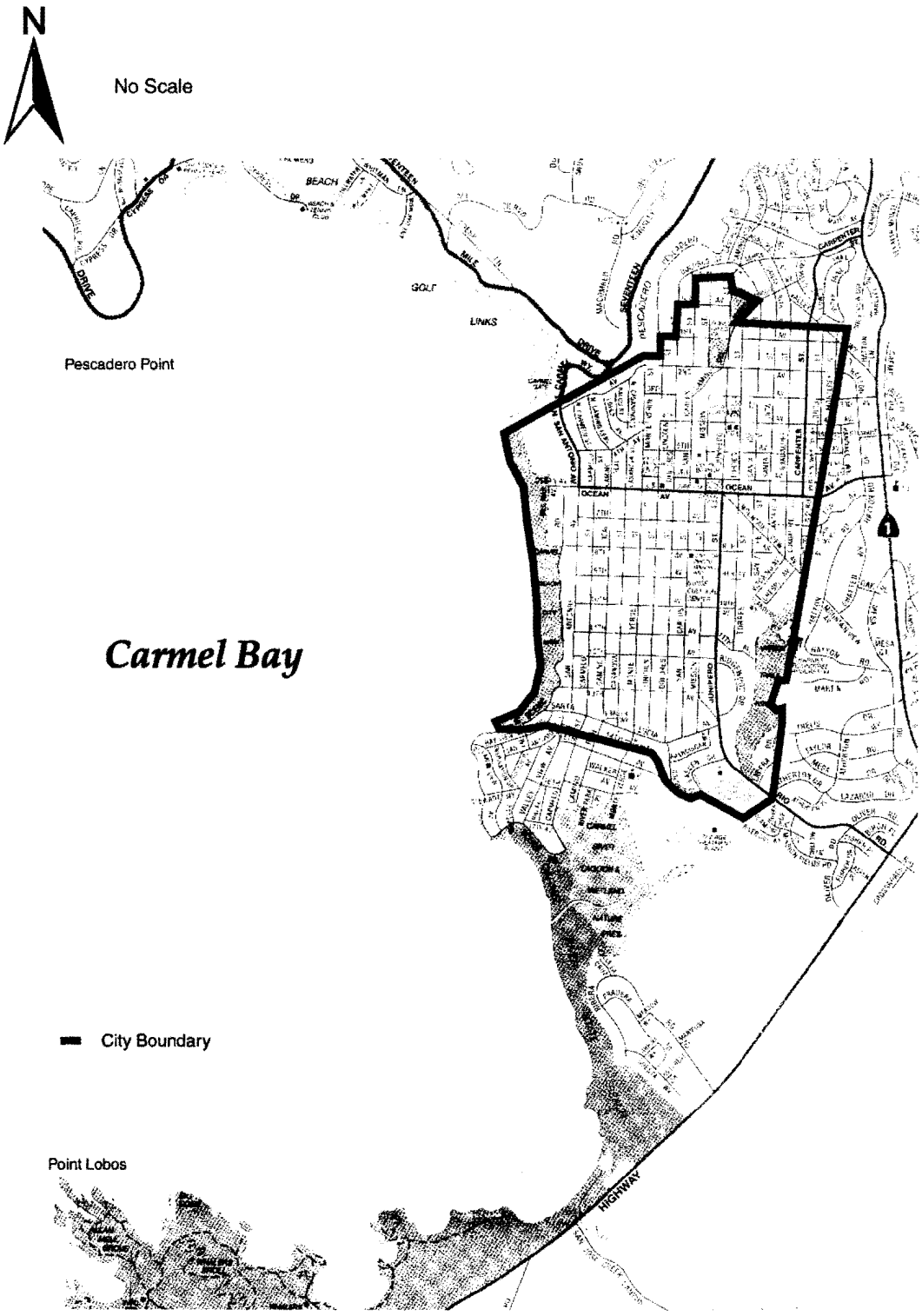
[4] Simpson, John Page III.1972. The Geology of Carmel Bay, California. Unpublished M.S. Thesis. Naval Postgraduate School, Monterey, California.
[5] Johnson, Rogers E. and Associates. 1984. Carmel Beach Coastal Erosion. Phase I. Final Report. Unpublished report.
[6] These documents are on file in the "Carmel Beach Document Collection" at the Carmel-by-the-Sea City Hall.



Source: California State Automobile Association

Figure 1 **CARMEL BAY**

These white sand grains are also one of the most important factors in protecting the Carmel coast from erosion. They represent the first line of defense against the onslaught of wave attack. Successful management of Carmel's shoreline must be based, in great measure, on an understanding of these unique white sands.

Beach Formation

Beach-Forming Material

Carmel Beach sand is composed primarily of medium-sized grains of quartz and feldspar (Johnson, 1984). Carmel's dunes are built from sand that was transported by wind action from Carmel Beach. These wind-blown sands have similar composition, but are finer-grained than the Carmel Beach sands.

To understand Carmel's beach and dune sands, it is best to consider the basics of beach formation. Beaches are composed of any available material, of sufficient size and composition, which can be deposited on the shore by ocean waves. Throughout the world, beaches are made from a wide variety of materials: broken coral, mollusk shells, foraminifera tests (the shells of single-celled amoeba-like organisms), and rocks of various sizes, from boulders down to sand grains. As beach material varies in composition, it also varies in color, from the pink beaches of Bermuda (foraminifera) to the black beaches of Hawaii and Shelter Cove, California (eroded volcanic rock) to the tan sands of Monterey Bay and Big Sur to the sparkling white sands of Carmel.

Typical Beach Formation Processes

The beaches found in Monterey Bay and Big Sur are more typical of California beaches. Sands on these beaches are produced by the erosion of inland mountains, hills, and fields. Erosion produces sediment that is carried by streams and rivers out to the ocean where it is sorted and distributed along the shore by wave action. The color and texture of these beaches is the result of materials that have been discharged by local rivers, not just during present times, but throughout past millennia.

Once sediment has reached the coast, it is usually acted upon by two different transport mechanisms. The first, "littoral drift," is a natural process that moves sediment either upcoast or downcoast. This occurs because ocean waves typically strike the shoreline at an angle. These waves form a current ("longshore current") that transports sand along the shore, parallel to the beach. Sediment carried by this current can often be seen to pile up on one side of a coastal structure (e.g. a rock

jetty). Along our coast, littoral drift usually moves sediment southward, though during winter storms, the direction may be reversed.

The second mechanism is the sand cycle, an annual process that typically deposits sand onto a beach during summer months and then moves that sand off the beach during winter. This occurs because waves that usually reach the shore during summer are "constructive" waves: low energy waves that pick up subtidal sand and deposit it onto the beach. Waves that reach the shore during winter, however, are usually "destructive" waves: high energy, steep waves that strike the shore with tremendous force, scouring sand from the beach. At many locations, this sand is deposited onto offshore sand bars, where it can then be re-deposited back on the beach by future summer waves.[7]

Formation of Carmel Beach

The model described above applies to most of the beaches found along California's coast. But Carmel's shoreline processes differ in some important ways. The City's beach is not significantly affected by river discharge. Sediment from the Salinas River, the largest river north of Carmel, does not appear to be transported around the Monterey Peninsula.[8] Pescadero Creek does discharge sediment into the bay at Carmel Beach, but its impact appears to be minimal. Plumes of sediment from the Carmel River, whose mouth is located approximately one mile south of Carmel, are sometimes transported northward during winter storm periods. Griffin (1969)[9] concluded that a portion of the Carmel Beach sands located closest to Carmel Point might be derived from Carmel River winter sediment discharges.

There is no evidence that sand on Carmel Beach is affected by littoral drift. Johnson (1984) characterized Carmel Beach as a pocket beach that is "unusual because there is no significant littoral drift supplying sand from upcoast, or downcoast, in contrast to many other California beaches." Griffin (1969) describes Carmel Beach as being "effectively isolated … by Arrowhead and Carmel Points."

Carmel Beach is, however, greatly influenced by one of the classic shoreline forces: the annual onshore/offshore sand cycle. Each year, winter storm waves remove large volumes of sand from Carmel's beach. By the next summer, sand levels appear to return to their "normal" condition. During severe winters, enough sand is removed

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[7] There are exceptions to this pattern. Summer storms can generate destructive waves, and benign winter conditions can create constructive waves, but these are unusual seasonal variations.
[8] Cooper, W.S. 1967. Coastal Dunes of California. Geological Society of America Memoir 104. 131p.
[9] Griffin, Paul Adolph.1969. Heavy Mineral Investigation of Carmel Bay Beach Sands. Unpublished M.S. Thesis. Naval Postgraduate School, Monterey, California.

from the beach to expose large outcrops of sandstone bedrock. But within a year or two, the beach appears to regain its normal sand level.

Photo 2 – *Sand Scour and Exposed Outcrops on Carmel Beach*

Beach Berm and Water Ponding

During the spring and early summer, natural beach-building processes lead to the creation of a wide sand berm that runs along the beach. Behind the berm, beach sand is at a lower level. During any season when periods of high tide occur, wave run-up may overtop the sand berm and create ponds of seawater landward of the berm. At some locations, the ponded water can cut off access to and from the City's stairways.

During fall and early winter, heavy rains and storm-water runoff can also create beach ponds behind the berm. This also can have a detrimental effect on access.

Ponded water can also despoil Carmel's beach environment by creating a debris field, by depositing silt/mud in the pond's still water, or by carrying animal wastes that may make the ponds a health hazard.

Photo 3 – *Sand Berm and Ponded Water*

Human Impacts

Carmel Beach is one of the most frequently visited beaches in central California, and is greatly affected by human activities. Trash and garbage, littered by beach-visitors, along with storm water debris, all despoil the natural beach environment. Other material, such as coals from beach fires[10] and mud discharged from storm drains (or left over from ponded water) can discolor Carmel's characteristic white sand beach. These affect only limited areas and are usually remedied by the beach's annual sand cycle, which deposits clean, sorted white beach sand every spring.

The City's annual sand redistribution program has a significant impact on the volume and distribution of beach sand. This procedure, discussed in more detail in Section 5, involves bulldozing sand from the lower beach to the upper beach. By this method, the City compensates for sand that will be pushed downslope by summer beach visitors and covers unsightly and potentially dangerous shoreline revetments. This program expands and improves the public's access to Carmel Beach. This sand redistribution usually takes place during late spring/early summer and has been conducted for more than 30 years.

Beach sand at Carmel does not appear to have been adversely affected by seawall construction. Since 1958, the City has built seawalls at several places along its

[10] Carmel allows fires on its beach, but their location (south of Tenth Avenue and seaward of the high tide line) and size are regulated by City ordinance 8.32.160 (1995).

shore. Seawalls have long been known to accelerate sand loss from adjacent areas, but such impacts have not been seen at Carmel.

CARMEL BEACH BLUFFS

The southern half of Carmel Beach is backed by bluffs, rocky promontories, and coves. The beach bluffs consist of sandstone bedrock overlain by deposits of siltstone and claystone, and then covered by an upper layer of partially cemented ("semi-consolidated") terrace deposits. In the north, the terrace deposits are covered with dunes of uncemented ("unconsolidated") fine-grained sand.

The composition of these bluff materials is a critical factor in determining how Carmel's bluffs will respond to the threat of erosion. Along the Carmel shore, sandstone provides the most resistance to erosive forces. Siltstone, claystone, and the terrace deposits are respectively less resistant. Finally, the unconsolidated dune sands are the most vulnerable; they are even susceptible to wind ("subaerial") erosion.

Another important factor is the structure of Carmel's shoreline bedrock. According to Johnson (1984), Carmel's shoreline bedrock "has been folded, fractured, and faulted due to tectonic forces that have influenced the geology of the area for millions of years. Faults and joints in the bedrock have affected the rates of erosion and, as a consequence, the shape of the coastline." The Cypress Point Fault, which may be inactive, cuts across Carmel Bay from the northwest (at Pescadero Point) to the southeast (at Abalone Point). On the shore, Johnson describes two "strong sets of fractures" that have allowed surf erosion to "selectively attack" specific points along Carmel's southern shore.[11]

Human Impacts

Along Carmel's shoreline bluff tops, south of Eighth Avenue, the City has built a pedestrian pathway. Completed in 1988, the Beach Bluff Pathway provides a safe place for people to walk, while enjoying unmatched coastal scenery. This meandering Pathway, built alongside Scenic Road, leads beach visitors to all beach access stairways and sand ramps that are located between Eighth Avenue and Martin way. The Pathway is discussed in greater detail in Section 3.

[11] Examples of this are the Thirteenth Avenue Cove and sites north of the Santa Lucia stairway.

Since the 1930s, the City has built a series of beach access stairways to enable people to travel from the Scenic Road bluff top to Carmel Beach. As described in Section 3, these stairways allow people to travel safely up and down the steep bluffs without damaging their fragile vegetation. Foot traffic on Carmel's beach bluffs may lead to severe erosion, is unsafe, and violates city law.[12] The City uses a number of methods to discourage bluff-cutting, including guardrails, plantings, boulders, and informative signs.

Nearly all of Carmel's shoreline bluffs south of Eighth Avenue are protected by seawalls, retaining walls, and engineered revetments. Beginning in 1958, the City has used these armored structures in response to severe erosion caused by winter storm waves. Carmel's shoreline walls and revetments are discussed in more detail in Section 6.

Over the years, the City has added significant amounts of fill material to Carmel's coastal bluffs. For many years, this fill consisted of sand, dirt, dead vegetation, rocks, concrete, and other material. During recent times, the City has limited its use of fill material to "clean fill" from Carmel area soils. At some locations, vegetative fill material has decomposed, creating hollows just under the surface. These areas may present a potential safety hazard for anyone who walks on the beach bluffs, from City personnel who do so in performance of their duty, to citizens who do so in violation of posted City ordinances.

CARMEL DUNES

The City of Carmel was originally founded on an extensive dune field (Cooper, 1967). These dunes were probably formed from sand blown by the winds off Carmel Beach.[13] Today, only two remnant sand dune areas still exist: the Del Mar Dunes and the North Dunes. These dunes were described by Jones and Stokes Associates, Inc., in 1995.[14] Both dune areas, along with the Ocean Avenue/Del Mar parking lot, have been identified as a future Master Plan Area, and will soon be the subject of more extensive study ("Del Mar and North Dunes Master Plan").

[12] Carmel Municipal Code Section 12.32.165B.
[13] It is reasonable to assume that portions of these dunes were formed during a prior glacial period, when sea level was lower.
[14] Jones and Stokes Associates, Inc. 1995. Final Results of the Environmentally Sensitive Habitat Area Study Conducted for the City of Carmel-by-the-Sea. Unpublished report.

Del Mar Dunes

The Del Mar dunes are a thin stretch of disturbed coastal sand dunes, extending from the end of Eighth Avenue north to the foot of the Ocean Avenue/Del Mar parking lot. The eastern boundary of these dunes is defined by the Ocean Avenue/Del Mar parking lot and by a line of private homes.

These gently rolling dunes are physically and biologically disturbed. They were eroded by high-energy waves during the 1982/83 El Niño winter storms. In 1983, engineered revetments were installed beneath these dunes adjacent to the Ocean Avenue/Del Mar parking lot and seaward of the Eighth Avenue stairway. Following revetment installation, the City restored the Del Mar dunes to their original sizes.[15]

The dunes' natural community is also significantly disturbed; it is vegetated primarily with exotic, invasive species (described in Section 4). This area may provide an opportunity for habitat restoration consistent with sections 30240(b) and 30251 of the Coastal Act. This issue will be studied in conjunction with public access opportunities in the Del Mar and North Dunes Master Plan process.

North Dunes

Carmel's largest stretch of dunes is the North Dunes. This is a 4 – 5 acre tract of moderately disturbed dunes bordered by Fourth, N. San Antonio, and Ocean Avenues. This extensive area is the site of past development, including a public restroom and four sand volleyball courts located near the west end of Ocean Avenue, and a private housing development ("Sand and Sea") built in the northeast portion of the dunes. The North Dunes are host to some exotic, invasive vegetation, but also include significant areas of native California dune plants (described in Section 4).

MANAGEMENT POLICIES

P9-157 Pursue scientific studies that document physical processes occurring at Carmel Beach (e.g. sediment transport, sand bar dynamics and influences from the Carmel Offshore Canyon). Seek funding for such studies from governmental agencies.

P9-158 Obtain and maintain an accurate digitized map of the Carmel shoreline to develop the City's beach management and maintenance policies. Analyze

[15] These revetments have remained buried since their installation in 1983.

shoreline changes to facilitate early identification of erosion hot spots, sand sediment losses/gains, migration of engineered revetments, and other long-term impacts.

Section 3. ACCESS TO THE CARMEL SHORELINE

The white sand beaches, rocky promontories, and breathtaking vistas make the Carmel coast one of the most popular destinations in central California. This shore attracts both residents and visitors alike.

Carmel's shoreline is a 22.5 acre public park that is served by an extensive public access system that includes roadways, parking areas, pedestrian pathways, beach access stairs, sand ramps, and bus service.[16]

VEHICLE ACCESS TO CARMEL'S SHORELINE

Many residents and visitors use vehicles for travel to Carmel's shore. Some drive along Scenic Road and enjoy the view. Others park along the shore and watch the ocean from their vehicle. Most seek a convenient parking space. Travel on the Ocean Avenue/Del Mar parking lot loop and Scenic Road is open to all vehicles other than buses, but the City prohibits parking of over-sized vehicles on roads near the Carmel shoreline.[17]

Ocean Avenue / Del Mar and North Dunes

The primary access to Carmel Beach is located at the lower end of the City's main street, Ocean Avenue. This is one of the few places within the City limits where the upper beach rises naturally to meet street level.[18] Here, Ocean Avenue intersects with Del Mar, a street that has been modified into a beach access parking lot.

The Ocean Avenue/Del Mar parking lot is primarily used by day-visitors to the City (Figure 2). Parking spaces here allow convenient access right up to the edge of the sand, and to the City's main beach restroom facilities.

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[16] Monterey-Salinas Transit (MST) currently brings bus passengers within two short blocks of the shoreline.

[17] This prohibition applies to any vehicle that exceeds 12,000 pounds gross weight, or 20 feet in overall length (including bumpers), or seven and one-half feet in height at its highest point. These vehicles can stop when "engaged in the loading or unloading of passengers or goods as may otherwise be permitted by law." Carmel Municipal Code, section 10.32.080G.

[18] This condition is maintained through the City's annual sand redistribution program.

This lot has spaces for 122 vehicles; four of the spaces near the City's main beach restroom are sized and marked for handicapped parking. The roadway here is narrow, and movement of over-size vehicles can be difficult, especially when the parking lot at Del Mar is full.

The Ocean Avenue/Del Mar parking lot, along with San Antonio Avenue north of Ocean Avenue, also provide access for people visiting Carmel's North Dunes. The stretch of San Antonio Avenue between Ocean Avenue and the "Sand and Sea" development has room for ten parked vehicles.

Scenic Road

Scenic Road is a street that truly lives up to its name. The portion that stretches between Ocean Avenue and Eighth Avenue is typical of many attractive streets in residential Carmel. But at Eighth Avenue, visitors and residents are greeted with stunning vistas of Carmel Bay, framed through tall Monterey cypress and accented by white beach sand. In many respects, the history of Scenic Road traces the history of bluff erosion, increasing public use, and the City's efforts to preserve lateral and vertical beach access.

Scenic Road winds along the bluffs above the beach and continues past the City's southern limit. The road continues to the south end of Carmel Point, in an unincorporated portion of Monterey County. When it was constructed, Scenic Road carried traffic in both directions. During the 1960s, vehicles driving between Eighth and Santa Lucia Avenues were restricted to southward travel. In 1988, this stretch of Scenic Road was narrowed to provide additional space for Carmel's Beach Bluff Pathway and landscape improvements while preserving space for curbside parking.

The portion of Scenic Road between Eighth Avenue and Martin Way provides curbside parking for many visitors to the City's shoreline. This stretch of Scenic Road has 127 parking spaces; all are adjacent to the Beach Bluff Pathway. There are two stalls located on either side of the pedestrian sand ramp, between Eighth and Ninth Avenues, which are sized and marked for handicapped parking. The City has also established two stalls for passenger loading; one located at Eighth Avenue and the other at Eleventh Avenue.

Scenic Road Neighborhood Parking

On many warm summer days, especially weekends and during special events (e.g. Great Sand Castle Contest), beach parking spills over onto neighboring streets. On these occasions, vehicles often park along streets that intersect with Scenic Road: Eighth, Thirteenth, and Santa Lucia Avenues.

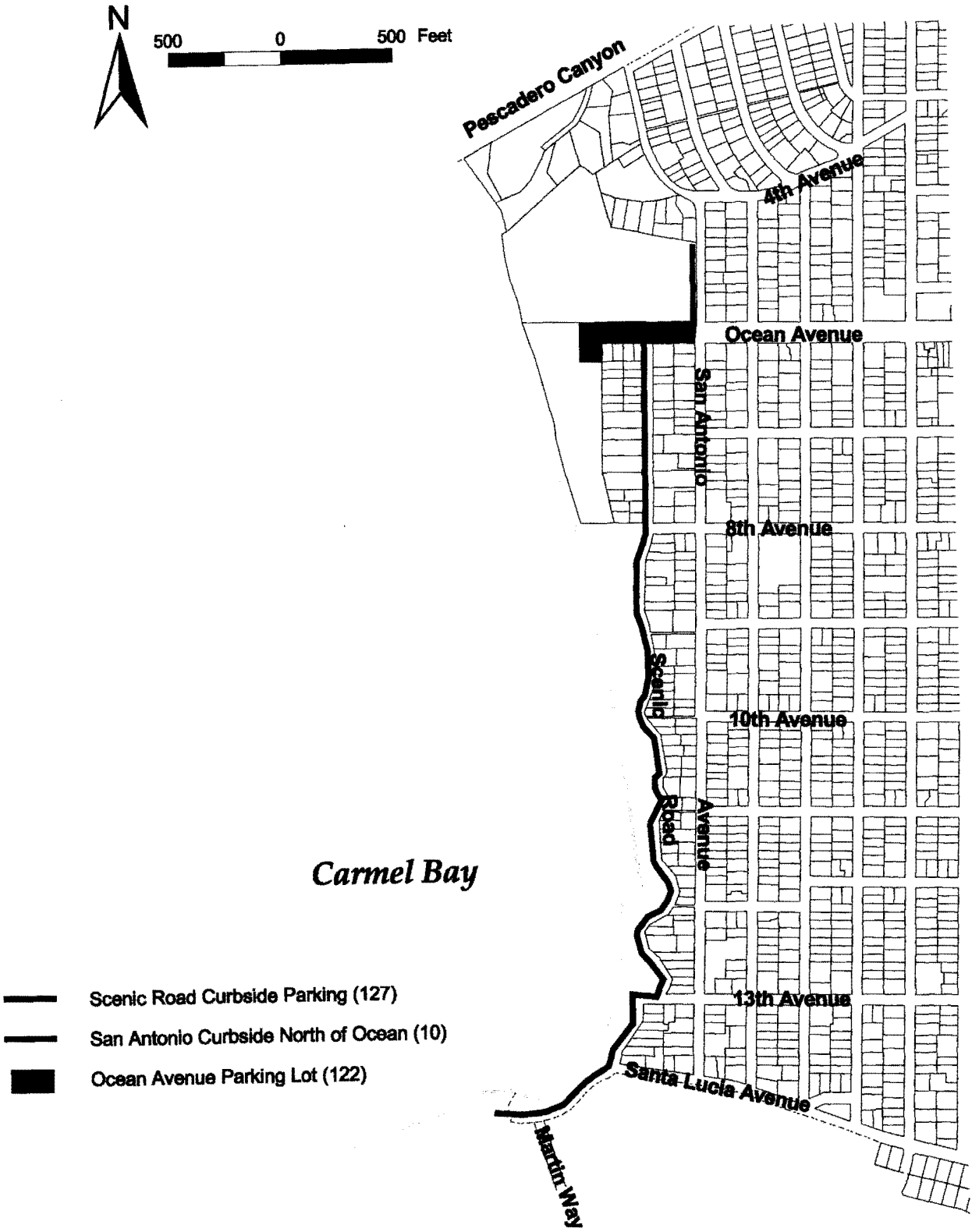

Figure 2 **SHORELINE PARKING RESOURCES**

During the busiest periods, vehicles also park along San Antonio, Carmelo, and even Camino Real Avenues. Occupants of these vehicles then walk a short distance to the Carmel shore along one of the Avenues between Eighth and Santa Lucia. At San Antonio Avenue, some pedestrians may use one of the four narrow pedestrian access easements between Ninth and Twelfth Avenues; these are discussed below. Vehicle access and available parking spaces are generally well dispersed. The public is afforded easy access to all parts of Carmel's shoreline and impacts are not concentrated in any one area. This is consistent with Section 30212.5 of the Coastal Act.

PEDESTRIAN ACCESS TO CARMEL'S SHORELINE

Walking is a popular way for residents and visitors to access the Carmel shore. Many enjoy walking on the Beach Bluff Pathway above the beach. Others walk from their parked vehicles, on nearby streets, and need a safe, convenient route to the nearest beach accessway (Fig. 3). In contrast to many areas along the California coast, pedestrian access in Carmel is extremely convenient. Lateral access is continuous along the City's entire coast and, from Eighth Avenue southward; vertical access is available at approximately one-block intervals.

North Dunes and Del Mar Dunes

The North Dunes and upper Carmel Beach are easily accessible to many pedestrians via N. San Antonio and Ocean Avenues and the Ocean Avenue/Del Mar parking lot. This area of beach and dunes can also be reached by a pedestrian access easement that begins near the intersection of Fourth and N. San Antonio Avenues through the "Sand and Sea" development. This accessway is maintained by the City, but is not adequately signed.

Pedestrian travel to this access easement is sometimes difficult. To reach the accessway, pedestrians must walk along a narrow stretch of N. San Antonio Avenue. On this section of roadway, pedestrians may encounter a hazardous blind curve where fast-moving vehicles travel to or from the nearby Carmel Gate to Pebble Beach. This portion of N. San Antonio Avenue lacks both convenient parking and a dedicated pedestrian pathway/walkway.

The Del Mar Dunes are reached from the north via the Ocean Avenue/Del Mar parking lot and from the south by the Eighth Avenue beach access stairway. Pedestrians are free to walk through the dunes between these two access points, but there is no improved lateral access in this area.

Factors related to lateral access in the Del Mar Dunes are discussed in two documents. The Carmel Beach Master Plan recommends installing a boardwalk in the dunes to link Eighth Avenue and the Del Mar area. It also mentions that public activities should be "consistent with the sensitive dune environment." A biological survey conducted by Jones and Stokes (1995) has led City staff to recommend establishing the Del Mar Dunes as an Environmentally Sensitive Habitat Area (ESHA). The recommendation to establish formalized lateral access through the Del Mar Dunes may be in conflict with the concept of sensitive habitat protection.

Pedestrian access issues in both the North Dunes and Del Mar Dunes will be addressed during the upcoming Master Plan process for these areas.[19]

The Carmel Beach Bluff Pathway

The Beach Bluff Pathway has been designed to serve pedestrians traveling along Scenic Road (Fig. 3). Before the Pathway was built, Scenic Road was a busy one-way, two-lane thoroughfare that lacked a safe space for people to walk or jog. Pedestrians walking in the street were often forced to weave among parked cars and dodge moving vehicles.

After the 1982/83 El Niño storms, the bluffs were ravaged, drainage facilities were destroyed and, in places, Scenic Road itself was threatened. At this time, there were only five narrow stairways remaining that connected Scenic Road with the beach. Impatient beach-goers often climbed on the City's coastal bluffs and trampled protective vegetation, instead of using the beach access stairways.
The City addressed the bluff and drainage problems by installing bluff armoring and improving drainage facilities during Phase I of the Carmel Beach Rehabilitation Project. During Phase II, the City addressed the access and landscape issues. Scenic Road was narrowed and a meandering Pathway was created that enabled people to enjoy the beautiful vistas of Carmel's shoreline in serenity and safety.

The 3,250 foot-long Pathway winds along the bluff top, near the seaward edge of Scenic Road. It extends from Eighth Avenue to the City limits south of Martin Way. The Pathway is built primarily of decomposed granite (DG),[20] and averages four to five feet in width. It was designed to provide access for people who are handicapped or physically challenged.

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[19] The possibility of establishing a Del Mar Dunes walkway that utilizes other material (e.g. decomposed granite) should also be examined during this process.
[20] Pathway material consists of 95% decomposed granite + 5% cement. The cement was tinted with Davis Concrete Color ("Mesa Buff" no. 5447), mixed dry at 2 lbs./94 lb. bag of I-II Portland Cement.

The Pathway design was jointly developed by the Carmel Beach Rehabilitation Task Force and consulting landscape designers from the firm of Royston, Hanamoto, Alley, and Abey (RHAA);[21] it was formally opened in 1988.

The Carmel Beach Bluff Pathway project has won several awards, including the American Society of Landscape Architects (ASLA) National Merit Award (1988), the ASLA Northern California Chapter Merit Award (1988), and the Garden Club of America Award for Significant Contribution to Horticulture (1991).

Photo 4 – *The Carmel Beach Bluff Pathway*

Pathway Design and Purpose

The Beach Bluff Pathway was designed to play a critical role in the City's overall plan to protect its shoreline while improving coastal access. Its design was based on five guiding principles adopted by the Task Force:

1. Restore and retain the natural, pristine beauty of Carmel Beach, which is unique in the world.
2. Strive for natural, timeless design.
3. Design elements so as not to intrude upon the scenic beauty; no apparent structural intrusions to mar vistas from residences, roadway, walkway, beach, etc.; maintain an uninvaded panorama of the Bay.

[21] The key RHAA personnel were Associate Planner Lucille Biesbroeck and Principal Planner Robert Royston.

4. Maintain the "meandering style" that is typical of Carmel (e.g., intimate, narrow, winding paths leading from the main walkway to isolated, unobtrusive resting places).
5. Introduce new and innovative schemes to control behavior of people and dog traffic (e.g., guide people to accesses and encourage sitting and meeting on the beach instead of on the roadway).[22]

Guided by these principles, the designers created a Pathway that protected pedestrians and the City's vulnerable coastal bluffs by modifying where people walked, parked, and congregated along the Carmel Beach bluff top.

Pedestrian Protection

The Beach Bluff Pathway provides safe lateral access for pedestrians along the Carmel Beach bluff top. This clearly responded to the needs of beach visitors who walk along Scenic Road (from their residences or cars) in order to reach one of the City's numerous beach access stairways or sand ramps.

The Pathway design also enhances the experience of shoreline visitors whose activities are limited to the Scenic Road bluff top area. These include: people whose physical condition makes walking on the beach difficult or impossible; people who prefer to sit or stand on bluffs overlooking the shore and enjoy the scenic vistas; and people who use the bluff top area for walking or running.

Finally, the Pathway provides a coastal experience during those times when conditions discourage use of the beach itself. These conditions, characteristic of the Carmel shoreline, cause many people to limit their shoreline visit to the City's coastal bluffs, instead of the beach:

- Climate – Carmel Beach weather conditions often include periods that range from cool and windy to wet and foggy. These conditions are most likely to occur during the period of highest public use (mid-Spring through early Fall). Many find these conditions are more conducive to strolls along the bluffs in warm clothes rather than the more stereotypical beach activities.

- Tides – Like most sections of the central California coast, tides at Carmel Beach range from –2.0 to +8.0 feet. Under some winter conditions, travel on the beach during high tide may be difficult or dangerous; this is especially true of the beach south of Twelfth Avenue.

[22] City of Carmel-by-the-Sea. 1986. Carmel Beach Restoration Phase II Final EIR.

- Sand Level – During severe winters, sand scour can expose massive bedrock outcrops that can interfere with pedestrian movement along the beach.

Bluff Protection

Many facets of the Beach Bluff Pathway were designed to remedy problems caused by people who climb on Carmel's coastal bluffs. "Bluff-cutting" damages vegetation and can lead to severe erosion from storm water runoff. The Pathway landscaping includes plants, boulders, and protective wooden barriers that serve to keep people from straying onto the City's vulnerable coastal bluffs. Discreet signs along the Pathway remind people to stay off the slopes. Other signs direct pedestrians to the nearest beach accessway.

The success of the Carmel Beach Bluff Pathway can be attributed to the interplay of all its elements: pathway layout, beach accessways, landscape plants, boulders, guardrails, signs, and other amenities (discussed in detail in Section 4). Changes to the design of any of these elements may impact the function of the Pathway, and must be undertaken with great care.

Beach Accessways

The Pathway was designed to seamlessly integrate with a series of beach access stairways and sand ramps (Fig. 3). Some of these accessways were built years earlier, and survived the 1982/83 El Niño storms. Others were built as part of the Phase II project. At present, the City has nine stairways and two sand ramps that provide access for beach visitors (see Fig. 3).

Stairways and Amenities

The stairways are built in varying styles using a variety of materials; they are described in Table 1, below:

Table 1 - CARMEL BEACH ACCESS STAIRWAYS

Location	Year Built	Composition and Features
Eighth Avenue	late 1930s[23]	Carmel stone and golden granite rock Includes Foot Wash-off Station
Ninth Avenue	1984	Wood beam and posts. Break-away design
Tenth Avenue (North)	1974[24]	Wood beam and posts Break-away design
Tenth Avenue (South)	1986	Upper section: Wood beam and posts Lower section: Reinforced concrete faced with golden granite; wave deflectors at bottom
Eleventh Avenue	late 1930s	Golden granite rock with exposed aggregate treads Includes Foot Wash-off Station
Twelfth Avenue	1986	Wood beam and posts Temporary[25]
Twelfth Avenue Point	proposed	Upper section: Wood beam and posts Lower section: Reinforced concrete faced with golden granite; wave deflectors at bottom
Thirteenth Avenue	late 1970s	Reinforced concrete and golden granite rock Includes Foot Wash-off Station
Santa Lucia Avenue	late 1930s	Golden granite rock and exposed aggregate treads Includes Foot Wash-off Station
Martin Way	1958/59	Upper section: Reinforced concrete faced with golden granite. Lower section: Wood beam and posts

[23] Modified in '85/86
[24] Redesigned in 1986
[25] The Twelfth Avenue stairway was built as a temporary stairway, to provide "emergency" beach access in place of the Twelfth Avenue Point stairway that was destroyed during the 1982/83 El Niño storms.

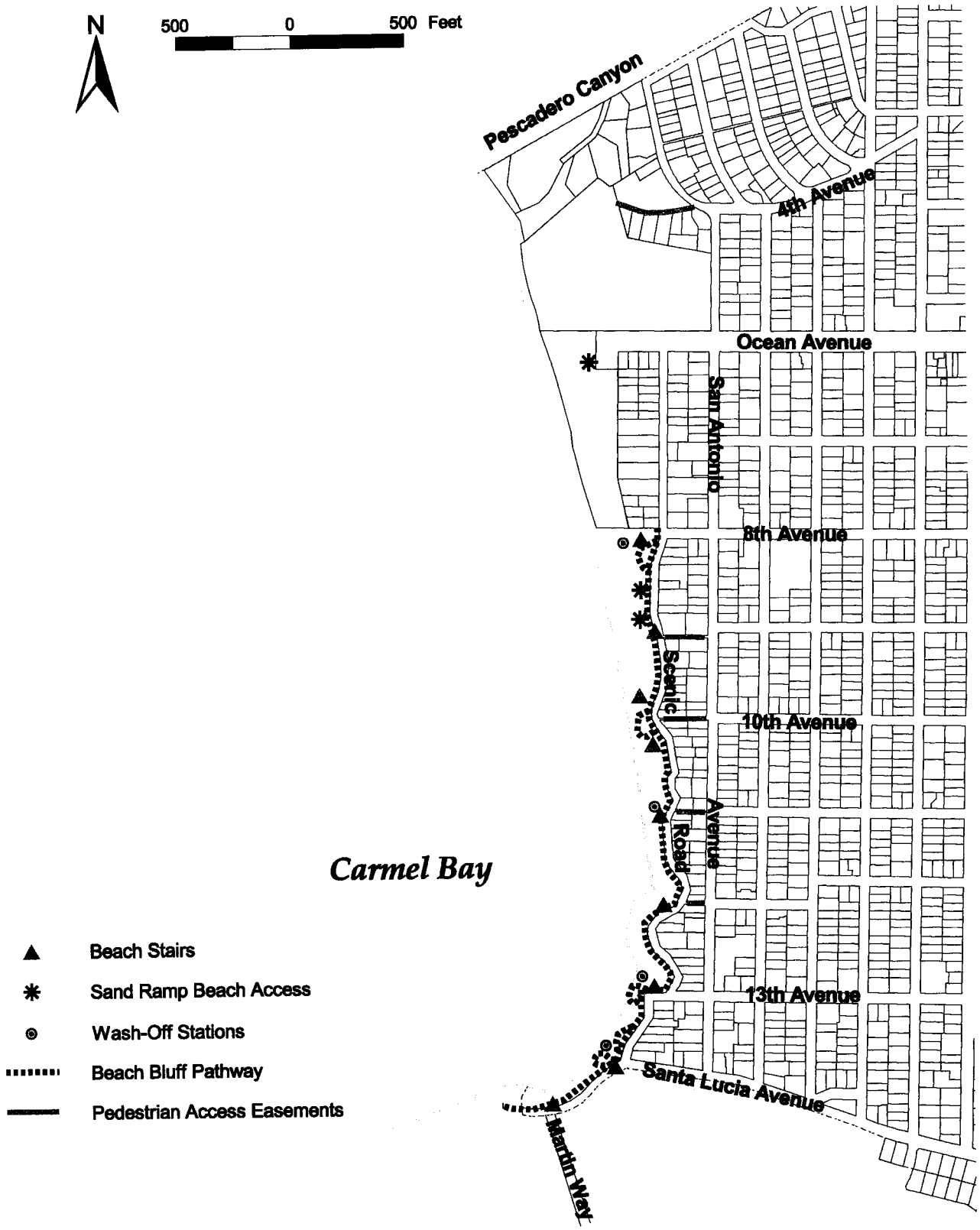

Figure 3

PUBLIC ACCESS

Photo 5 – *The Tenth Avenue (South) Stairway*

Some of the stairways constructed during the Phase II project employed the concept of "break-away" sections. On these stairways, the lowest section was built to be separate from the upper section. This design arose out of observations of stairway failures during the 1982/83 El Niño storms. First, waves attacked the lowest portion of a stairway, undercutting its foundation.[26] Soon, this bottom section was destroyed, pulling with it the (attached) upper portion of the stairway. In at least one case (Ninth Avenue stairway), loss of the upper portion was accompanied by massive erosion of bluff material and toppling of two large Monterey cypress.

Understanding that Carmel's beach access stairways will always be exposed to potential wave damage, designers created new stairways whose lowest portions were separate from the upper sections. When attacked by high-energy storm waves, these sections would break cleanly away without causing added bluff damage. This greatly reduced potential repair costs as well as the threat of bluff erosion.

This concept has been tested in recent years. The lower section of the Tenth Avenue (North) stairway was severely damaged by high-energy waves during the 1997/98 El Niño winter storms; the upper section and surrounding bluffs were relatively undamaged. Within a year, the lower section was repaired and open to public access. During the Winter of 2000/01, storm waves damaged the lower section of the Martin Way stairway. Again, the upper section and surrounding bluffs suffered

[26] These observations apply to both wood and concrete/masonry stairways.

only minor damage. A replacement lower section is currently under design and will soon be built.

Photo 6 – *Limited Damage to the Upper Portion of the Break-Away Stairs at Tenth Avenue (North)*

All stairways are complemented with trash/recycling container enclosures; four have foot wash-off stations (these are described in Section 4).

With one exception,[27] beach access stairways along the Pathway are located adjacent (or very near) to a Pathway access ramp that allows handicapped access from Scenic Road. Each ramp is located within one of Scenic Road's marked crosswalks, providing Pathway access from the intersecting streets or pedestrian easements. This creates a coordinated "access system" that leads pedestrians safely and conveniently to the beach.

Sand Ramps

Along the shoreline, the City has built and/or maintained three sites where beach sand has been moved up to the street/parking level. These allow pedestrian access to

[27] The exception is the Twelfth Avenue stairway, which was built approx. 100 feet west of where the Twelfth Avenue pedestrian access intersects with Scenic Road. The curb ramp is located at that intersection, within the marked crosswalk.

and from the beach. Each also provides access to the sands of the upper beach for people who have limited mobility or who are physically handicapped.[28]

The largest is located adjacent to the City's main beach parking lot at the foot of Ocean Avenue/Del Mar. This sandy area is primarily a natural formation, but its sand level is maintained by bulldozing activities during the City's sand redistribution program.

The other two sites are sand ramps that are maintained by the City's annual sand redistribution program. One ramp is located just south of Eighth Avenue and is constructed of bulldozed sand in a GEOWEB® cellular confinement system covered with a cap of compacted decomposed granite (DG). When necessary, it is used as an equipment-access ramp for maintenance and emergency vehicles.

About 40 feet south, the City has built another sand ramp. It is constructed of bulldozed sand and buried driftwood logs; it is not used by vehicles. The buried driftwood logs help stabilize the ramp by controlling the downslope movement of sand. The logs also serve to prevent exposure of irrigation pipes and valve control wires. When these logs are not well covered by sand, they may become obstacles for pedestrians. The ramp should be regularly monitored and exposed logs should be re-covered with sand.

Each sand ramp is equipped with a paved access ramp that provides handicapped accessibility to/from Scenic Road.

Pedestrian Access Easements
(From San Antonio Avenue to Scenic Road)

Scenic Road provides lateral access along much of the shoreline. Five streets that intersect with Scenic Road (Ocean, Eighth, Thirteenth, and Santa Lucia Avenues, and Martin Way) bring both vehicles and pedestrians down to the shoreline. But four other City streets (Ninth, Tenth, Eleventh, and Twelfth Avenues) provide vehicle access only as far west as San Antonio Avenue. Located at the western end of these streets, between San Antonio Avenue and Scenic Road, are narrow drainage easements that also serve as pedestrian accessways. None of these is wide enough to support vehicle traffic, and each can provide safe pedestrian travel only if it is not raining heavily. During periods of rain, storm water moves down the easement toward a drain inlet at Scenic Road, creating difficult-to-hazardous conditions for pedestrians.

[28] This is discussed in greater detail below.

Photo 7 – Pedestrian Access Easement at Ninth Avenue

Handicapped Access

Carmel Beach is located at the base of a series of high dunes and shoreline bluffs. Public access to the beach area is primarily via the parking lot at the foot of Ocean Avenue/Del Mar, as well as from numerous sites along Scenic Road. But from these locations, access to the tideline requires a descent that ranges between 12 and 50 feet, depending on location and season. This trek can be challenging for many beach visitors and impossible for those whose mobility is challenged.

The City of Carmel has an abiding commitment toward making its shoreline as accessible as possible, given the existing topographic conditions. The City's Beach Bluff Pathway and its shoreline restroom facilities were all designed to meet existing Americans with Disabilities Act (ADA) guidelines for handicap accessibility. The City's two sand ramps,[29] as well as the sand annually bulldozed up to the Ocean Avenue/Del Mar parking lot, allow handicapped access to the upper beach. These three sites have been certified by the State of California as offering handicapped access to the shoreline.

Carmel maintains six spaces that are sized and marked for handicapped parking: four are in the main beach parking lot, at the foot of Ocean Avenue/Del Mar and two are located on either side of the sand ramp north of Ninth Avenue.

It is important to note that those features that guarantee handicapped access also promote use by the numerous shoreline visitors who, while not legally classified as

[29] Located: 1) just south of Eighth Avenue, and 2) just north of Ninth Avenue.

handicapped, are nonetheless of limited mobility. Experience has shown that their shoreline visits are enhanced by the City actions described above.

MANAGEMENT POLICIES

G9-6 Provide for maximum public access to, and recreational use of, the shoreline consistent with private property rights and environmental protection.

O9-16 Maintain frequent and safe points of access along the beach.

P9-93 Continue to provide vertical access along the Carmel shoreline at approximately one or two block intervals.

P9-94 Improve and sign the vertical access at Fourth Avenue. Consider development of a pedestrian path from the foot of Jane Powers walkway to the Fourth Avenue beach access through Sand and Sea. Investigate and implement opportunities to establish or reestablish additional vertical access from North San Antonio to the beach to the extent feasible.

P9-95 Periodically reestablish the sand dune at the foot of Ocean Avenue, to provide convenient beach access from the Ocean Avenue/Del Mar parking lot. Reestablish and regularly maintain a vehicle and a handicapped access ramp south of Eighth Avenue.

P9-96 Enhance pedestrian access to the shoreline from San Antonio Avenue using existing pedestrian access easements/drainage ways that connect San Antonio Avenue with Scenic Road located at Fourth, Eighth, Ninth, Tenth, Eleventh, and Twelfth Avenues. Redirect surface storm water flows in these easements/drainage ways to underground culverts to improve pedestrian safety, access, and aesthetics.

P9-177 Prohibit motorized vehicles and motorized recreational equipment on Carmel Beach, sand dunes, and other City-owned parkland. This prohibition does not apply to City and contracted vehicles or public safety vehicles.

O9-17 Establish a local segment of the California Coastal Trail through Carmel-by-the-Sea by connecting existing pedestrian paths and developing new

pedestrian paths or routes as required to create a continuous trail through the City.

P9-99 Designate the Beach Bluff Pathway as part of the California Coastal Trail (as long as this does not require any alteration to design or use). Coordinate with Monterey County to increase public awareness of the new segment of the Trail.

P9-100 Coordinate with Monterey County to establish a continuous coastal trail through Carmel that links Rio Park, Carmel Point, the Beach Bluff Pathway, and the trail network in Del Monte Forest. Support efforts by Monterey County to establish a pedestrian pathway around Carmel Point to continue the California Coastal Trail.

O9-23 Provide a parking program for the Carmel shoreline that supports convenient access without compromising aesthetics, environmental quality or residential character.

P9-134 Provide convenient and free public beach parking from 5:00 a.m. until 10:30 p.m. daily. Parking outside of these hours along Scenic Road and at the Del Mar parking lot shall be limited to residents and guests with a resident's parking permit.

P9-133 Continue to regulate beach parking using time limits. Retain beach parking as a free resource to the public facilitating access for all. Keep public spaces along the Beach Bluff Pathway small, intimate and dispersed to avoid large congregations of people that would disturb nearby residents.

G9-7 Develop a Master Plan for the Del Mar and North Dunes area. Upon approval, the Coastal Land Use Plan shall be amended to incorporate all elements of the Master Plan.

O9-18 Appoint an ad hoc citizens committee to develop the Del Mar and North Dunes Master Plan. Address issues related to parking and circulation, access, recreation facilities, aesthetics, special events, impacts on residents and visitors, and protection of environmental resources. Guide Plan development using the goals, objectives, and policies of this Land Use Plan consistent with Coastal Act policies, for provision of public access and protection of sensitive resources.

P9-105 Address circulation and parking problems, make the area more pedestrian/people friendly and protect the environment.

P9-132 Develop a design plan for the Del Mar parking area that improves circulation, reduces congestion, enhances visual quality, and enhances community character. The redesign shall avoid or minimize any loss of parking spaces.

P9-101 Improve pedestrian circulation between the north end of the Beach Bluff Pathway at Eighth Avenue and the beach facilities at Ocean Avenue and Del Mar as part of the Del Mar and North Dunes Master Plan.

P9-106 Use City staff along with needed consultants (environmental restoration specialist, traffic engineer, landscape architect) to develop a plan of balanced improvement.

P9-107 Consider reallocating parking so it will flow in a more efficient manner. Consider a regular shuttle from downtown or from a designated parking area.

P9-108 Improve the pedestrian experience through the Del Mar parking area for those arriving on foot and from parked vehicles to the beach. Consider construction of boardwalks or other improvements to aid beach circulation, protect tree roots and protect the sensitive vegetation in the North Dunes area.

P9-109 Provide handicap access consistent with ADA requirements. Provide access that blends with the beach and allows handicapped individuals the opportunity to enjoy a more natural beach experience.

P9-110 Provide adequate and aesthetically pleasing trash containers.

P9-111 Provide secure bicycle racks.

P9-112 Continue to support passive beach activities that are consistent with maintaining the natural beach setting. Active recreational opportunities need not be enhanced.

P9-113 Do not install formal picnic tables or benches. Rather, provide driftwood logs for seating. Picnicking on the beach should be conducted in a traditional manner with blankets, etc.

P9-114 Retain the informal atmosphere of the volleyball courts.

Section 4. THE CARMEL SHORELINE LANDSCAPE

Carmel's shoreline landscape constitutes everything that people see along the shore. This includes both natural and artificial elements: ocean, beach, topography, trees, plants, and boulders, as well as the Pathway, guardrails, beach accessways, and stone walls. Even the momentary changes of weather, wildlife, people, automobiles, and other transient scenery make up the landscape mosaic of the shoreline experience.

NORTH DUNES

Plants growing along Carmel's shoreline are mostly horticultural plantings; the only significant natural community is located in the North Dunes area. These dunes support a community of native California dune plants. Jones and Stokes (1995) found bush lupine (*Lupinus arboreus*), beach sagewort (*Artemesia pycnocephala*), pink sand verbena (*Abronia umbellata*), and mock heather (*Ericameria ericoides*) along with several other native plant species.

Of special note is the presence of Tidestrom's lupine (*Lupinus tidestromii* var. *tidestromii*), a state- and federal-listed endangered plant species. Jones and Stokes (1995) documented the first record of Tidestrom's lupine at Carmel, reporting 280 individual plants in the North Dunes area. An informal survey conducted in 2001, in conjunction with this Carmel Shoreline Management Plan, confirmed the presence of several hundred plants.

The North Dunes may also be inhabited by the California Black Legless Lizard (*Anniella pulchra nigra*). In 1985, 12 specimens were located in Carmel area dunes by federal wildlife biologists;[30] suitable habitat is thought to exist in portions of the North Dunes. The status of the California Black Legless Lizard has changed since the Jones and Stokes (1995) report: This species is currently designated as a

[30] Bury, B.R. 1985. Status report. *Anniella pulchra nigra* Fisher, black legless lizard (Anniellidae: Sauria) in Central California. Ecosystems Studies Section, Denver Wildlife Research Center. Fort Collins, CA. Prepared for U.S. Fish and Wildlife Service, Office of Endangered Species, Portland, OR. (cited in Jones and Stokes, 1995).

"Species of Special Concern" by the California Department of Fish and Game, but is no longer a candidate for Endangered Species listing by the federal government.

Based on the presence of Tidestrom's lupine and potential habitat for the California Black Legless Lizard, Jones and Stokes (1995) determined that the North Dunes qualifies as an Environmentally Sensitive Habitat Area (ESHA). This is shown on Fig. 4.

These dunes are also haven to exotic, invasive vegetation, including large patches of Hottentot-fig ice plant (*Carpobrotus edulis*) and acacia (*Acacia* sp.).

DEL MAR DUNES

The Del Mar dunes are vegetated mainly with exotic, invasive plant species: Hottentot-fig ice plant (*Carpobrotus edulis*) and acacia (*Acacia* sp.). These were historically planted by City personnel in an attempt to stabilize the dunes. Forest, Parks, and Beach staff periodically thins these thickets of acacias (see section on Trees, below).

Based on the results of the Jones and Stokes (1995) habitat study, City staff has recommended that the Del Mar Dunes be considered an Environmentally Sensitive Habitat Area. Its un-vegetated dunes and the "small pocket(s) of native dune vegetation" along the eastern portion of Carmel Beach are all potential habitat areas that could be restored, consistent with the Coastal Act.

CARMEL BEACH BLUFFS

Most of the plants growing on Carmel Beach are located along a stretch of upper beach extending between Pescadero Creek and Eighth Avenue. This area is heavily disturbed by both natural and human impacts. It is mainly vegetated with Hottentot-fig ice plant (*C. edulis*), acacia (*Acacia* sp.), and sea rocket (*Cakile maritima*); both ice plant and acacia are exotic invasives. They grow aggressively, outcompeting, and eventually replacing, native California beach and dune plants. This results in a restrictive monoculture that can limit populations of native wildlife that are closely linked with the native plants. Sea rocket is also thought to be an introduced species, but its growth characteristics are not known to have a detrimental impact on California beach and dune communities.

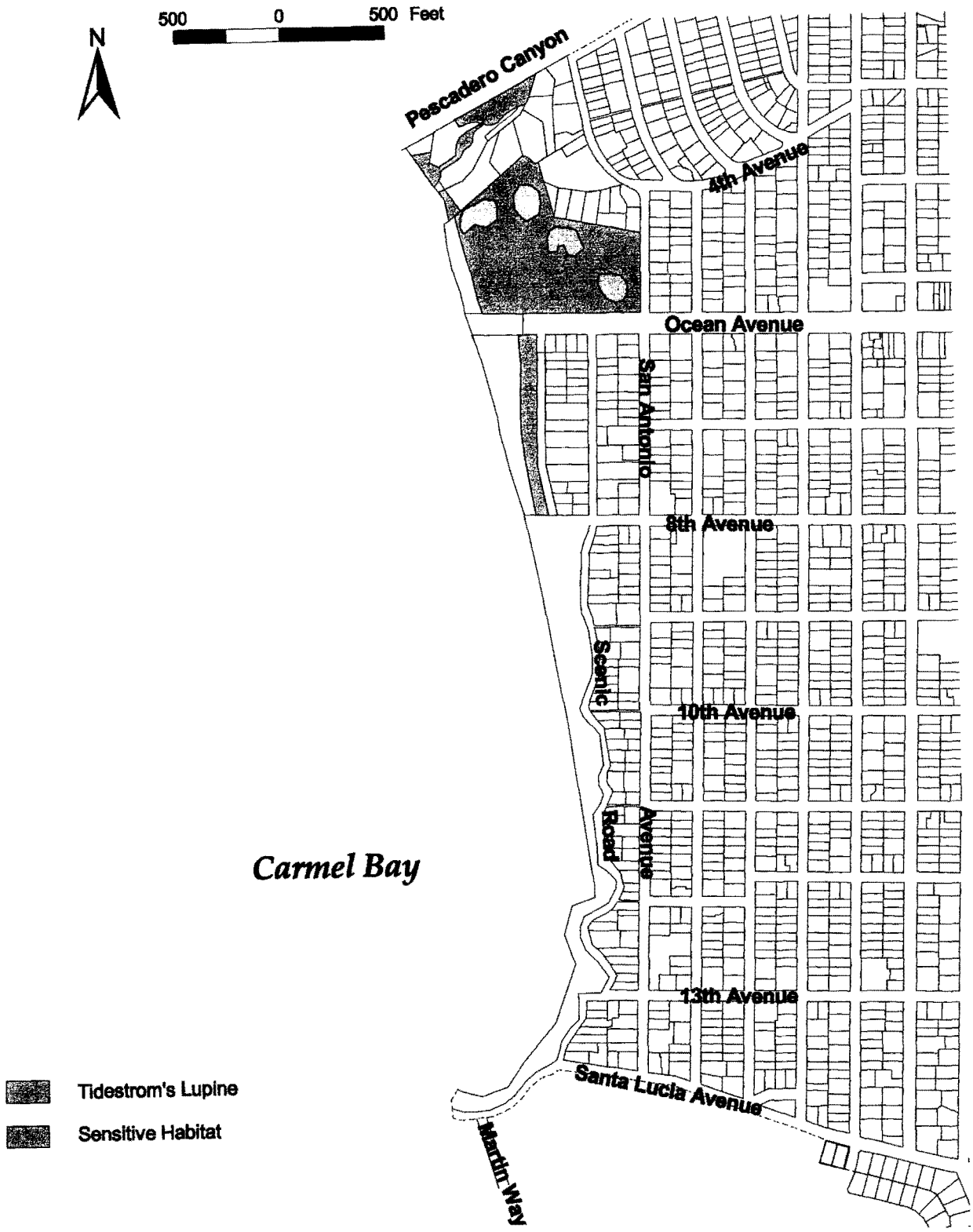

Figure 4 ENVIRONMENTALLY SENSITIVE HABITAT AREAS

Along the upper beach, near the Tenth Avenue (North) stairway and just south of the Eleventh Avenue stairway, stands of a native dune grass (*Elymus mollis*) are thriving. During the late 1980s, the City planted *Elymus*[31] along the upper beach between Eighth and Ninth Avenues, but they were eventually trampled by beach visitors.

BEACH BLUFF PATHWAY

Horticultural Plantings

Plants growing in the Beach Bluff Pathway landscape serve two purposes: they enhance the aesthetic qualities of the Scenic Road/bluff top area, and they protect the City's fragile coastal bluffs from damage by natural and human forces.

The palette of plants selected by the Pathway designers (landscape architects from Royston, Hanamoto, Alley, and Abey, in conjunction with the Carmel Beach Rehabilitation Task Force, City staff, and consultants) met several criteria. They were:

- tolerant of coastal conditions, especially exposure to salt spray;
- drought tolerant (or able to thrive on limited water);
- tolerant of human activity;
- suitable for erosion control;
- non-invasive;
- relatively easy to grow;
- commercially available; and
- "natural looking" (native or "native-like" - subtle in color).

The species originally selected for the Pathway landscape are listed in Table 2, below:

[31] These were purchased from Sunset Coast Nursery in Watsonville, California, and planted under the guidance of its owner, Patti Kreiberg.

Table 2 – **Approved Carmel Beach Bluff Pathway Plants**[32]

Large Shrubs

Arbutus unedo	Strawberry Tree
Atriplex lentiformis 'breweri'	Brewer's Saltbush
Leptospermum laevigatum 'compactum'	Australian Tea Tree
Myoporum laetum	NCN[33]
Pittosporum crassifolium	NCN
Rhus integrifolia	Lemonade Berry

Barrier Plants

Ceanothus impressus 'Joyce Coulter'	Joyce Coulter Ceanothus
Ceanothus impressus 'Julia Phelps'	Julia Phelps Ceanothus
Echium fastuosum	Pride of Madeira
Escallonia 'Newport Dwarf'	Newport Escallonia
Griselinia lucida	NCN
Pinus mugo	Mugo Pine

Color Planting

Chrysanthemum leucanthemum	Ox-Eye Daisy
Erigeron glaucus	Sea Daisy
Eschscholzia californica	California Poppy
Ferns	Ferns
Iris douglasiana	Pacific Coast Iris
Lupinus chamissonis	Lupine
Limonium perezii	Sea Lavender (Statice)

Low Shrubs

Ceanothus griseus 'horizontalis'	Carmel Creeper
Cistus skabergii	Hybrid Rockrose
Cistus ladanifer	Crimson Spot Rockrose
Lavandula angustifolia	English Lavender
Lavandula dentate	French Lavender
Ribes viburnifolium	Catalina
Santolina chamaecyparissus	Lavender Cotton
Teucreum fruticans 'compacta'	Dwarf Bush Germander

This plant list[34] is a critical feature of the City's overall plan for the shoreline. As part of the Carmel Beach Rehabilitation Project, the landscape plan was approved

[32] These plants were part of the Beach Bluff Pathway landscape design that was approved by the Forest and Beach Commission, Planning Commission, City Council, and California Coastal Commission in 1987 (*From:* RHAA Landscape Plan for the "Carmel Beach Restoration Project.")
[33] NCN = No Common Name

by two City commissions,[35] the City Council, and the California Coastal Commission[36] in 1987. Over the past decade, this landscape plan has been used as a guide for the re-vegetation of the coastal bluffs and bluff tops in several shoreline repair projects.[37]

The original plantings were completed in 1988. The ensuing years have provided an opportunity to assess these plant selections. Many were successful; others were not. Some failed to thrive because they could not tolerate the natural forces or human impacts that characterize Carmel's shoreline. Others may have failed because they lacked proper care.

Over the years, City personnel replaced plants from the original list with different species. As a result, the current Pathway landscape has strayed from its original theme. Unfortunately, there is no record to document these changes.

As stated above, the original plant list was developed through collaboration of professional landscape architects, a City task force, and City staff and consultants. Each species, its color, size, and location, was selected to perform a certain function in the overall landscape design. During the Task Force's deliberations, it was understood that not all plants would be successful and adjustments would be needed. However, any changes to the plant selection and location should be made with an understanding and appreciation of the original design intent.

Plants that do not appear to be successful should be assessed according to a standard procedure:

Why is a given plant not thriving?

- Is it not suitable for its location? *Perhaps this species will thrive in a different section of the Carmel shoreline landscape.*
- Was its failure due to trampling or other human/dog activity? *Perhaps the addition of guardrails or boulders could help achieve success.*
- Was there a problem with watering or fertilizing? *These should be adjusted before removing a species from the plant list.*

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[34] RHAA landscape plans, entitled "Carmel Beach Restoration Phase II." Copies of these plans are kept on file at the Carmel-by-the-Sea City Hall, and the Departments of Community Planning and Building and Forest, Parks, and Beach.
[35] Forestry Commission and Planning Commission
[36] Coastal Development Permit #3-83-217-A2, approved June 9, 1987.
[37] Coastal Commission approval of the recent Carmel Bluff and Beach Access Improvement Project was based, in part, on the City's promise to follow the RHAA landscape plans when re-vegetating areas affected by the project.

If, after these assessments, it is determined that a planting be modified or a species replaced, then new plants/species must be selected that fit well with the Pathway landscape design criteria, stated above. Any changes to the plant selection must be recorded, and periodically considered by the Carmel Forest and Beach Commission.

Beach Landscape Progression

The landscape design of the Carmel Beach Bluff Pathway affects, and is affected by, private property landscapes along Scenic Road between Eighth Avenue and Martin Way. One goal of the original Pathway design was to create a landscape link between public lands and the adjacent private property landscapes. This landscape progression concept would help unify the visual experience of the shoreline. This goal has been only partially achieved. Progress in this area could result in a revitalized holistic landscape theme for the City's entire shoreline.

Rocks and Boulders

One special component of the shoreline's natural landscape is the use of rocks and boulders. All public walls along Carmel's beach and bluffs are either built from stone or from reinforced concrete that has been faced with stone.

The Eighth Avenue stairway is built of "Carmel stone," flat pieces of "soft" limestone that were quarried locally. Two patios located near Eleventh Avenue and the entries to all stone trash/recycling container enclosures are built with "Arizona sandstone," an imported "hard" stone that creates an excellent walking surface.

At most other locations, the City used golden granite rocks, which were also obtained from local quarries. Some of the earliest shoreline walls were composed only of golden granite rocks and mortar. Walls constructed after 1978 have been built of reinforced concrete that is faced with golden granite. This style is used for seawalls, retaining walls, and on many stairways and trash/recycling container enclosures.

Large granite boulders are an integral part of the shoreline landscape and undeniably contribute to its aesthetic character. Boulders punctuate planting areas. They also serve as natural benches. At strategic locations, they are used to help control pedestrian flow along the Pathway.

Guardrails

At several locations, the City uses wooden guardrails as a barrier between the Pathway and the beach bluffs. Guardrails, in conjunction with landscape plantings and boulders, help prevent beach visitors from trampling vegetation or walking on fragile and sometimes dangerous slopes. Guardrails are substantial structures, and are usually built no higher than 30 inches. City personnel must be prepared to install additional guardrails, plants, and/or boulders, if changes in pedestrian traffic patterns threaten new areas.

Benches

Pathway designers wanted to ensure ample places for people to sit along the bluff top and enjoy the shoreline's scenic vistas. In keeping with the project's design philosophy, they chose to build benches of a simple style, made of wood and/or stone.

Some benches utilized large pieces of driftwood that washed up on Carmel Beach. City personnel began setting these aside, even before the final plan had been approved. During the Pathway's construction phase, the most suitable driftwood was sanded, attached to cement plinths, and installed at strategic locations. These informal benches have become one of the most popular elements of the Beach Bluff Pathway.

In addition to benches, the City has also placed large boulders in selected locations to be used for sitting.

Signage

Signs provide important information for shoreline visitors. They identify traffic and parking regulations, give directions to nearby beach accesses, provide information about City ordinances pertaining to alcohol use and walking on fragile slopes, and warn of hazardous conditions.

Of all the topics dealt with by the Carmel Beach Rehabilitation Task Force, signage was the subject of the most intense deliberations. The final design was a carefully crafted compromise between notifying beach visitors of pertinent information and not causing them to be overwhelmed or the unique coastal viewshed to be disrupted.

The number of signs along the Pathway was limited by consolidating information at selected locations (e.g. signs on trash/recycling container enclosures and on "access" sign posts). All informational signs were of muted earth tones to sustain

the integrity of landscape design. To avoid unsightly rust, non-metal signs and fasteners were utilized. Some signs were legally required to be made of metal (e.g. traffic and parking signs); they were enclosed within a wooden frame.

One type of sign purposely stands out from the others. The signs that warn of hazardous surf conditions are bright yellow and made of metal. They were designed by a consortium of Monterey Bay municipalities, in conjunction with the California Department of Parks and Recreation and the U.S. Coast Guard. They are placed mid-level on each beach accessway and are double-sided to be seen from both the beach and the bluff.

Over the years, the number and types of signs have gradually increased. Sign colors and locations have expanded beyond the original design and intent. At some locations, signs are now competing with the natural viewshed.

Water Storage Tanks

One of the most important components of Carmel's shoreline landscaping system lies unseen beneath the ground. It is the City's underground water storage tanks, located just south of the Del Mar section of the main beach parking lot. This storage system consists of two 10,000 gallon, double-walled fiberglass tanks, connected in series, along with a two-inch diameter underground PVC pipe that transfers water to the Pathway irrigation system controller at Eighth Avenue.

This innovative system utilizes water from an underground spring that has historically flowed down to the beach from the town above. The spring's flow is continuous throughout the year. During the drought of 1978, the City recorded stream flow at 12 gallons per minute, and during the peak of the 1982/83 El Niño winter storms, flows of 60 gpm were recorded.

In 1985, the City installed a single 10,000-gallon underground tank; the second tank was emplaced three years later. Water from these tanks is used for a number of functions. It supplies water for irrigating all beach area plantings and for filling the City's street sweeper, sidewalk-cleaner, tree-planting/watering truck, and fire trucks. In addition, water from these tanks could serve as an emergency back-up for water commercially supplied to the City.[38]

[38] This spring water has been tested and found to range from pure to containing low levels of coliform bacteria. This water could easily become potable if treated using standard water purification techniques.

SHORELINE AMENITIES/RECREATIONAL SUPPORT FACILITIES

The shoreline landscape also contains many artificial elements that provide necessary services for beach area visitors.[39] Some support those who walk, run, or play in the Carmel coastal area (Fig. 5).

Restrooms

Carmel's shoreline visitors are served by restroom facilities located at nearly opposite ends of Scenic Road (Fig. 6). The main restroom is sited at the foot of Ocean Avenue, adjacent to the City's primary beach parking lot. This facility contains separate restrooms for men and women. Each is complete with running water, sinks, and appropriate toilet facilities. The women's side also includes a fenced privacy area for changing clothes.

The outside of this facility is faced with golden granite stone, and its appearance fits well with other structures along the City's coastline. The inside of the restroom was designed to facilitate cleaning, including gently sloping floors and drains for easy cleaning. This facility meets ADA requirements for handicapped accessibility.

In 1995, the City established temporary restroom facilities at "Lloyd Point," near Santa Lucia Avenue. These facilities consist of two portable toilets screened by a few Monterey cypress trees. Each facility may be used by either men or women. One is configured for handicap accessibility. Both facilities have water containers for hand-washing. These restroom facilities are serviced by a private company under contract to the City.

Foot Wash-Off Stations

The City has installed non-potable foot wash-off stations at four beach access stairways (Eighth,[40] Eleventh, Thirteenth, and Santa Lucia Avenues). Each is contained within a niche made of golden granite-faced walls, concrete floor with drain, and a self-closing brass faucet. They are used for rinsing sand and watering pets.

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[39] Some artificial elements of this landscape, like the Beach Bluff Pathway, beach access stairs and ramps, and shoreline protection walls and revetments, are discussed in other sections of this report.
[40] The wash-off facility at Eighth Avenue has never been connected to running water.

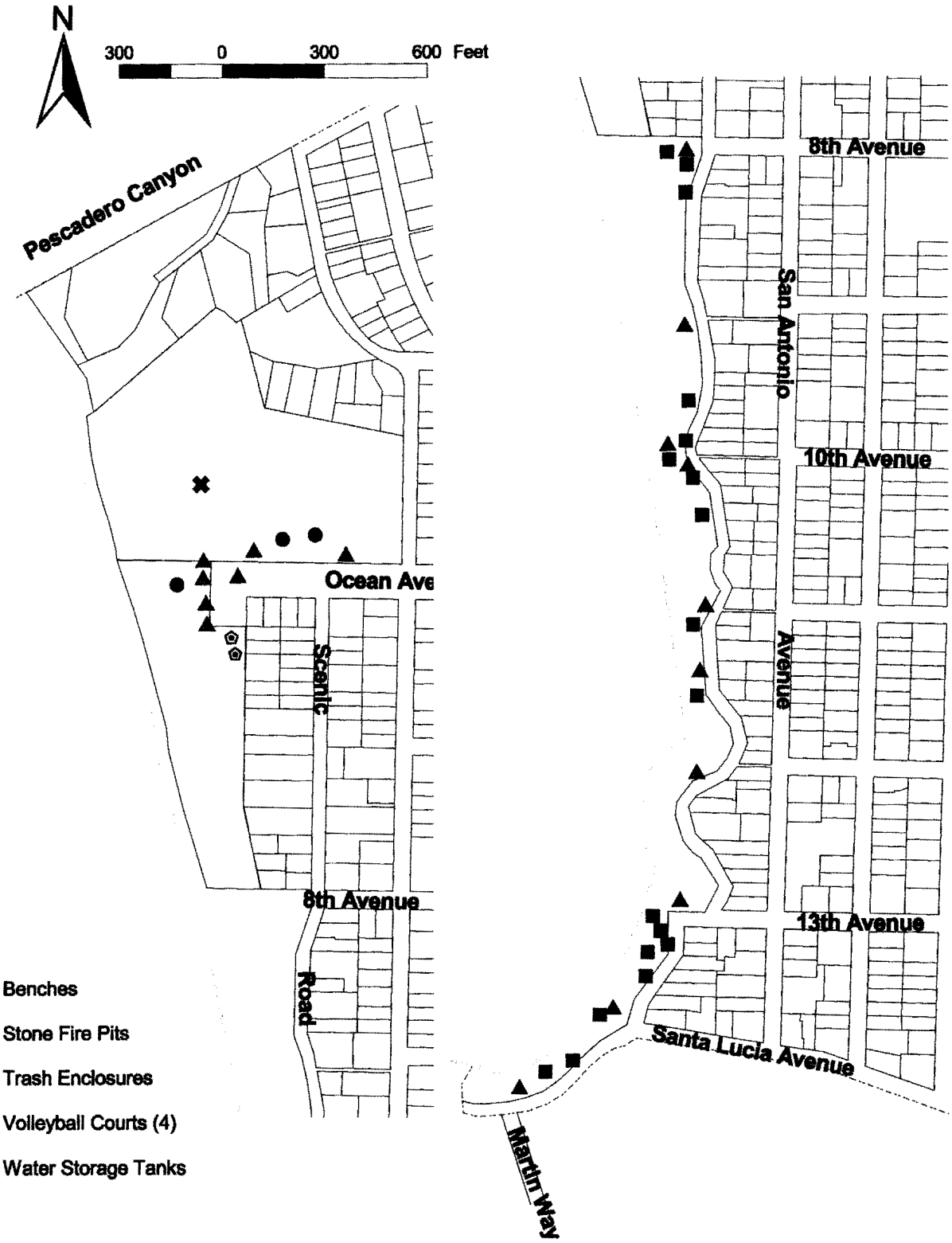

Figure 5 **SHORELINE SUPPORT FACILITIES**

Drinking Fountains

Drinking fountains are located at the main beach restroom (Ocean Avenue) and at the top of the Thirteenth Avenue stairway. Each draws from the City's commercial water source.

Trash/Recycling Containers and Enclosures

Throughout the Carmel shoreline area, the City has built enclosures for its trash and recycling containers. These enclosures serve many purposes:

- They screen the containers from public view;
- They protect the containers from being knocked over;
- They are located at sites easily accessible to the City's trash disposal contractors;
- They are easily cleaned by City maintenance personnel; and
- They serve as appropriate sites for posting beach informational signs.

At present, there are 17 trash/recycling container enclosures along the shoreline. The seven enclosures located in the Ocean Avenue/Del Mar parking lot are made of wood, while the ten enclosures located along the Pathway are built of reinforced concrete and faced with golden granite. Enclosures in each area face different sets of conditions, and, so, were built in different styles and of different materials.

Fire Pits

City ordinance limits recreational beach fires to that portion of the shoreline located south of Tenth Avenue and seaward of the high tide line.[41] However, Carmel does allow fires to be built in three stone fire pits located near the Ocean Avenue/Del Mar parking lot. These pits are located a very short distance from convenient parking spaces and are popular with beach visitors.

Volleyball Courts

In the dunes near the foot of Ocean Avenue, the City has installed posts for four sand volleyball courts; players must supply their own net and ball. These are often used on weekends and during the summer.

[41] Recreational beach fires are discussed in greater detail in Section 5.

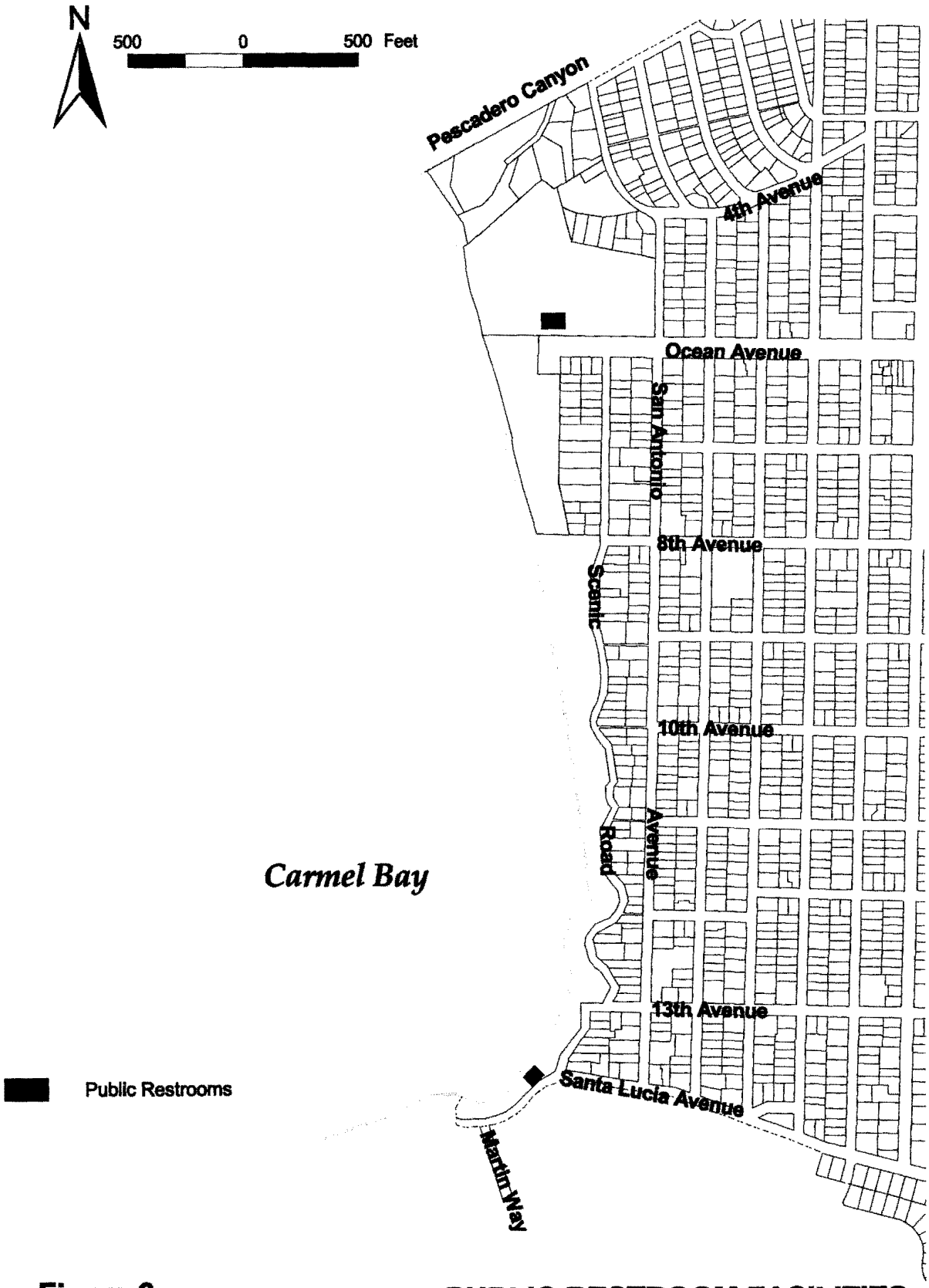

Figure 6 **PUBLIC RESTROOM FACILITIES**

SHORELINE TREES

Carmel has been described as "a small village in a forest." The City's shoreline is also characterized by a large number of trees. Monterey cypress, Monterey pine, coast live oak and acacia are the most dominant and dramatic landscape features along the City's shoreline (Fig. 7).

Cypress overwhelmingly populate the bluffs, dunes and the Ocean Avenue/Del Mar parking lot area. All the Monterey cypress along our shore were planted from seedlings gathered from those native stands at Cypress Point to the north and Point Lobos across Carmel Bay to the south. These trees, some 100 strong, were planted by one of Frank Devendorf's[42] maintenance workers and his young daughter, who nurtured each for several years until established. Now, many are over a century old. Over the years, several cypress that were past their prime, declined and died. During the 1982/83 El Niño storms, 16 large cypress were lost.

Monterey cypress are the sentinels of our shoreline. Whether standing tall or twisted and gnarled, they define the transition and progression of our community's landscape. From the water's edge, past the tidal zone up to the bluffs and dunes, Monterey cypress provide the foundation for all other landscape plantings.

Monterey cypress are the primary arboreal element of the Carmel coastal landscape. Views of the beach, bluffs, and ocean through cypress boughs are a unique visual component of the City's shoreline. Plants that conflict with, or disrupt, the cypress viewshed should be trimmed to avoid encroachment on this viewshed.

Even in death, the Monterey cypress is a noble, majestic feature of our shoreline landscape. Its wood resists decay when other tree species have long since crumbled and returned to the soil. Over the years, those that have died have been allowed to remain as part of the scenic landscape for thousands to appreciate, photograph and paint. Only when they finally weaken and succumb to nature's constant attack are they removed from Carmel's landscape.

The Forest, Parks and Beach Department inspects the structural integrity of all trees along the bluffs and the dunes. If a tree is determined to be a hazard and presents a clear and present danger to the public, then the Department will remove that tree and replace it. In many cases, mature trees are replaced with young seedlings germinated from local seed stock well in advance of their removal. By continuing these practices, our forested beach lands will remain in balance.

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[42] J. Frank Devendorf was one of Carmel's founders.

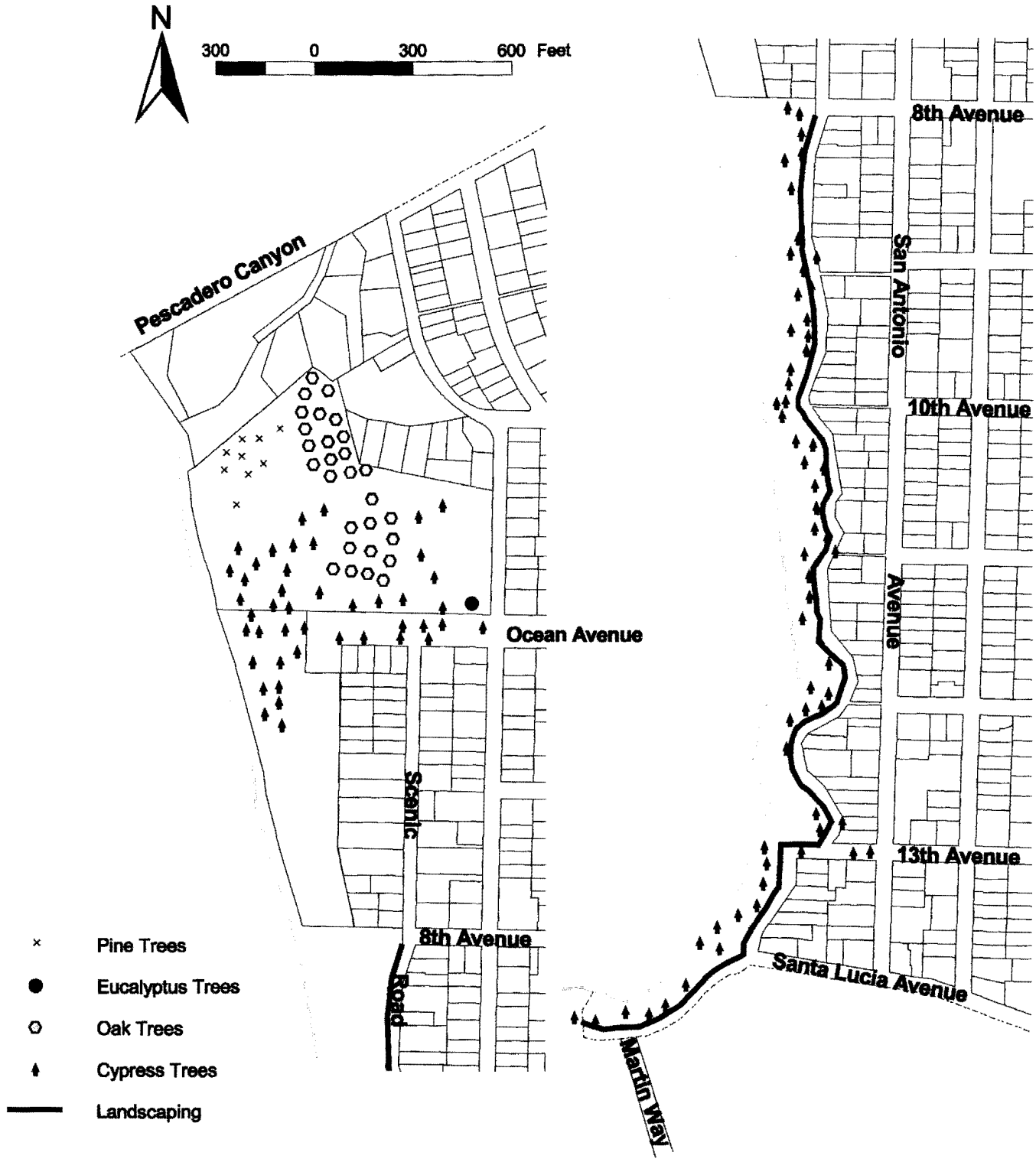

Figure 7 SIGNIFICANT PUBLIC TREES AND LANDSCAPING

In the North Dunes, when trees are removed, the trunk(s) should remain as part of the landscape and only those portions that would be considered a fire hazard (small limbs and branches) should be disposed. This practice would create a more interesting dune environment; one that provides shelter and protection, and aids in the dune building process.

Other tree species have established themselves in small groves in and around the North Dunes. A small stand of nine Monterey pines (and more seedlings) are thriving on the sands near the northern City border very close to the Fourth Avenue pedestrian access. Two groups of coast live oak are at home in the heart of the dunes just north of the Ocean Avenue parking lot; they hug the edge of the "Sand and Sea" development near Fourth Avenue. All of these trees have germinated from seed transported there by some natural means. A lone eucalyptus, the largest in the City, dominates the North Dunes and beach parking lot entry at the corner of Ocean and N. San Antonio Avenues.

Finally, acacia grows at several locations in the City's coastal area: throughout the North Dunes, along the northern bluffs, in many pockets on the Del Mar dunes, and on shoreline bluffs south to the Santa Lucia stairway. These thickets promote landform stability by trapping sand and binding bluff soils. Conversely, acacia's aggressive growth enables it to dominate the upper beach landscape, outcompeting and replacing native species, leaving little room for shoreline visitors to enjoy. Acacia thickets have become convenient places for illegal trash disposal, and are attractive sites for transients to set up residency.

Carmel's shoreline trees and shrubs are trimmed and pruned periodically. Trimming of the massive Monterey cypress trees reduces the length and weight of upper boughs, protecting the tree from structural damage during periods of high winds; this also protects the safety of people who walk, park, or live under these trees. Trimming of acacia and myoporum helps maintain coastal viewsheds and protects neighboring plant habitats from encroachment. Thinning of acacia thickets also helps discourage transient activity and illegal trash dumping.

MANAGEMENT POLICIES

G9-8 Provide adequate facilities that will attend to the needs of the public, mitigate damage to the environment, and respect the neighborhood.

O9-21 Limit development along the Carmel shoreline to facilities that support passive and active recreational activities, beach access, bluff protection and protection of infrastructure. Bluff protection and protection of infrastructure shall be permitted only when existing facilities are in danger from erosion. Ensure that any new structure or development is visually compatible with the natural beach environs, is consistent with the established design of existing facilities, minimizes coverage, and does not impede access. Avoid to the maximum extent feasible the seaward encroachment of new structures.

O9-22 Provide restroom facilities consistent with the volume of people who use the beach and Beach Bluff Pathway.

P9-130 Retain the existing restroom facility at the Ocean Avenue/Del Mar parking lot and consider improvements to increase its capacity.

P9-131 Retain the current second restroom facility at Santa Lucia Avenue until it can be replaced by a permanent site. Remove this facility upon construction of one or more additional permanent restrooms south of Eighth Avenue.

P9-145 Maintain as operational wash-off stations located adjacent to the stairways at Eighth, Eleventh, Thirteenth, and Santa Lucia Avenues.

O9-30 Perpetuate the mix of native dune and horticultural plants in an informal beach landscape.

P9-103 Sustain and maintain the Beach Bluff Pathway design concept and landscape plant selection. Authorize the Forest and Beach Commission to review and approve design changes and plant selections. Require a coastal development permit for significant changes or any change that would substantially alter the design concept.

P9-185 Evaluate the Pathway landscape, including plant selection and associated design elements in consultation with a coastal landscape specialist; identify sites that require revitalization, implement restoration based on the Pathway Design Plan. Address the most severely impacted sites first.

P9-97 Keep the vegetation on San Antonio Avenue near pedestrian access easements pruned for safe visibility of pedestrians by motorists.

P9-178 Continue the use of Monterey cypress as the predominant tree species on the beach bluffs and North Dunes. The exact number of trees may vary over time, but whenever a tree dies or is lost during a storm, replacement trees should be planted in approximately the same location. Maintain a low-to-medium density of trees (40 to 60 trees) in the North Dunes.

P9-179 Encourage neighborhood cooperation and volunteers to assist City staff with the care of the landscape along the Beach Bluff Pathway.

P9-180 Maintain an attractive mix of plant material that favors native species and other drought-tolerant, non-invasive species.

P9-184 Encourage the extension of the City's Pathway landscape style onto neighboring properties:

- Bring all City-owned property along this portion of Scenic Road into compliance with the approved Pathway plan.
- Encourage private property owners to draw from the broad palette of plants used in the Pathway design.
- Make presentations to the Scenic Road Property Owners' Association about this concept and share with the Association the plant list and a list of local suppliers.
- Encourage the use of plants from this palette when reviewing projects on Scenic Road through the Design Review processes.

O9-31 Maintain the vegetation and trees along the shoreline in a safe and healthy manner.

P9-163 Encourage the use of existing stairs, trails and pathways, and discourage off-trail "short cuts" on or over the bluff face. Install landscaping barriers at each "short cut" on the face of the bluffs and/or immediately restore damaged landscaping.

P9-186 Protect Monterey cypress from structural damage caused by high winds. Develop a proactive trimming program to reduce length and weight of limbs and branches.

P9-187 Prune or repair trees immediately following limb failure to mitigate any safety hazards. At other times, trees may be pruned in accordance with City policy, keeping the tree's health as the primary goal.

P9-188 Pruning of vegetation will be done as needed for the health of the plants. This is a natural landscape and formal garden pruning is to be avoided. The Beach Bluff Pathway must be kept clear of overgrowth and periodic pruning is desired. However, neat straight edging is discouraged. Prevent shrubs from growing too high and blocking views of the ocean through the Cypress trees along the Beach Bluff Pathway.

O9-67 Ensure that long-term management activities maintain the natural dune ecology of the Carmel shoreline in a manner consistent with public safety. Protect areas of the shoreline from loss of habitat where special status plant species are growing. For example, Tidestrom's lupine, a perennial herb located in the North Dunes, is a state- and federal-listed endangered and a California Native Plant Society list 1B plant species; its habitat must be protected.

P9-326 Retain a qualified botanist to monitor the population of Tidestrom's lupine on Carmel Beach. The population should be assessed annually (or based on a schedule agreed upon by Department of Fish and Game and US Fish and Wildlife Service to determine if the population is stable and if measures to protect the population should be instituted. If the population appears heavily affected by public use, the City should consider fencing or placing barriers around the occurrences on the beach.

P9-328 Remove any non-native invasive vegetation from special status habitat to eliminate competition.

P9-314 Avoid disturbance or degradation of resources when maintenance vehicles and equipment enter sensitive habitat areas..

O9-34 Protect the fragile dunes and sensitive plants in the Del Mar Dunes and North Dunes against any significant disruption of habitat values.

P9-193 Provide signage indicating that there are to be no fires in the dunes area. Consider using doors on restroom stalls for posting beach rules and regulations.

P9-194 Continue Police Department enforcement of the no-fire regulation north of Tenth Avenue and especially in the North Dunes and Del Mar Dunes areas.

P9-195 Restore, maintain and enhance the degraded habitat in the Del Mar Dunes area to enhance environmental resources and aesthetics. Protect sensitive habitat and special-status species through development and implementation of the Del Mar and North Dunes Master Plan.

O9-19 Provide beach users with information about Carmel Beach, its vegetation, facilities, amenities, and limitations (rules). Educate the public about the danger of the beach and ocean environment and provide emergency response capabilities.

O9-20 Establish a uniform signage program for the beach and bluffs to better inform beach users of regulations governing activities on the beach.

P9-125 Post signs warning beach users about dangerous ocean conditions.

P9-119 Post "beach access/pedestrians only" signs at the top of pedestrian easements to help visitors locate these access routes including North Dunes access routes and the easement from San Antonio through Sand and Sea.

P9-120 Install signage along Scenic Road to direct traffic and indicate beach parking hours.

P9-121 Use as few signs as possible to accomplish the desired purpose. Rely on design features and/or public education to influence behavior first. Establish standards for the total number of informational signs along the shoreline.

P9-122 Consider locating signs at the bottom of the bluff if appropriate.

P9-123 Use signs that are aesthetically pleasing, easily seen, minimal in size, brief in content, of muted color and uniform in design.

P9-124 Post educational/interpretive signs where appropriate along Scenic Road and in the North dunes area.

P9-124 Use international symbols whenever possible, along with a brief explanation of prohibitions and Municipal Code Section citations.

P9-127 Maintain all signs to ensure that they are legible. Signs that are vandalized or defective shall be replaced or repaired as soon as possible.

P9-127 Maintain signs at each stairway indicating fires must be at least twenty-five feet from the base of the bluffs and that they are not allowed north of Tenth Avenue.

P9-129 Use trash containers as a location for educational and regulatory signs.

P9-193 Provide signage prohibiting fires in the dunes area. Consider using doors on restroom stalls for posting beach rules and regulations.

Section 5. RECREATIONAL ACTIVITIES AND EVENTS

RECREATIONAL ACTIVITIES

Carmel Beach and its shoreline area provide opportunities for a wide variety of recreational activities. Beach visitors participate in swimming, surfing, diving, jogging, walking, sandcastle building, volleyball, picnics, and other beach-related activities.

Several City facilities and amenities enhance these beach activities. The main beach restroom, at the Ocean Avenue/Del Mar parking lot, offers changing areas. Four of Carmel's beach access stairways have foot wash-off stations (Eighth, Eleventh, Thirteenth, and Santa Lucia Avenues). Two parking spaces marked white for "loading," located on Scenic Road near Eighth and Eleventh Avenues, enable people to move supplies to and from their vehicles.

Regulated Shoreline Activities

Several recreational activities have significant impacts on the surrounding environment. Some of these are dealt with by City ordinance.[43]

Recreational Fires

Recreational fires have long been part of the Carmel Beach tradition. Histories of Carmel's earliest days are full of tales of writers and artists enjoying fires on the beach and dunes. As the City's popularity and population grew, it became clear that coals and ash from the numerous fires were discoloring Carmel's characteristic white sands – portions of the beach and dunes were turning gray.

As described in Section 2, the beach is cleansed by the natural sand cycle that annually removes sand during winter and re-deposits sand the next spring. But this

[43] City ordinances that deal with activities along the Carmel shoreline are listed in section 9B.

process cleans only a portion of the Carmel's shoreline. Beach sands located above the reach of high-energy storm waves, including nearly all of the City's dune sands, are not affected by this yearly cleansing. Any discoloration of these sands can remain for years.

In 1995, the City passed an ordinance to limit the location and size of beach fires.[44] Fires are now limited to portions of the beach south of Tenth Avenue and west of the high tide line. These areas are renewed by the beach's annual sand cycle. According to Carmel Police Department personnel,[45] this ordinance has reduced many problems associated with shoreline recreational fires:

- fires are no longer started in the dunes; and
- people no longer remove live wood from trees and bushes for use as fuel.

The City's current beach fire ordinance also restricts the building of fires closer than 25 feet from "any wall, vegetation or combustible material not intended to be used in the fire." This has significantly reduced the potential for beach fires to spread, endangering neighboring areas. In spite of the success of the 1995 ordinance, Carmel Beach sand south of Tenth Avenue remains discolored from spring through late fall.

The existing program represents a compromise between two competing values: the tradition of building recreational beach fires vs. the purity of Carmel's signature white sands. Extending the area where fires may be built would enhance one value at the expense of the other.

The City has attempted to use concrete fire rings at a few sites, but these have not proven successful. The heavy rings were difficult to move when threatened with either burial by sand or inundation by seawater.

Other Activities

The City allows alcohol on Carmel Beach, but camping and overnight sleeping on the beach and dunes are prohibited, as is the use of unauthorized vehicles. Riding a horse, mule, or donkey, is lawful if it occurs seaward of mean high water, though access to the beach may be difficult.[46] Operation of motorized personal watercraft

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[44] Carmel Municipal Code Section 8.32.160
[45] Carmel Police Sergeant Terry Chandler (pers. comm.)
[46] The ordinance cited describes suitable beach access at Santa Lucia Avenue. In the years since that ordinance was approved, storm damage and the City's repairs have made Santa Lucia Avenue unsuitable for equine access.

(including jet skis) anywhere in Carmel Bay is prohibited by Monterey Bay National Marine Sanctuary regulation.

Many people bring dogs to Carmel's shoreline area. On Scenic Road, dogs must be leashed, but on Carmel Beach they need only to be under voice control. As in all parts of the City, people must pick up and properly dispose of their dog's wastes. The City has installed special plastic waste-disposal bags ("Mutt-Mitts") at convenient locations along the Pathway.

SPONSORED EVENTS

People may hold private events on Carmel Beach, including parties and weddings. However, any event attended by more than 50 people, or that uses commercial- or City support, requires a Carmel Special Event Permit, as described below.

Every year, the Carmel shoreline becomes the site of several public events. All events, except the Carmel 5K Run, are free admission and open to the public.[47] Popular activities, like the Fourth of July and the Great Sand Castle Contest, may intensify traffic and parking conditions and may require enhanced City support services (e.g. additional trash collection services, increased removal of litter and trash from the beach, and placement, servicing and removal of portable restrooms).

Each public event requires a Special Event Permit from the City. Event sponsors must make a presentation to the Special Events Committee, describing their event. Sponsors must also submit plans for parking, trash collection/recycling, portable toilets, and beach/vegetation monitoring. The City's Special Events Committee has oversight responsibility for each event. This committee prepares an "after-event" impact analysis report.

A list of Carmel's annual Special Events appears in Table 3, below:

[47] For the Carmel 5K Run, a fee is charged to runners; there is no charge to spectators.

Table 3 - ANNUAL SPECIAL EVENTS

Event	Date	Location	Description/ Impact on Traffic and Parking
Resolution Run	January 1st	Scenic Rd, south of Eighth Ave.	A 5K-10K Walk-Run/ Minimal impact on traffic and parking
Kite Festival	Spring	Carmel Beach	Kite flying for children and adults/Increased traffic and parking.
Surf-About	Spring/Summer	Carmel Beach	Surfing contest/ Minimal impact on traffic and parking.
Fourth of July[48]	July 4	Carmel Beach	Beach activities/ Restrictions on traffic and parking.[49]
Movies on the Beach	Summer	Thirteenth Ave. cove	Evening films/ Minimal impact on traffic and parking.
Great Sand Castle Contest	Fall	Carmel Beach	Sand castle building/ Increased traffic and parking.
Carmel 5K Run	October	Scenic Road	Race/ Restrictions on traffic and parking.[50]

[48] The Fourth of July celebration on Carmel Beach is not an organized/sponsored event. Use of fireworks on Carmel Beach is prohibited (CMC 8.32.170).
[49] During Fourth of July, travel and parking are restricted on Scenic Road and on portions of Ocean, San Antonio, Carmelo, Eighth, Thirteenth, and Santa Lucia Avenues. Check with CPD each year.
[50] During the Carmel 5K Run, travel and parking are restricted on Scenic Road and other nearby streets during the scheduled event. Check with CPD each year.

MANAGEMENT POLICIES

G9-9 Provide for a wide variety of passive and active recreational experiences for all beach users while protecting the resource values of beach environs.

O9-24 Manage the City's beach, park and open space resources in a manner to encourage use and enjoyment by residents and visitors.

P9-137 Allow surfing, hiking, picnicking, horseback riding, and typical beach games, such as Frisbee and volleyball on the beach without restriction. Allow dogs on the beach when on a leash or under voice control. Require dogs on the Beach Bluff Pathway to be on a leash. However, if the dog policy combined with educational efforts does not promote a safe environment for beach users and dogs, a leash law for certain times should be considered.

P9-139 Prohibit percussion instruments on Scenic Road, the Beach Bluff Pathway, and beach bluff without a permit. Prohibit sound amplifying equipment on the City Beach without a permit.

P9-140 Prohibit sales or other commercial activities on Carmel Beach, along the bluff or in the Ocean Avenue/Del Mar parking lot.

P9-141 Prohibit overnight camping on any portion of the beach and bluffs.

P9-142 Allow alcohol consumption on the beach until 10:00 p.m.

P9-143 Prohibit bicycles and skating on pedestrian access easements between Scenic Road and San Antonio Avenue and on the Beach Bluff Pathway.

P9-144 Prohibit private dune buggies and motorized marine vehicles on the beach.

P9-138 Discourage any further incursion of recreational activities into the North Dunes habitat. Sensitive resources in the North Dunes habitat shall be protected.

P9-146 Implement procedures and regulations for temporary events on the beach that will protect public access and environmental resources.

O9-25 Allow beach users the opportunity to enjoy a fire for warmth or cooking, while protecting the sand from degradation.

P9-147 Allow beach fires until 10:00 p.m. south of Tenth Avenue but at least twenty-five feet from the base of bluffs. Install appropriate signage to indicate this distance and time limit and to indicate methods for correct extinguishing of fires with water.

P9-194 Continue Police Department enforcement of the no-fire regulation north of Tenth Avenue and especially in the North Dunes and Del Mar Dunes areas.

Section 6. EROSION OF THE CARMEL SHORELINE

Like most of coastal North America, Carmel's shore has experienced significant erosion during at least the past century. Even though it is protected by granite headlands at each end, Carmel Bay faces toward the west-southwest, and receives nearly the full brunt of high-energy winter storm waves.

EROSION HISTORY

Johnson (1984) documented reports describing damage from Monterey Bay/central California storms occurring between 1910 and 1983. Over the past two decades, Carmel's shoreline has been severely damaged by storms associated with the El Niño weather patterns. The most recent El Niño periods (Winters of 1982/83, 1986/87, and 1997/98) were characterized by extended periods of heavy rain, strong winds, and high surf. The extensive damage during these El Niño winters resulted, in part, from the nearly continuous battering of the shoreline by powerful storm waves and the weakening of water-saturated beach bluffs. During the 1982/83 El Niño period, severe winter storms struck Carmel nearly every ten days. More sand was removed from the beach than at any previous time in the memory of long-term residents or documented history.

Photo 8 – *Severe Erosion and Boulder Migration at Tenth Avenue (North) Stairway*

Long-term erosion at Carmel has primarily impacted the City's beach bluffs. Johnson (1984) analyzed maps and aerial photographs that spanned a 75-year period (1908 to 1983). He determined that Carmel's coastal bluffs had eroded at a rate of 0.4 feet/year in the north and 0.3 – 0.7 feet/year in the southern portion. Analysis of aerial photographs showed several periods of extreme bluff erosion, including the loss of at least 20 feet of bluff (near Thirteenth Avenue and near Martin Way) between 1968 and 1970.

The best-documented erosion of Carmel's coastal bluffs occurred during the El Niño storms of 1982/83. Johnson (1984) recorded several areas of significant erosion:

- loss of 20 feet of bluff north of Eighth Avenue;
- loss of 25 feet of bluff between Tenth and Eleventh Avenues;
- loss of 30 feet of bluff between Eighth and Ninth Avenues;
- loss of 30 feet of bluff near Santa Lucia Avenue; and
- loss of 40 feet of bluff between Ninth and Tenth Avenues.

As mentioned in Section 2, not all locations along Carmel's shoreline are equally vulnerable to coastal erosion. Factors, such as sand level, rock type, and the presence of faults or joints, may increase the severity of erosion at specific sites.

An additional factor may be the orientation of exposed outcrops of sandstone bedrock on the beach. These large rocks are located seaward of the coastal bluffs. They are usually hidden under many feet of beach sand, and are only exposed during the harshest winters. Johnson (1984) noted that deep channels exist between some of these bedrock outcrops. These "re-entrants" lie perpendicular to the beach bluffs, and act to direct and focus wave energy toward specific locations along Carmel's coastal bluffs, Scenic Road and its infrastructure, producing more severe erosion or damage.

Johnson (1984) also describes a fast moving "inshore current" that flows laterally along the beach, eroding material from the base of Carmel's bluffs. This current apparently becomes trapped between the naturally occurring sand berm and the bluff face. It moves along the bluff face toward the south end of Carmel Beach, which is at a slightly lower elevation. City personnel have observed this current causing severe erosion at certain locations along the Carmel shore. This lateral flow also makes it difficult, in some cases impossible, for people to safely use numerous beach access stairways.

Another force known to cause significant shoreline erosion is excessive storm water runoff. During the 1982/83 El Niño storms, heavy rains overwhelmed the City's

storm water system. Uncontrolled storm water flows washed away portions of the City's coastal bluffs and undermined beach access stairways. The impact of storm water runoff on Carmel's coastal bluffs is described below.

RESPONSES TO EROSION

For over 40 years, Carmel has responded to threats of coastal erosion with a number of effective public works projects.

Storm Water Runoff Control

Carmel's shoreline is at the bottom of a large hill and receives storm water runoff from the City's streets and drains above. Before 1983, the City had a storm drain system that contributed to the severe coastal erosion suffered during the 1982/83 El Niño storms:

- All of the existing pipes were undersized;[51]
- In some areas, the roadbed of Scenic Road sloped away from its drain inlets, allowing water to pond along the seaward curb; and
- The high seaward curb (8-12 inches) had openings at each beach access stairway, allowing storm-water runoff to flow down stairs and then onto adjacent bluffs. The redirected storm water caused severe bluff erosion that undermined the stairways.

Between 1983 and 1988, the City remedied these problems during the Carmel Beach Rehabilitation Project. Scenic Road was re-paved and its seaward curb was redesigned to drain more efficiently. The entire Scenic Road storm drain system was completely rebuilt, utilizing larger drainpipes and catch basins, and placing outfalls in locations where storm water runoff would not cause erosion to the bluffs or access stairways.[52] The City's Department of Public Works instituted a beach area maintenance program that included the cleaning of debris from protective grates, ensuring that storm water would flow directly into the new drainage systems.[53]

Storm water runoff also eroded bluffs at locations where protective vegetation had been destroyed by people walking or climbing on Carmel's fragile coastal bluffs

[51] In one case, water in a large-diameter pipe flowed into a pipe of smaller diameter.
[52] Redesigning the City's storm water drain system was one of the most important features of the Carmel Beach Rehabilitation Project. During the 1997/98 El Niño storms, more rain fell than during the '82/83 storms, but without any damage caused by excessive runoff.
[53] The peak period for storm drain system monitoring and maintenance begins in late fall, prior to the winter storm season. Monitoring continues throughout winter.

("bluff-cutting"), instead of using the stairways. The City's program of building convenient beach access stairways and using plants, boulders, and guardrails in its landscaping significantly reduced the overall incidence of bluff-cutting, reducing the vulnerability of its coastal bluffs to erosion from storm water runoff.

As described in Section 3, pedestrian access easements along Eighth, Ninth, Tenth, Eleventh, and Twelfth Avenues were designed to carry storm water runoff between San Antonio Avenue and Scenic Road. Each easement directs runoff water into a drain inlet at Scenic Road. A large Monterey cypress tree located near the western end of the Eleventh Avenue easement interferes with the efficient drainage of storm water. In response, the City installed a special drain inlet that can be opened prior to each rainstorm and then closed after the storm has passed. This task is performed by personnel from the Department of Public Works who also install a special barrier with hazard lights over the open drain inlet.

At least half the water captured by the City's storm water runoff system discharges onto Carmel Beach through 19 outfalls of varied design and composition (Fig. 8). To prevent erosion of beach sand and soft bedrock, the City has placed boulders under selected outfalls to deflect drainage water.[54]

Storm water runoff often transports gross pollutants (paper, plastic, natural debris, etc. greater than five mm) into the ocean. In keeping with Federal requirements to clean up storm water discharge, the City recently installed storm water pollution separators into pipes that serve Carmel's two largest storm water outfalls: at the foot of Ocean Avenue and at the intersection of Fourth and San Antonio Avenues. These Continuous Deflection Separation (CDS) units are designed to remove all gross pollutants and greatly reduce the amount of suspended solids that formerly flowed into Carmel Bay.

Sand Redistribution

Since the early 1960s, Carmel has used heavy equipment to redistribute beach sand, moving it from the lower beach to the upper beach. Originally, this procedure was used only along the beach below the Ocean Avenue/Del Mar parking lot. Sand was pushed up the hill during late spring/early summer, to compensate for sand that would be moved downhill by foot traffic. By the end of summer, a significant portion of the bulldozed sand was again returned back to the lower beach.

[54] Many storm drain outfalls drain onto natural rock.

Since 1984, the City has expanded its sand redistribution program, using bulldozed sand to cover the numerous rock revetments (described below) that have been installed along the shoreline. Covering revetments with sand achieves two goals. It enhances the aesthetic appearance of Carmel Beach by camouflaging a pile of hard-edged boulders under a thick layer of white beach sand.[55] It also returns to safe public use an area previously occupied by rocks and voids.

The covering of revetments is not ordinarily recommended. In his final report on the Carmel's Phase I Beach Rehabilitation Project, Johnson (1984) cautioned that:

> "(f)illing in the voids of the rip-rap will reduce the efficacy of the revetment somewhat. The voids absorb some of the wave energy that reduces wave runup and reflected wave energy. Generally, however, if the material filling the voids is not solid, e.g. concrete or tightly compacted soil, the waves soon remove the material and allow the (revetment) to function as designed."

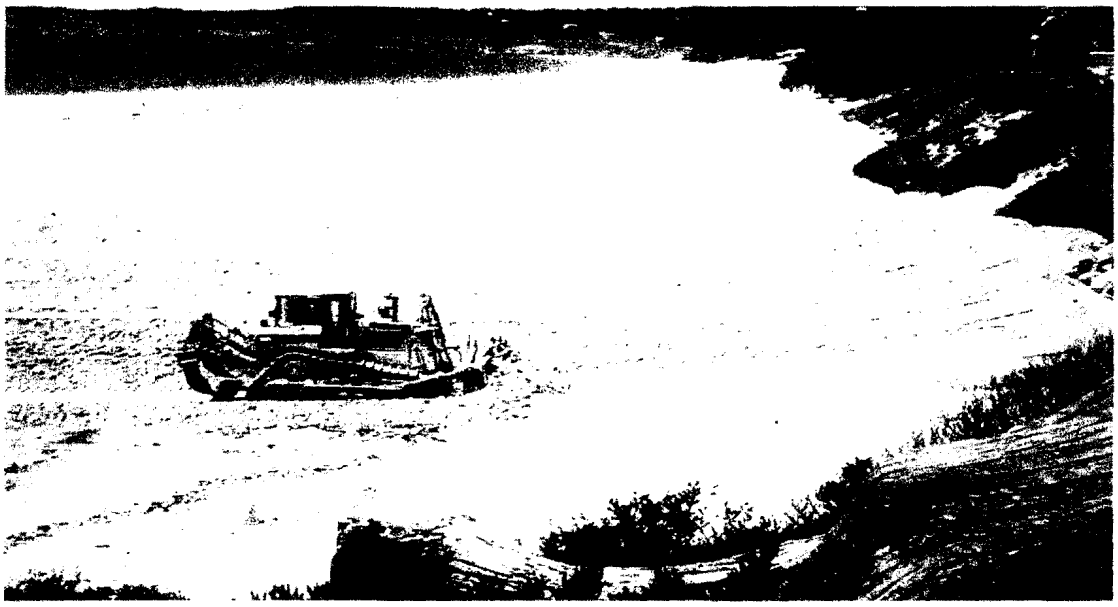

Photo 9 – *Sand Redistribution*

Carmel's use of sand to cover its revetments has, thus far, proven successful. From late spring through early winter, the public has regained the use of beach land that might have otherwise been lost. During severe winter storms, bulldozed sand is rapidly stripped from each revetment, allowing the structure's boulders and voids to

[55] During its sand redistribution program, the City covers each revetment with at least three feet of sand.

reflect and absorb the force of incoming waves. The California Coastal Commission has accepted Carmel's revetment camouflaging as a mitigation that helps offset potential adverse impacts (i.e. loss of beach access) associated with revetment installation.

Recently, the City began using its sand redistribution program to address problems caused by ponded water on Carmel Beach.[56] In 2001, the City used its bulldozer to cut a channel through the berm, allowing the ponded water to drain. The City then moved sand laterally along the beach to back-fill each low area. This restored access to the affected stairways.

During recent years, the City has moved only sand that was located above the high tide line. The actual volume of sand moved each year varies according to several factors, including the amount of sand already on the upper beach, the degree of revetment cover needed, and the amount of lower beach sand available for movement. For example, the need for sand redistribution following a mild winter will be less than after a severe winter. The City estimates that the amount of sand moved varies between 50,000 – 100,000 cubic yards, depending on conditions. Carmel Beach sand redistribution usually requires two to three weeks to complete.

Because sand redistribution is conducted early in the natural beach-building process, removal of sand from the lower beach apparently does not contribute to any significant beach erosion. In fact, the amount of sand on Carmel Beach continues to build during the remainder of summer. By the end of the peak beach-use period (mid-September), some of the sand that had previously been bulldozed uphill will have returned back down to the lower beach where it will now be ready to absorb the impact of upcoming winter storm waves.

Alternative Sources of New Sand

During Carmel's sand redistribution program, no new sand is brought to the beach. Sand is only moved from where it was naturally deposited to a location where the City believes it will do the most good covering revetments.

After the 1982/83 El Niño storms, City staff and consultants considered the possibilities of bringing new sand to Carmel Beach. The primary problem, of course, is that finding a source of sand that matches Carmel's characteristic white beach sand would be very difficult and expensive. The importation of sand that differs in color or texture from Carmel's native sand would be an extremely unpopular project.

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[56] Described in Section 2.

Several sand importation programs are currently in operation around the country. Some utilize trucks to bring in sand from a different location. Others rely on dredging and pumping sand from one coastal site to another.[57]

One possible source of suitable sand might be the subtidal sand bar thought to exist just offshore from Carmel Beach. This sand bar is thought to be the repository of white sand that moves onshore and offshore during the beach's annual sand cycle. At present, there have been no detailed oceanographic studies that document the location, size, or dynamics of such a sand bar, but future study might help the City understand this potential sand source. Movement of any offshore sand onto Carmel Beach would, of course, be expensive, but might be worth the cost in a future where Carmel Beach becomes depleted of sand.

Shoreline Armoring

Since 1958, the City has built seawalls, retaining walls, and rock revetments to protect its shoreline bluffs (see Fig. 8).

Seawalls and Retaining Walls[58]

Some of the earliest walls were built of local golden granite rocks, held together by mortar. More recent walls have been built of reinforced concrete, covered with a facing of golden granite. Many of the City's coastal walls are built upon a foundation sunk deep into the bedrock and some of these walls have "tie-backs" that anchor the wall into the bluff.

All coastal walls are outfitted with ample "weepholes" to promote drainage. This helps relieve the tremendous pressure caused by the build-up of water-laden soils behind the wall, causing the wall to lean forward.

In general, Carmel's seawalls and retaining walls have held up well under the onslaught of coastal storms. The City's only major seawall loss proved the need for solid design and construction. In 1978, a newly built seawall[59] was attacked by storm waves. When built, this wall's footing was not founded into bedrock along its

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[57] A nearby example is at Santa Cruz Harbor, where sand is dredged from the harbor entrance and then pumped to a site just downcoast, allowing dredged sand to re-enter the longshore transport system.

[58] The City classifies a wall whose footing will be reached by seawater under normal tidal conditions, and whose purpose is to protect the bluff against direct wave impact, as a "seawall." A wall built higher on the bluff that is only exposed to ocean spray or wave splash, and that is designed to retain or support bluff soils, is classified as a "retaining wall."

[59] Located south of the 12th Avenue point.

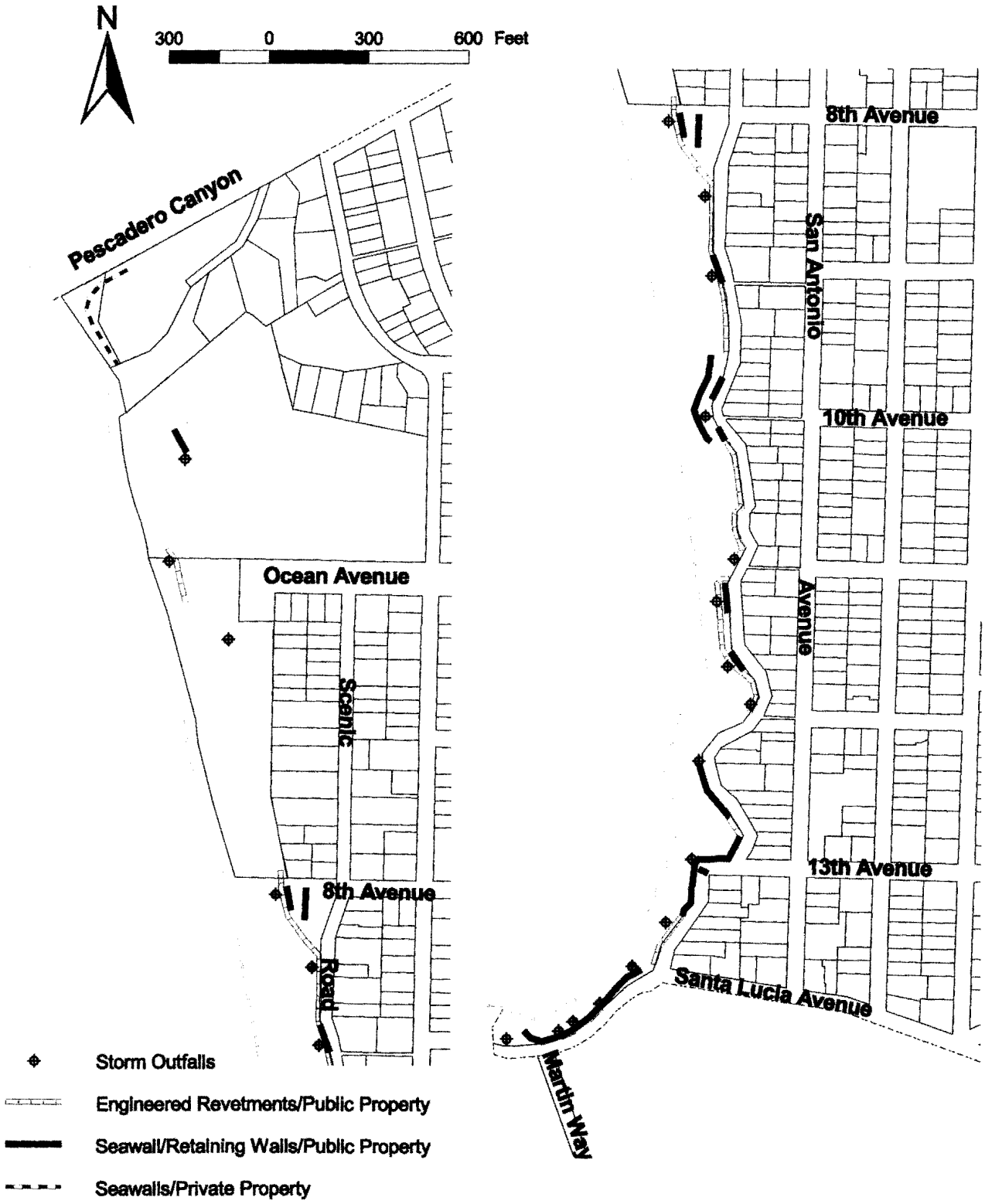

Figure 8 **COASTAL PROTECTION STRUCTURES**

complete base. Waves first undermined the wall's base where it bridged over the sand; once this section failed, the rest of the wall was soon destroyed. All seawalls and retaining walls built since are completely founded into the underlying rock.

At the extreme north end of Carmel's beach lands is a privately owned seawall. It was originally constructed in 1983 to protect the owner's property against further wave attack and additional bluff erosion. Over the ensuing years, this wall was modified several times in an attempt to improve its structural stability and appearance.[60] In 1999, Carmel accepted, in fee title, beach lands seaward of this wall, legitimizing the prescriptive right of public access that existed across this area of the beach. The City is committed to maintaining unimpeded public access and use of the entire beach from the south to north City limits.

Revetments

Since 1978, the City has installed rock revetments, where necessary, at various locations along its shore (see Fig. 8). Some early revetments consisted of rocks dumped up against the bluff face.[61]

Photo 10 – *Shoreline Armoring Along Carmel Beach*

[60] Copies of engineering and landscaping plans for this private seawall are recorded with the Carmel Department of Community Planning and Building.
[61] These have all been replaced by engineered revetments or sea walls.

In 1983, Carmel responded to extensive shoreline bluff damage (from the 1982/83 El Niño storms) by installing several engineered revetments.[62] These were designed by the City's consulting engineering-geologist, Rogers E. Johnson & Associates. Their size, shape, and slope were based on calculations that predicted the size of waves expected to strike the toe of each revetment. The lowest course of boulders was placed into a "keyway" dug into the bedrock at the base of each structure. Filter fabric was laid down before placing the boulders to allow the free flow of water in and out of the structure, and reduce the erosion of sand or bluff soils.[63] Within two summers, these structures were completely covered by sand as a result of the beach's natural sand deposition processes and the City's extensive sand redistribution-bulldozing efforts. In the years since their installation, these revetments have remained mostly hidden from view. During most years, few Carmel Beach visitors are aware of their presence.

Revetments are made of hundreds or more individual boulders, ranging from 700 lb. core stones up to armor stones weighing as much as five tons. A revetment's bluff protection abilities are due to a combination of factors, including the irregular surfaces of each boulder and the spaces ("voids") between them. As a wave strikes the revetment, its energy is quickly dissipated by reflecting off the many faces of each boulder. At the same time, wave energy is absorbed by the spaces between boulders.

A revetment's individual boulders eventually respond to the forces of wave action and gravity. Over time, boulders can be expected to change position. Some boulders may eventually "migrate" seaward, away from the revetment (Photo 8). Movement of the keystones (those boulders located at the base of a revetment) can drastically change the whole revetment structure and critically compromise its erosion-protection abilities. Maintenance of the City's revetments is described in Section 8.

MANAGEMENT POLICIES

O9-32 Continue implementation of the *Shoreline Emergency Action Response Plan* to minimize the dangers to public safety and facilities that may be caused by winter storms or other natural disasters.

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[62] These engineered revetments were installed in 1983/84 during Phase I of the "Carmel Beach Rehabilitation Project."
[63] All work was conducted under the guidance of a certified engineering geologist.

P9-189 Maintain the existing shoreline maintenance and emergency reserve account. Build fund balances over time, to the extent feasible, to handle future emergency repairs at the beach.

P9-190 Consider beach-related projects that address public safety and access as high-priority projects when preparing budgets.

P9-162 Construct new shoreline armoring in areas previously unprotected only when required to protect existing structures in danger of erosion and wave action and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Require any approved structures to include native landscaping (screening), be visually compatible with existing seawall designs, address drainage, incorporate visual mitigation, sand coverage for revetments, and golden granite facing for seawalls.

P9-165 Evaluate the storm water outfall system for purposes of reducing impacts to the beach environment. Consider options to modify and/or remove outfalls and replace or retrofit storm drains with filters or treatment devices to reduce impacts on the shoreline environment.

P9-166 Runoff from storm water outfalls shall be conveyed onto Carmel Beach in a non-erosive manner (i.e. runoff shall be discharged so as to minimize erosive forces).

Section 7. PUBLIC SAFETY

As with all coastal areas, some recreational activities along the Carmel shoreline may be dangerous for beach visitors. People engaged in water sports, like swimming and surfing, do so at their own risk. The level of potential hazard depends upon an individual's experience, skill level, and physical conditioning, as well as environmental conditions (i.e. water temperature, wave size and energy, presence of undertow or rip current, etc.). All beach access stairways and sand ramps have posted signs that warn of hazardous shoreline and ocean conditions and notify visitors that the beach has no lifeguards.[64]

When emergencies occur along the shoreline, a telephone call to 911 will alert the appropriate emergency personnel. Unfortunately, many locations, including portions of the beach itself, are not suitable for cell phone service. Currently, the only public telephone along Carmel's shoreline is a pay phone located outside of the City's main restroom adjacent to the Ocean Avenue/Del Mar parking lot. Calls made to 911 from this phone are free-of-charge. The City is planning to install emergency telephones at two locations along the Beach Bluff Pathway: at Eighth and Thirteenth Avenues.

"The Carmel-by-the-Sea Fire Department is the primary responder to any medical or rescue emergency on the beach."[65] In cases where a person in distress is beyond the surf line, City personnel are prohibited by City policy from entering the water to attempt rescue. Fire Department personnel follow the Monterey County Coastal Incident Response Plan[66] and may call in a rescue boat from Point Lobos (California Department of Parks and Recreation) or a U.S. Coast Guard helicopter. During these situations, emergency vehicles can use the City's vehicle/equipment access ramp, located north of Ninth Avenue, for beach access.

Under certain conditions, pedestrian activity on the beach, bluffs, rocks, or stairways, may be dangerous. Extremely large waves have been known to carry children and adults into the ocean at several locations in Monterey and Carmel Bays. In spite of posted warnings, some visitors purposely stand on shoreline bluffs,

[64] These signs have been approved by the State of California Attorney General's office.
[65] City of Carmel-by-the Sea Fire Department. 2001. Coastal Incident and Beach Rescue Plan (Draft). Prepared by Capt. Mitch Kastros.
[66] County of Monterey. 2001. Operational Area Coastal Incident Response Plan (Draft). Office of Emergency Services.

promontories, and/or stairs in order to experience the raw power of stormy seas. Rescue during stormy conditions is especially difficult. During periods of severe storm activity, the City installs barricades to prevent access to affected shoreline stairways.

At any time, foot traffic on Carmel's coastal bluffs may be hazardous. Some portions of these bluffs may be steep and slippery. Other areas may have poor footing, or be the site of unseen hollows that can develop where fill material was placed. To protect the public from these hazards (and to protect the fragile bluffs and vegetation from intrusive foot traffic), the City has made walking or traversing on the City's shoreline bluffs against the law.

The numerous engineered rock revetments may also represent a hazard to some beach visitors. As described in Section 6, these revetments consist of large boulders carefully placed to form specified slope. Occasionally, some boulders may shift under the impact of high-energy storm waves. People who climb or play on the revetments may encounter dangerous conditions, from perched boulders to voids between rocks. When conditions allow, the City covers each revetment with at least three feet of sand during its annual sand redistribution program. During winter and early spring of most years, revetment may become uncovered. During these periods, foot traffic on Carmel's shoreline revetments is inherently hazardous.

MANAGEMENT POLICIES

O9-19 Provide beach users with information about Carmel Beach, its vegetation, facilities, amenities, and limitations (rules). Educate the public about the danger of the beach and ocean environment and provide emergency response capabilities.

P9-115 Consider establishing and budgeting for the position of an educational officer who would patrol the beach and adjacent areas to educate people about beach usage and prevent damage to the environment. This person should have the authority to issue citations.

P9-118 Maintain emergency 911 telephones phones along the shoreline.

Section 8. MANAGING THE CARMEL SHORELINE

Carmel's shoreline is the most dynamic property owned by the City. Each year, sand is scoured off the beach during the winter and new sand is deposited several months later. Winter storm waves cause severe erosion to the dunes and bluffs that protect City infrastructures, amenities, and Scenic Road and its houses. In addition to these natural forces, the combined impacts of more than one million annual beach visitors who drive, park, walk, run, and play along our shore, significantly affect Carmel Beach and its environs.

During the past half century, the City of Carmel has responded to these forces by creating programs and projects that protect and enhance the shoreline. These include the annual sand redistribution program, landscaping projects, and the building and repair of access stairways, retaining walls, sea walls, rock revetments, storm-drain systems, and the Beach Bluff Pathway.

To remain effective, and to continue serving residents and visitors, Carmel's shoreline and the City's improvements must all be monitored, inspected and maintained as conditions change throughout the seasons and over the years.

MONITORING

There is a common perception that shoreline damage is usually the result of catastrophic and uncontrollable forces. But experience has shown that many problems encountered along our shore could be fixed with greater ease and less expense if dealt with at an early stage. This requires a program of regular and timely monitoring. Monitoring, as defined in this Shoreline Management Plan, refers to the process of "watching, checking, or keeping track of" the Carmel Shoreline.

Shoreline Assessments

The City has contracted for a series of biannual shoreline assessments. These are to be performed by a specialist familiar with coastal processes in general, and the Carmel shoreline in particular. One assessment will be conducted in the fall, before

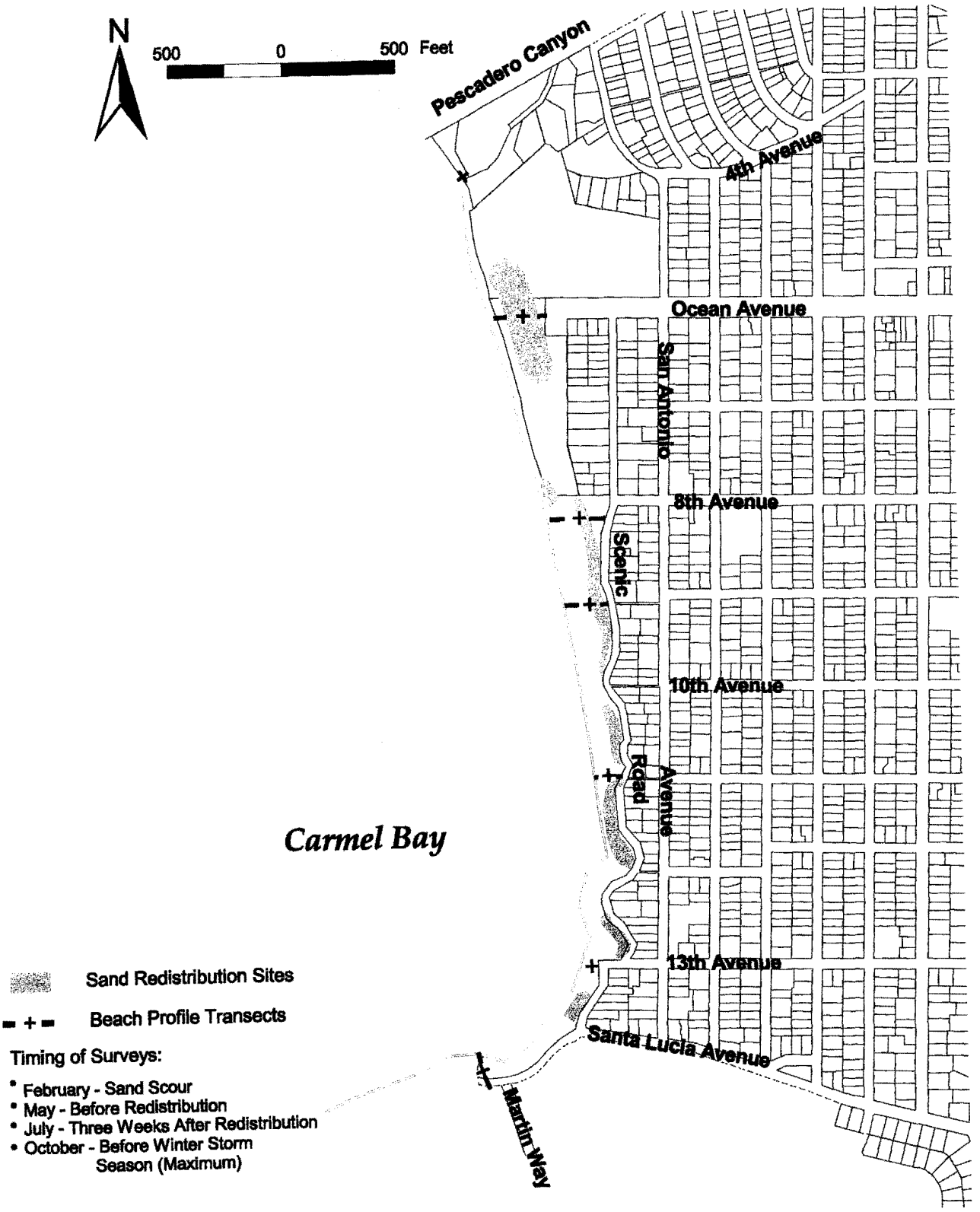

Figure 9

SAND REDISTRIBUTION AND PROFILE TRANSECTS

MANAGEMENT POLICIES

G9-10 Establish and implement a comprehensive shoreline management program for the beach, bluffs and dunes that mitigates degradation caused by public use and natural forces.

O9-28 Minimize erosion of the bluffs.

P9-161 Protect public access, Scenic Road, and the aesthetic character of the coast by maintaining existing seawalls and engineered revetments and by installing new protective structures when warranted. When any existing seawalls or revetments need to be replaced or substantially reconstructed, review seawall and revetment design alternatives, as well as other beach management strategies and determine the best balance among objectives for access, aesthetics and protection of coastal resources (biological, geological, and recreational). Authorize the installation of new protective structures only after careful review of alternatives and when found to be warranted for protection of existing structures and access amenities from erosion risks. Mitigate the impacts of shoreline protective structures on visual quality and beach dynamics using landscaping, sand management and prudent engineering.

P9-163 Encourage the use of existing stairs, trails, and pathways, and discourage off-trail "short cuts" on or over the bluff face. Install landscaping barriers at each "short cut" on the face of the bluffs and immediately restore damaged landscaping.

P9-164 Perform monitoring and maintenance of shoreline protective structures throughout the year including restoration of damaged vegetation, public facilities, infrastructure and access facilities. Restore sand levels annually.

P9-159 Place a series of permanent surveyed benchmarks running the length of Carmel Beach. The surveyed benchmarks shall be described in relation to the National Geodetic Vertical datum (NGVD) and identified through permanent markers, benchmarks, survey position, written description, reference numbers, etc., to allow measurements to be taken at the same location in order to compare information between years.

P9-172 Sand and bluff profiles shall be surveyed in 2003 and again in 2005 to establish a baseline. Thereafter, a set of sand profiles shall be taken at five-year intervals (beginning in 2010) to establish an on-going record of shoreline trends (i.e. volume and natural rate of accretion and/or loss of beach sand) on Carmel's beach and bluffs. For each set of profiles, measurements shall be taken (1) at mid-Winter when sand is at its lowest, (2) at Spring, prior to sand redistribution activities, (3) at early Summer, immediately following sand redistribution and (4) in the early Fall, before sand begins its retreat offshore.

P9-173 After each ten-year period of monitoring beach sand elevations (beginning at 2005), review all available data and make preliminary determinations regarding the effects of seawall structures and sand redistribution activities. If warranted, investigate options for beach nourishment using offshore deposits or other sources that match Carmel Beach sand to replenish the beach and protect its width. The program shall at a minimum: 1) identify potential sources of beach quality sand; 2) include testing and screening for determining the acceptable quality and quantity of beach material; 3) identify placement locations; 4) establish placement methods and any restrictions on work timing or methods.

P9-174 Maintain Carmel Beach as a public recreational resource. If the results of the City's beach monitoring program conclude that the beach has been losing sand over time, develop, implement, and then further monitor and evaluate a beach nourishment program to maintain or increase the available volume of sand.

P9-160 Prepare as-built plans showing the extent of all armoring in the SMP plan area in relation to the existing topography and other relevant features (including the top of bluff, base of bluff, sand-bluff interface, sandstone platforms, Scenic Road, Beach Bluff Pathway, and utilities in the Scenic Road right-of-way, etc.). The as-built plans shall indicate vertical and horizontal reference distances from the surveyed benchmarks to the survey points on each structure for use in future monitoring efforts.

P9-167 Prohibit any construction of substantial or permanent structures on the beach or within Carmel Bay except where required for public health, safety, access or maintenance. Require design review for any structure proposed and minimize conflict with the scenic and aesthetic character of the shoreline environs through such review.

large earthquakes; sea floor landslides; rock falls into bays and oceans; exploding volcanic islands and underwater nuclear explosions (Wiegel, 1970; Furneaux, 1964; Galanopoulos, 1969). Rupture along the San Gregorio fault, just off the Carmel coastline, could create tsunami conditions. Carmel also could be affected by tsunamis generated by large earthquakes occurring anywhere along the Pacific Northwest coastline.

A tsunami is a long-period wave whose speed and wavelength decreases as it approaches a shoreline. The energy within the wave is "crowded" into progressively less water, resulting in a wave with a significant runup height. Waves that were 3 feet high in the open ocean may reach heights in excess of 60 feet during runup. Factors that significantly affect the height of a tsunami wave near the shore include local sea floor bathymetry and the shape of the shoreline. Understanding the geometry of the sea floor and coastline aides researchers in predicting how waves will refract, reflect, and form secondary waves and high-amplitude resonant waves, generally adding to the complexity of runup predictions.

Although most coasts of the Pacific Ocean basin have a long history of tsunami-caused death and destruction, tsunami damage to coastal California is relatively slight in historical time. The only tsunami to cause appreciable damage along the California coast occurred on March 27, 1964, as a result of the great Alaska earthquake (Magoon, 1965). Even though earlier tsunamis produced little damage in California, extensive development of some of the affected coastline over the last 100 years has increased the potential risk of death and property damage.

Recent work by Steven Ward (2001), a geophysicist at the University of California, Santa Cruz, suggests that submarine landslides, perhaps triggered by an earthquake, within the Monterey submarine canyon could generate a tsunami 50 to 80 feet high on the Monterey side of the bay.

Ward's work is based on computer modeling and he cautions that, at least to date, no geologic evidence has been found along the shores of Monterey Bay that a major tsunami has ever swept ashore from the canyon.

B. EMERGENCY ACTION RESPONSE PLAN

INTRODUCTION

Erosion along the Carmel shoreline presents hazards to public safety and threatens City infrastructure. The shoreline is vulnerable to damage from the effects of direct wave action, lateral (along shore) water flow, subsurface soil saturation, slumping, and uncontrolled storm water drainage from the bluffs above the beach.

This Emergency Action Response Plan recommends actions to be taken by the City before, during, and after severe storm events. These recommended actions are designed to provide immediate stopgap measures to protect Carmel's shoreline from further damage. Long-term solutions must be taken through the City's formal design review and permit processes before implementation. Steps described in this Emergency Action Response Plan must be used in conjunction with the corresponding sections of the Shoreline Management Plan.

Part A describes shoreline monitoring and response actions. It describes the responsibilities of personnel from the Forest, Parks and Beach Department, the Department of Public Works, and contract coastal specialists. Actions (shown in CAPITAL LETTERS) will minimize potential public safety hazards and will reduce the level of damage to the shoreline.

Part B contains notes regarding repairs to various shoreline structures, including seawalls, revetments, beach access stairways, and bluffs. These notes should serve as a guideline for repairs.

Part C lists equipment and material, which might be used to repair shoreline damage. These may be stored at City facilities or be available from local sources. A resource list is also included.

A. MONITORING and RESPONSE

PROCEDURE	*RESPONSIBILITY*	*SCHEDULE*
1. DURING STORM SEASON		
• Conduct fall shoreline assessment	Coastal consultant	Fall: Oct/Nov
• Inspect fill areas along the upper shoreline bluff, the tops of masonry walls (10th, 13th, Santa Lucia to Martin Way) for signs of soil fractures, cracks, developing hollows, or soil subsidence. Monitoring should be performed visually by walking the bluffs above the seawalls and along the Pathway and beach access stairways. **ACTION:** IF NECESSARY, VOIDS SHOULD BE FILLED WITH ADDITIONAL COMPACTED CLEAN FILL MATERIAL OR SAND. SLUMPS SHOULD BE EXCAVATED AND AN ENGINEERED REVETMENT CONSTRUCTED AND COVERED WITH COMPACTED FILL, CONTOURED, AND LANDSCAPED.	Forest, Parks and Beach Dept	Early Fall/ Early Spring
• Inspect bluffs vegetated by overhanging ice plant which becomes laden with water during storms and can cause saturated bluff soils to slump. **ACTION:** OVERHANGING ICE PLANT SHOULD BE TRIMMED BEFORE EACH STORM SEASON. CONSIDER REPLACING SOME SITE WITH ALTERNATIVE SPECIES	Forest, Parks and Beach Dept	Early Fall/ Early Spring/ Major Storms
• Inspect concrete stairway structures for holes or cracks, which might allow water to penetrate, and eventually weaken, the stairway. **ACTION:** WHEN DETECTED, THESE DEFECTS SHOULD BE REPAIRED WITH APPROPRIATE FILL MATERIALS.	Public Works Dept	Early Fall/ Early Spring/ Major Storms
• Inspect stairways for overgrowth of plants, especially ice plant, which represents a safety hazard as well as a water trap. **ACTION:** ALL VEGETATION SHOULD BE TRIMMED IMMEDIATELY.	Forest, Parks and Beach Dept	Early Fall/ Early Spring/ Mid-Summer
2. DURING STORM SEASON		
• Inspect all storm drains, gutters, grates, manholes, drop inlets, and outfalls for debris, which may interfere with water	Public Works Dept	Regularly During Storm

drainage systems from 4th Ave. to Martin Way **ACTION:** CLEAN AS NECESSARY. (SEE SMP Fig. 8)		Season
• Inspect storm drain grates and drop-manhole covers to ensure that they are securely in place. **ACTION:** SECURE IF NECESSARY.	Public Works Dept	Regularly During Storm Season
• Inspect eastside catch basin at Scenic Road and 11th Avenue. **ACTION:** JUST PRIOR TO RAINSTORMS, THE UPPER GRATE SHOULD BE LIFTED AND THE OPENING PROTECTED WITH A SPECIALLY DESIGNED DRAINAGE DEVICE (WITH TRAFFIC HAZARD WARNING LIGHTS), STORED AT THE DEPARTMENT OF PUBLIC WORKS FACILITY. THIS PROTECTIVE DEVICE SHOULD BE REMOVED WHEN DRAINAGE FLOWS SUBSIDE.	Public Works Dept	Prior to Storm Events
• Inspect bluff areas directly below storm drain outfalls for damage (slumping, liquefaction) caused by defective drain pipes. **ACTION:** IF DAMAGE IS DETECTED, INSTALL ARMORSTONE TO DIFFUSE DRAINAGE AND MAKE NECESSARY DRAIN SYSTEM REPAIRS AS SOON AS PRACTICAL.	Public Works Dept	After Storms
• Inspect stairway structures. During periods of low sand level, focus attention on structural safety and undercutting of superstructure. **ACTION:** STAIRWAYS SHOULD IMMEDIATELY BE CLOSED TO PUBLIC USE BY INSTALLING WARNING DEVICES AND BARRICADES WHEN UNSAFE CONDITIONS ARE DETECTED. REPAIRS SHOULD BE MADE AS SOON AS POSSIBLE.	Public Works Dept	Regularly in Winter/ Immediately After Major Storms
• Inspect beach sand and soils covering rock revetments for signs of slumping or gaps between granite boulders, which may represent a safety hazard. (SMP Fig. 8) **ACTION:**	Forest, Parks and Beach Dept	During Major Storms & Surf

PRIOR TO ANNUAL SAND REDISTRIBUTION PROJECT, CLEARLY MARK POTENTIAL HAZARDS WITH WARNING SIGNS, BARRIER TAPE AND BARRICADES.		
• Inspect exposed revetments for signs of loose, perched, or migrating boulders. **ACTION:** ANY BOULDERS FOUND TO BE LOOSE OR UNSTABLE, OR TO HAVE MIGRATED AWAY FROM THE REVETMENT BASE, SHOULD BE CORRECTED IMMEDIATELY. IF IMMEDIATE REPAIRS ARE NOT POSSIBLE, DOCUMENT CONDITIONS PHOTOGRAPHICALLY & SCHEDULE REPAIRS AS SOON AS POSSIBLE.	Public Works Dept	Winter/ Prior to Sand Redisribution
• Inspect the top and ends of each seawall for signs of erosion at the bluff/wall boundary. **ACTION:** WHEN IDENTIFIED, ERODED AREAS SHOULD BE REPAIRED WITH FILL, CONCRETE GROUT, BOULDERS, OR OTHER APPROPRIATE MATERIALS COMPLEMENTARY TO THE STRUCTURE BEING REPAIRED.	Public Works Dept	Early Fall/ Early Spring
• Inspect the beach for logs or other large heavy driftwood and debris, which could act as a battering ram causing damage to slopes, walls, stairways, and other structures. **ACTION:** DRIFTWOOD OR DEBRIS SHOULD BE REMOVED ENTIRELY FROM THE BEACH SURF ZONE AND MOVED TO HIGH GROUND. IF NOT FEASIBLE, CUT INTO SMALL PIECES.	Forest, Parks and Beach Dept/ Public Works Dept	Prior to Storms/ After Storms/ or As Needed
• Spills **ACTION:** NOTIFY "NATIONAL RESPONSE CENTER" (800) 424-8802	All Dept.s/All Staff	Respond Immediately

B. SHORELINE REPAIR

During the past fifty years, the Carmel shoreline has been protected by the construction of seawalls and retaining walls, rock revetments, the bulldozing and redistribution of sand, and the deposition of fill material. Even with these protective measures, the shoreline continues to be vulnerable to erosion.

The City's shoreline can be divided into four distinct areas, based on the type of structure or material that protects the beach bluffs: reinforced seawalls and retaining walls, rock revetments, natural consolidated material (sandstone, siltstone, mudstone), and unconsolidated beach and dune sand. Responses to erosion of each area must be specific for the type of material listed.

1. REINFORCED SEAWALLS/RETAINING WALLS

Reinforced seawalls/retaining walls protect approximately 30% of the Carmel shoreline. These massive engineered walls provide substantial protection against both direct wave action and lateral water flow; their built-in drainage systems help control storm water and subsurface hydrostatic drainage problems. These walls may be susceptible to storm damage:

1) In some locations, seawalls/retaining walls create a solid reflective surface that may focus wave energy onto adjacent, unprotected portions of the shoreline; and
2) Because seawalls are made of harder material than the native bedrock, the wall foundations are vulnerable to undercutting by winter wave action when sand levels are low.

In areas where reflective damage occurs, adjacent unprotected sites should be closely monitored for signs of bluff erosion. If necessary, repairs should be made as soon as practical.

*NOTE: Modifications to existing seawalls are not recommended unless accompanied by an analysis of wave action and water flow dynamics. Professionally engineered plans for seawall-modification should incorporate the information described in the Carmel Beach Rehabilitation Project - Phase I Geology Report, and must be in conformance with the Carmel General Plan and Local Coastal Plan (LCP), as well as with the California Environmental Quality Act (CEQA).

2. ROCK REVETMENTS

All existing revetments along the Carmel shoreline include a keyway excavated into the underlying bedrock. Because the bedrock is relatively "soft," the keyway is vulnerable to damage, resulting in rock migration. Depending upon conditions, two modes of repair should be considered:

1) A deeper keyway could be cut at the original location. Overlying rocks would have to be moved, then replaced after the toe rocks are re-installed; or
2) A new keyway could be cut seaward of the original keyway. This option would be the easiest and least expensive method of repair, but would require the use of additional rocks and consume more beach area. Care should be taken to ensure that the slope of any revetment is not too shallow, creating a ramp or platform that facilitates wave run up or overtopping.

All existing revetments also include a layer of filter fabric installed between bluff soils and overlying revetment rocks. This fabric prevents loss of sand and bluff material through the structure.

3. NATURAL CONSOLIDATED MATERIAL

Approximately 15% of the Carmel shoreline is protected by sandstone, siltstone, or mudstone. These natural "soft" rocks are very vulnerable to wave erosion.

As described above, these portions of the shoreline should be monitored for signs of undercutting or erosion along their boundary with seawalls, retaining walls, revetments, and the adjoining bluff material. Where damage is substantial, repairs involving seawall or revetment extensions should be considered. Plans for these structures should incorporate the information described in this Shoreline Management Report, the Carmel Beach Rehabilitation Project Phase I Erosion Protection Report, and must be in conformance with the Carmel General Plan and Local Coastal Plan (LCP), as well as the California Environmental Quality Act (CEQA).

4. UNCONSOLIDATED MATERIAL

The remaining portions of the Carmel shoreline are protected by unconsolidated material (sand, fill material). Carmel's white sand is world famous, attracting both

residents and visitors. In addition to its value as a visual resource, the sand helps protect the beach slopes from wave impacts. The amount of sand on the beach is affected by wave action, and varies throughout the year: during the late fall through early spring, steep, short-period waves move sand from the beach out to underwater offshore sandbars; during the late spring through mid-fall, long-period waves move sand from the offshore bars back onto the beach. During the winter, enough sand may be removed from the beach to expose the underlying bedrock and expose footings of seawalls, revetments, and stairways. When severe sand scour occurs, these structures will be vulnerable to wave damage.

Portions of Carmel's shoreline bluffs, especially from Ninth Avenue to the south City limits, have been built from fill material deposited by the City. This fill contains a variety of materials, including rock, dirt, and sand. In the past, these materials have been eroded by wave action, uncontrolled drainage, trampling, and other forces.

Both the white beach sand and the fill materials will need replacement from time to time. During early summer, the Forest, Parks and Beach Department has been responsible for contracting the City's sand redistribution program: the movement of sand from the lower beach to cover rock revetments along the upper beach and bluffs. Sand redistribution helps replace sand dragged downslope by numerous beach visitors. At present, there is no practical means to replenish Carmel's white sand. Because sand from other locations will have a noticeably different appearance and texture, the importing of "outside" sand is not recommended.

While the bulldozing of beach sand during spring has not caused any noticeable problems over the past 40 years, the wintertime redistribution of this sand is not recommended. During winter, beach sand helps absorb and buffer against the severe storm wave impact and run-up. If beach sand was bulldozed farther onshore, incoming storm waves would strike the shore with more energy, possibly causing greater erosive damage.

C. EMERGENCY CONSTRUCTION MATERIALS

Material	Amount	Where Stored
Sand Bags (burlap)	500	Dept of Public Works
Slurry Bags	20	Dept of Public Works
Boulders		(see list of rock sources)

ROCK SOURCES:

1. Kaiser - Santa Margarita Quarry
   P.O. Box 850
   Atascadero, CA 93422

This quarry supplied most of the armorstone and corestone used during the Phase I project. According to Rogers Johnson & Associates (memo to Carmel Beach Task Force, 17 November 1983): "The Santa Margarita rock is technically classified as DIORITE. It is not true granite; however, it is close in color and composition @-o granite. Diorite is composed mainly of the minerals quartz and plagioclase (both light colored) while - granite is composed of quartz, plagioclase, and orthoclase (a pink-colored mineral). The Santa Margarita rock also contains BIOTITE, which is a black, platy mineral, and this gives the rock its darker hue." According to this memo, the Santa Margarita rock is ideal for use in riprap seawalls.

2. Granite Rock Co. - Logan Quarry
   P.O. Box 151
   Watsonville, CA 95077

This quarry supplied approximately 15% of the rock used during the Phase I project. According to Rogers E. Johnson & Associates (memo to Carmel Beach T-ask Force, 17 November 1983): "The Logan (Aromas) rock is technically classified as a QUARTZ GABBRO, which is composed of the minerals plagioclase Hand

pyroxene with minor quartz. The plagioclase is white to light gray; the pyroxene is the distinctive, dark green, elongate mineral seen in the rock. The pyroxene gives the rock a greenish hue while the Santa Margarita diorite is blacker due to the biotite (the color difference is only slightly detectable.") According to this memo, the Logan Quarry rock is also ideal for use in rip-rap seawalls, but some concern was expressed regarding the tendency of this rock to fracture (though observations made during rock delivery indicated that Logan Quarry rock did not break up any more than did rock from Santa Margarita).

C. CITY ORDINANCES PERTAINING TO THE CARMEL SHORELINE

(*from*: Carmel-by-the-Sea Municipal Code)[77]

6.08.020 Riding on Beach.

It is unlawful for any person to ride, drive, lead or permit any horse, mule or donkey on the beaches and sand dunes owned by the City, east of the mean high water line of the beaches, except for an access strip of land bounded by the westerly prolongation of the northerly and southerly lines of Santa Lucia Avenue and the contiguous strips of land 50 feet in width on either side of the strip of land.

(*Ord. 201 C.S. § 1, 1969; Code 1975 § 630.1*).

6.08.030 Dogs on Public Beach and Park Land.

It is unlawful for the owner or person having charge of any dog to permit the dog to run at large on any City-owned beachlands or on any City-owned park lands unless the owner or person having charge is also present and in control of the dog at such time as it is running loose.

(*Ord. 77-1 § 1, 1977; Ord. 201 C.S. § 1, 1969; Code 1975 § 630.2*).

6.08.031 Dogs on Scenic Road.

On Scenic Road from its eastern property edge to the base of the beach embankment between Eighth Avenue and the south City limits, all dogs and other animals shall be deemed running at large within the meaning of this chapter unless led or restrained by a chain, strap, or cord attached to their collars which is actually held by a person or made fast to a stationary object.

(*Ord. 89-25 § 1, 1989*).

8.16.060 Burying Garbage or Waste. (*Excerpt*)

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[77] Current through Ord. 99-07, passed February 1, 2000. For ordinances marked with "Excerpt," only those portions that pertain to Carmel's shoreline area are shown.

A. It is unlawful for any person to bury waste or other discarded, used or leftover substance in any alley, street, road, highway, public park or other public property or a public place in the City, or upon the beach owned by the City, except waste deposited on City property in connection with authorized municipal fill operations.

(*Ord. 99-01 § 1, 1999*).

8.32.160 Section 1102.3.6 Added – Recreational Fires on Carmel Beach.

Section 1102.3.6 of the Uniform Fire Code is added to read as follows:

Section 1102.3.6 Carmel Beach. All fires on Carmel Beach shall meet the following requirements:

1. Used for cooking or warmth and located on that part of the City beach property which lies south of an extension of the center line of Tenth Avenue and west of a line reached by the high tide provided that all of the following conditions are met:

a. The base of the fire shall be the level at which the lowest burnable material or ash is located, and it shall be on the beach sand unless the fire is in a hibachi, charcoal grill or other like receptacle, in which case the base shall be a horizontal plane touched by the lowest burning material.

b. The burnable material used in the fire shall not extend more than two feet above the base of the fire.

c. Flames from the fire shall not extend into the air more than five feet from the base of the burnable material in the fire.

d. The longest horizontal straight line distance through the base of the fire shall not exceed four feet.

e. Flammable liquids other than charcoal starter shall not be used in any manner in connection with starting or maintaining the fire.

f. No fire shall be built, lit, or maintained on any slope or within 25 feet of any wall, vegetation or combustible material not intended to be used in the fire.

g. All flammable coals, embers or burning material shall be extinguished with water by the person or persons building, lighting or maintaining the fire prior to said person or persons leaving the beach.

h. The extinguished remains of all fires shall be left exposed and not covered with sand.

i. Building, lighting, maintaining or causing or permitting to build, light or maintain a fire in violation of any of the above conditions shall be an infraction.

j. Penalties: Any person who shall violate any of the provisions of this chapter that necessitates the response of the Fire Department shall be guilty of an infraction punishable by a fine of not more than $50.00 per hour or portion thereof, not to exceed $500.00.

(*Ord. 95-15 § 1 (Exh. A), 1995*).

9.20.030 Prohibited on Public Beaches After 10:00 p.m.

No person may serve, possess or consume alcoholic beverages of any kind on the public beach or slopes leading thereto in the City after the hour of 10:00 p.m. This prohibition is applicable to all that beach and slope area lying west of San Antonio Avenue as it extends to the north from Ocean Avenue, to the northern City boundary and west of Scenic Road, from Ocean Avenue to the southern City boundary. This prohibition against the possession or consumption of alcoholic beverages shall extend from 10:00 p.m. on the day it commences until 7:00 a.m. the following day.

(*Ord. 87-6 § 1, 1987*).

10.12.010 Miscellaneous Streets. (*Excerpt*)

The following speed limits on the indicated streets within the City are established:

Street	Speed Limit
San Antonio Avenue, between Second and Fourth Avenues	20 mph
Scenic Road, between Ocean Avenue and Santa Lucia Street	15 mph

(*Ord. 82-25 § 1, 1982; Code 1975 § 510.1*).

10.32.140 Resident Permit Parking. (*Excerpt*)

It is the purpose of this section to establish for residents or owners of residential property (R-1, R-4) within the corporate limits of the City, a permit parking system in the commercial district.

A. 2. Vehicles bearing current residential parking permit stickers shall be allowed to be parked along Scenic Road at all times, and in those areas of the residential district designated by resolution and properly posted for residential permit parking.

B. A residential parking permit sticker shall be issued to an eligible resident or owner of residential property (R-1, R-4) within the corporate limits of the City, by a City employee who shall place the sticker on the left rear bumper of the vehicle so that it can be readily seen by a traffic-control officer. In order to be eligible to receive a residential parking permit sticker:

1. The applicant must prove residency or ownership of residential property within the corporate limits of the City; and

2. The applicant must prove that s/he is the registered owner of the vehicle.

C. 1. Residency may be proved by:

a. A showing that the current registered voter list on file with the Registrar of Voters for Monterey County indicates that the applicant is a registered voter with an address within the corporate limits of the City;

b. A declaration under penalty of perjury signed by a currently registered voter certifying that the applicant is a resident of the City;

c. A valid California driver's license indicating the applicant's address is within the corporate limits of the City; or

d. Other acts, occurrences or events that indicate that presence in the City is more than temporary or transient.

2. Ownership of residential property within the corporate limits of the City may be proven by:

a. A current homeowner's exemption;

b. A valid deed; or

c. Any other reliable manner of establishing title.

d. Residential parking permit stickers shall be issued pursuant to procedures to be established by the City Administrator. Copies of the procedures may be obtained from the City Clerk. The stickers shall be good for one year. A fee shall be established by resolution of the City Council to cover the cost of materials and labor involved in providing the sticker. The fee shall not be prorated because a sticker is issued for less than one full year. The fee may be changed by resolution of the City Council.

(*Ord. 95-4 § 1, 1995; Ord. 91-2, 1991; Ord. 89-27 (Exh. A), 1989; Ord. 87-10 § 1, 1987; Ord. 87-3 § 1, 1987; Ord. 86-18 § 1, 1986; Ord. 81-16 § 1, 1981; Code 1975 § 550.8*).

10.32.080 Unlawful Acts. (*Excerpt*)

It is unlawful for any person to park or permit to be parked any vehicle, pushcart or other contrivance within the City on any street, parking area, park or other public land or area within the City, under the following conditions:

D. Recreational Vehicles. To park any house trailer, camper or other vehicle adapted for sleeping, eating, camping, or other human habitation purposes, except that such vehicle may be parked on the public streets, in accordance with other State and City laws regulating parking, for a period of not more than six consecutive hours within any 24-hour period, providing that during the period of parking the vehicle is not used for sleeping, food preparation, camping, eating or other human habitation purpose.

G. Parking on Certain Streets. To park or permit to be parked on any portion of Ocean Avenue west of San Antonio, Del Mar Avenue, and Scenic Road any vehicle exceeding 12,000 pounds gross weight or exceeding 20 feet in length overall, including bumpers, or exceeding seven and one-half feet in height at its highest point, except when engaged in the loading or unloading of passengers or goods as may otherwise be permitted by law.

(*Ord. 84-5 § 1, 1984; Ord. 77-12 § 1, 1977; Code 1975 § 549*).

10.40.026 Skateboarding on Scenic Road and the Accessways Leading Thereto.

It is unlawful for any person to ride, use or operate any skateboard, bellyboard, coaster, skatewheeled coaster or similar contrivances upon Scenic Road between

Eighth Avenue and Santa Lucia or upon the following accessways leading to Scenic Road from the western edge of San Antonio Street: Eighth Avenue, Ninth Avenue, Tenth Avenue, Eleventh Avenue, Twelfth Avenue and Thirteenth Avenue.

(*Ord. 88-18 § 1, 1988; Ord. 88-23 § 1, 1988*).

10.40.030 Driving on Beaches.

No person shall drive or operate any vehicle on any beach, park, or other property owned by the City except on designated roads or parking areas unless such driving or operation is for a governmental purpose, emergency rescue work, or necessitated by authorized construction work.

(*Ord. 44 C.S. § 1, 1962; Code 1975 § 536.5*).

12.32.050 Disturbance of Natural Resources.

Without a City permit it shall be unlawful to dig and remove any beach sand, whether submerged or not, to make any excavation by tool, equipment, blasting, or other means or agency, except that this shall not prohibit the removal of driftwood or the construction of sand castles or other similar sand structures on the beach, utilizing natural materials found on the beach.

(*Ord. 79-21 § 35, 1971; Ord. 256 C.S. § 3, 1971; Code 1975 § 697.02(a)(3)*).

12.32.100 Climbing Trees.

It is unlawful to climb any tree in those portions of public property designated as beachlands, Devendorf Park, and the center islands of any street. Nor shall any person climb any tree in any other portions of public property in such a manner as to damage or injure the tree. Nor shall any person climb upon, walk upon, sit upon, stand upon or dig in or otherwise disturb, or in any way injure, impair or damage any garden areas occupied primarily by plants, other than grass.

(*Ord. 256 C.S. § 3, 1971; Code 1975 § 697.02 (b)(2)*).
12.32.115 Littering or Depositing of Glass, Metal, Debris, Pine Needles/Tree Debris Compostable Refuse, and Other Refuse or Wastes.

It is unlawful, without a City permit, to throw, deposit, sweep, leave or otherwise discard upon any public street, right-of-way, park, beach or other public property anywhere within the City bottles, cans, glass, metal, plastic, petroleum substance, paint, paper, dirt, rubbish, waste articles or any other similar waste thing or substance whatsoever, whether liquid or solid, unless the deposit is made into a container specifically provided for that purpose. A fee for the scheduled pickup of pine needles/tree debris compostable refuse not exceeding one cubic yard per load, per week, shall be established by resolution of the City Council which may be amended from time to time.

(*Ord. 93-18 § 1, 1993; Ord. 83-4 § 1, 1983; Code 1975 § 697.02 (c)*).

12.32.160 Picnicking and Camping.

It is unlawful to picnic, camp, place tables, place chairs, eat, hang out things to dry, or do any other act connected with human habitation, on any public right-of-way, sidewalk area or in any parking area. This prohibition shall not prohibit the eating of food items customarily purchased for the purpose of eating while walking on the sidewalk, such as ice cream cones, and other hand-held, ready-to-eat items sold for consumption off the premises, and obtained and consumed incidental to walking or some other legal activity. It shall apply to eating when the eating is the primary activity. This prohibition does not prohibit the taking of picnic supplies and equipment from parked vehicles to the beach or other areas specifically designated for eating or picnicking.

(*Ord. 76-27 § 1, 1976; Ord. 256 C.S. § 3, 1971; Code 1975 § 697.02 (j)*).

12.32.165 Beach Use Restrictions.

A. 1. No person, firm, corporation or other entity shall build, light, maintain, cause or permit to be built, lighted or maintained any open or outdoor fire on any public beach or fire pits designated by the City after the hour of 10:00 p.m. No fires shall be permitted at anytime on the slopes leading thereto within the City, except in fire pits designated by the City. This prohibition is applicable to all that beach and slope area lying west of Scenic Road and south of Ocean Avenue to the southern City boundary. No fires shall be permitted at any time on all that beach and slope area lying west of San Antonio from Ocean Avenue to the northern City boundary, except in fire pits designated by the City.

2. The prohibition against all fires on all the beach that lies at or below the high tide line and in fire pits designated by the City shall extend from 10:00 p.m. on the day it commences until 7:00 a.m. the following day.

B. It is unlawful to walk over or otherwise traverse any slope or area between Scenic Road and the beach or any other public area leading to the beach when the City Council has by resolution prohibited walking over or traversing such area, and designated specific paths, steps or ways for public access to the beach, and signs have been posted at reasonable locations giving notice of the prohibition.

(*Ord. 89-30 § 1, 1989; Ord. 87-13 § 1, 1987; Ord. 87-5 § 2, 1987; Ord. 83-15 § 1, 1983; Code 1975 § 697.02(l)*).

12.36.010 Camping on Public Lands.

It is unlawful for any person to camp, or to place, erect, or maintain any tents, house trailers, mobile homes, campers, or any other camping facilities of any kind whatsoever on any public property of this City. It is unlawful for any person to sleep out of doors on any public property, including City parks and beachlands, between the hours of sunset and sunrise.

(*Ord. 280 C.S. § 1, 1972; Ord. 226 N.S. § 1, 1956; Ord. 72 N.S. § 1, 1947; Code 1975 § 639.6*).

17.04.170 Carmel Beachlands.

"Carmel beachlands" means all real property, owned by the City, west of North San Antonio to the north of Ocean Avenue and west of Scenic Road to the south of Ocean Avenue.

(Ord. 159 C.S. § 1, 1968; Code 1975 § 1350.31).

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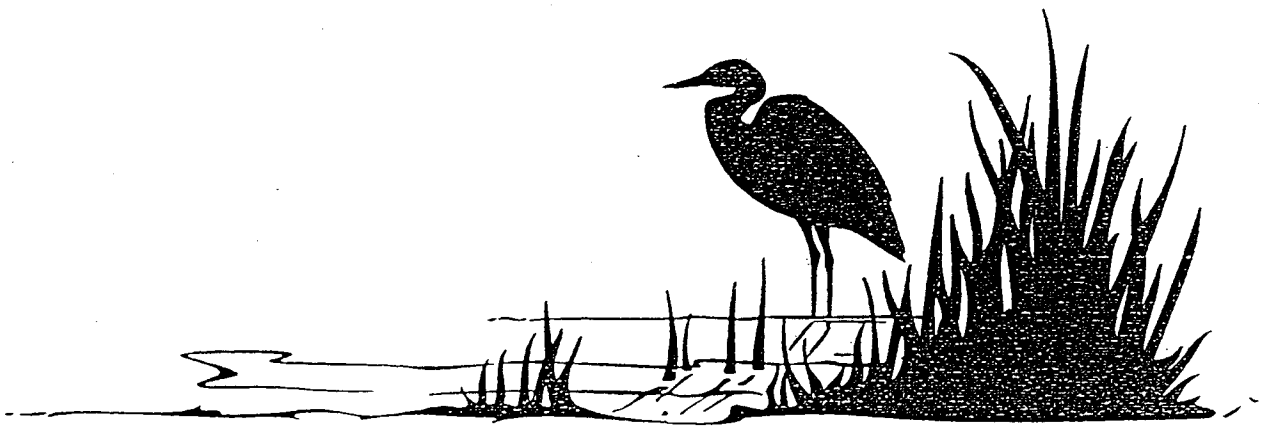
Appendix D: Mission Trails Park Plan

MISSION TRAIL

NATURE PRESERVE

MASTER PLAN



MISSION TRAIL NATURE PRESERVE

MASTER PLAN

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MISSION TRAIL NATURE PRESERVE MASTER PLAN

A. INTRODUCTION

HISTORY OF THE PRESERVE

Mission Trail Nature Preserve, designated a nature park in 1979, approved by the Carmel-by-the-Sea Forest and Beach Commission and adopted by the City Council, has been established as a natural preserve for passive recreational use. The preserve boundaries encompass 35 acres of unspoiled native vegetation and includes the Flanders Mansion, the Lester Rowntree Native Plant Garden and the meadow off Martin Road.

The Preserve affords the user the opportunity to enjoy the natural beauty of seasonal growth and change of flora and fauna, to walk the trails, and to take in the grandeur of the expansive vistas, particularly those of the Fish Ranch, Point Lobos, Carmel Mission, and Carmel Bay.

Stately pines, oaks and a pure stand of toyon dominate the northern reaches of the Preserve, while a dense stand of willow shrouds the low-lying flood plain to the south.

During any season of the year various birds (more than 50 species) can be seen, and displays of native grasses, trees, shrubs, and wildflowers can be viewed as one hikes along the three miles of trails within the Nature Preserve boundaries. Each new season announces the subtle alterations in the character of the Preserve vegetation and provides new color displays for the avid occasional hiker.

B. MASTER PLAN

Most of Mission Trail Nature Preserve is designated as an Environmentally Sensitive Habitat Area (ESHA). ESHA's are defined in Section 30107.5 of the California Coastal Act of 1976 as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and

developments." In a natural setting, ESHA's would be fully self-sustaining and would not need active management. Mission Trail Nature Preserve an isolated remnant of a larger environmentally sensitive area, is now surrounded by urban development. Active management is essential if resource values of this habitat are to be protected and preserved.

The purpose of the Master Plan is twofold:

1. To establish and maintain long-range goals for preservation and use of the Mission Trail Nature Preserve.

2. To guide the City in its decision making process concerning the management of the Mission Trail Nature Preserve.

The Master plan has evolved over a period of years through data gathered from a report prepared by Jones and Stokes Associates, staff analysis, and public input. It consists of both written policies and a physical map of the park. Throughout the process, citizen input evaluating past City actions and suggesting further directions has been actively encouraged. The Mission Trail Park Advisory Committee was assigned the task of preparing the Master Plan by the City Council. Its members are: Russell Gifford, Roberta Bialek, Tim Zorach, Steve Brooks, and Wayne Earls (non-voting members are Gary Olsen, representative from the Rowntree Native Plant Garden and Maxine Jennings, representative from the Recreation Commission).

The Format of the Master Plan is similar to the City's General Plan. It is divided into sections relating to specific areas of the Nature Preserves, physical features, fire suppression, vegetation, trails and public use. Within each of these sections, goals are established, objectives identified, followed by policies supporting the objectives. It is intended that all policies under each objective have equal weight. Naturally, when making decisions based on the policies in this Master Plan, some policies will have greater bearing on the matter at hand than do other policies under the same objective.

The identification number of goals, objectives, and policies in the Mission Trail Nature Preserve Master Plan is correlated to the numbering order in the adopted Local Coastal Program of Carmel-by-the-Sea and thus may not appear in sequential order in this Plan.

C. VEGETATION

Mission Trail Nature Preserve supports a mosaic of vegetation consisting of a Monterey pine forest on inland granitic bedrock and old dunes, central coast arroyo willow riparian forest, box elder and cottonwood trees, wetland drainage, wet meadow, coast live oak woodland, coastal terrace prairie, and horticultural plantings.

G9-18 **Preserve the forested tranquil atmosphere of the Mission Trail Nature Preserve.**

O9-51 Preserve and enhance the vegetative diversity in Mission Trail Nature Preserve consisting of Monterey pine forest, central coast willow riparian forest, wet meadow, coast live oak woodland, redwood, box elder, cottonwood, coastal terrace prairie, and horticultural plantings.

P9-270 Continue the annual Monterey pine seedling planting during the winter of each year (using the seed collecting guidelines of the Genetic Resources Conservation Program of the University of California at Davis, in order to maintain appropriate genetic diversity). Enhance efforts to replant and maintain native tree species similar to nearby native riparian vegetation.

P9-271 Avoid removal or pruning of native riparian vegetation except for drainage channel and road/trail clearance and/or for the purpose of new native indigenous tree/shrub establishment.

O9-52 Enhance coastal terrace prairie on the west and south facing slopes in the Martin Road parcel and between the Outlet meadow and Ladera Drive.

P9-272 Remove by hand nonnative shrubs and their roots invading these areas during late spring when soils are moist and before seed/seed pods become viable.

P9-273 Avoid further erosion and loss of native coastal and terrace vegetation.

O9-53 Reduce the introduction and population of invasive horticultural species in the Preserve.

P9-274 Provide residents of adjacent properties with a list of plants that are compatible with the native vegetation of the Preserve. Encourage use of this list as a guide for planting private landscapes. Additionally, provide a list of invasive plants to avoid.

P9-275 Organize volunteer work groups to remove nonnative plants from the Preserve. The California Department of Forestry and Fire Protection crews from Gabilan Camp could be used to assist this effort.

O9-55 Monitor and protect the Hickman's onion population found in the Preserve.

P9-279 Consider retaining a qualified volunteer botanist to monitor the population of Hickman's onion to determine if current management practices and public use of the coastal terrace prairie are affecting the viability of the population.

P9-280 Limit access in the coastal terrace prairie during winter and spring months when the soil disturbance could affect the species.

O9-56 Maintain and enhance habitat for Monterey Dusky-Footed Woodrat (a special status wildlife species), in accordance with recommendations of a qualified wildlife biologist.

P9-281 Consider retaining a volunteer biologist to monitor the rat's population and develop a management plan to help ensure its survival.

D. WETLANDS AND RIPARIAN HABITATS

Central coast arroyo willow riparian forest occurs as a dense, multi-layered forest along the western boundary of the park. Riparian forest also occurs along a perennial drainage near the western boundary of the Mission Trail Nature Preserve The riparian forest is characterized by a canopy layer of black cottonwood and arroyo willow and a sub-canopy of shrub-size arroyo willow and dogwood.

Wet meadow dominates the southern end of the Preserve. The wet meadow is characterized by a mix of wet meadow species, grassland species, and introduced grasses.

G9-19 **Protect, maintain and enhance the rare coastal habitats and associated plants and animals within Mission Trail Nature Preserve.**

O9-57 Maintain natural drainage patterns except where erosion or human safety problems may be created. Maintain the existing creek bed and preclude it from becoming debris clogged.

P9-284 Remove fallen trees and limbs from the stream channels as needed. Place natural boulders and creek cobbles to prevent erosion only in situations where private property or public safety is at risk.

O9-54 Prepare annual maintenance plans for habitats within the Preserve. Encourage native vegetation to re-establish on sites previously mowed, cut, or invaded by exotic species.

P9-276 Allow willows to grow in the riparian corridor and the wet meadow.

P9-277 Consider removal of both intentionally introduced plants and invasives by instituting an annual program through joint efforts of contract workers and volunteers.

P9-278 Research the most appropriate time for mowing grasses to encourage the growth of native plants and discourage exotics and schedule accordingly.

P9-283 Prohibit cleaning of City maintenance equipment in the Preserve.

E. DRAINAGE

Two main perennial drains and smaller drainages transect Mission Trail Nature Preserve. The main perennial drainage begins at the northern end of the Preserve, runs along the western boundary, and forks near the center. At the northern end, the drainage bottom is generally un-vegetated. The canyon sides are vegetated with Monterey pine and coast live oak with a dense understory of French broom, German ivy, English ivy, and California blackberry. French broom dominates the banks along the northern portion of the drainage, grading into a dense central coast arroyo willow riparian forest (near 11th Street entrance to the Preserve at Willow Trail.) Redwood, bay tree (Umbellularia californica), and bamboo (Bambusa sp.) also occur in localized portions of the drainage.

G9-20 **To preserve the natural drainage of Mission Trail Nature Preserve and enhance wetlands.**

P9-285 Repair stream bank deterioration as it occurs, and remove inert debris and new growth to the extent that they prohibit water flow within the established channel. Projects of this nature shall be reviewed by the Forest and Beach Commission, similar to its review of street projects.

P9-286 Maintain a box culvert inlet adjacent to Rio Road to prevent flooding.

P9-287 Consult with appropriate agencies regarding wetland management.

P9-288 Preclude manmade objects from inhibiting drainage along the road in Mission Trail Nature Preserve.

P9-289 Maintain the shoulders and cross flows on the Preserve bed to insure surface water can easily enter the creek.

P9-290 Clean and grade road shoulders and maintain culverts at least twice yearly, to insure continuous drainage. Trimming by the Forest, Parks, and Beach Department will be conducted to the extent necessary to allow access by the City maintenance equipment and fire apparatus.

F. PUBLIC USES

Mission Trail Nature Preserve is open to the public for passive recreational use. Primary uses include hiking, jogging, birding, and relaxation in a quiet natural setting. There are five Preserve entrances: Mountain View Avenue, Rio road, 11th Avenue, Martin Road, and Hatton Road. These entrances lead to a series of trails meandering throughout the Preserve. This series of trails exceeds three miles in length and is intended for foot traffic only.

O9-58 Provide reasonable low-impact uses of Mission Trails Nature Preserve for the enjoyment of its natural surroundings and plant and wildlife inhabitants.

P9-291 Maintain and make available an up-to-date printed brochure that offers Preserve users helpful information. The brochure would also offer appropriate explanations for Preserve use restrictions.

O9-65 Manage environmentally sensitive habitats in Mission Trail Nature Preserve to maintain and enhance their natural integrity. Preserve and protect the Mission Trail Nature Preserve native plant, wild animal and bird population.

G. LESTER ROWNTREE NATIVE PLANT GARDEN

The Lester Rowntree Native Plant Garden was created to provide a quiet nature study area where native California trees, shrubs and plants are grown for exhibition and study and displayed to enhance the natural beauty of the area. It is located just off Hatton Road and is approximately one acre in size.

O9-59 Maintain the Rowntree Native Plant Garden, within Mission Trail Nature Preserve as an area where the general public can view and study native California plants and trees. The goal is that the knowledge gained will lead to an expanded use of California native plants in private landscapes.

P9-297 Create and maintain a demonstration garden for native flowers in Mission Trail Nature Preserve.

P9-298 Label native plants and areas in the garden at Mission Trail Preserve with identifying and explanatory information.

O9-60 Consider establishing a Volunteer Committee to assist the Forest, Parks, and Beach Director and staff in the responsibility for the garden at Mission Trail Nature Preserve.

P9-299 Maintain communication between Forest and Beach Commission and Monterey Bay Chapter of the California Native Plant Society.

P9-300 Recruit and train volunteers to plant, weed, water and care for the garden in Mission Trail Nature Preserve under the direction of the Forest, Parks, and Beach Department staff.

P9-301 Schedule and advertise volunteer work days as needed to maintain the garden in Mission Trail Nature Preserve.

H. FLANDERS MANSION

The Flanders' Mansion, called "Outlands" by Mrs. Grace Flanders, was completed in May of 1925. At that time the Flanders family moved in and the mansion remained in private hands until 1971 when the City of Carmel purchased it for $275,000. The Mansion is an intrinsic part of Mission Trail Nature Preserve and the surrounding area. Any use found for the Mansion should satisfy the following goals.

P9-294 If retained by the City, preserve_the Outlands property and grounds at Mission Trail Nature Preserve consistent with its status as a nationally registered historical resource.

P9-295 If retained by the City, utilize the Outlands property at Mission Trail Nature Preserve in a manner beneficial to the residents of Carmel-by-the-Sea while minimizing its expense to the City.

P9-296 If retained by the City, support uses at the Outlands property that are compatible with its location in Mission Trail Nature Preserve and adjacent to the Rowntree Native Plant Garden and Hatton Road neighborhood.

I. STEWARDSHIP PROGRAM

The ESHA boundaries could not be extended beyond the Preserve boundaries to include adjacent private land. Habitats do not follow man made area designations. Stewardship policies for ESHA and other areas within the City in included in the ESHA section of the adopted Local Use Plan of the Local Coastal Program.

J. PARKING AND ACCESS

There is no private vehicle access to the Preserve proper. Vehicles may enter from Hatton Road via a driveway that leads to the Flanders' Mansion. Space is available for parking near the Mansion for a limited number of vehicles. The City has considered several parking alternatives around the Mansion. However, a consensus as to the most appropriate location(s) has not been achieved.

P9-293 Formalize a trail through Martin Meadows.

K. USE OF MECHANIZED EQUIPMENT

G9-21 Maintain Mission Trail Nature Preserve using great care to avoid the degradation of resources.

O9-62 Implement the Mission Trail Nature Preserve maintenance provisions.

P9-302 Repair stream bank deterioration as it occurs, and remove inert debris and new growth to the extent that they prohibit water flow within the established channel. (Annually: September – October.)

P9-303 Clean and grade road shoulders and maintain culverts to ensure continuous drainage. Trim vegetation to the extent necessary to allow access of equipment. (Annually: September – October.)

P9-304 Removal of fallen limbs and trees from the stream channels. (As needed.)

P9-305 Place rip-rap to prevent erosion only in situations where private property or public safety is at risk. (As needed.)

P9-306 Mow of meadow grasses to reduce the risk of fire (June.) if consistent with special status plant management needs.

P9-307 Maintain Serra trail to allow access of emergency vehicles. (Semi-annually.)

P9-308 Removal of dead/hazardous trees only as needed. Leave dead trunks in place when not hazardous to provide habitat for woodpeckers and other fauna.

P9-309 Conduct trail maintenance and clearance. (June – August.)

The Forest, Parks, and Beach Director is responsible for monitoring these activities and reporting to the Forest and Beach Commission scheduled tasks and their results. An annual report will be prepared for the Forest and Beach Commission review before submittal to the Coastal Commission.

L. MAPS

1. Jones and Stokes Associates, Inc. map: Location of Special -Status Species, Vegetation Types, and ESHA Boundary at Mission Trail Nature Preserve.

2. Map showing nature trail, service roads, and entrances to Mission Trail Nature Preserve.

3. Map of Park Overlay District adjacent to Mission Trail Nature Preserve.

Map 1

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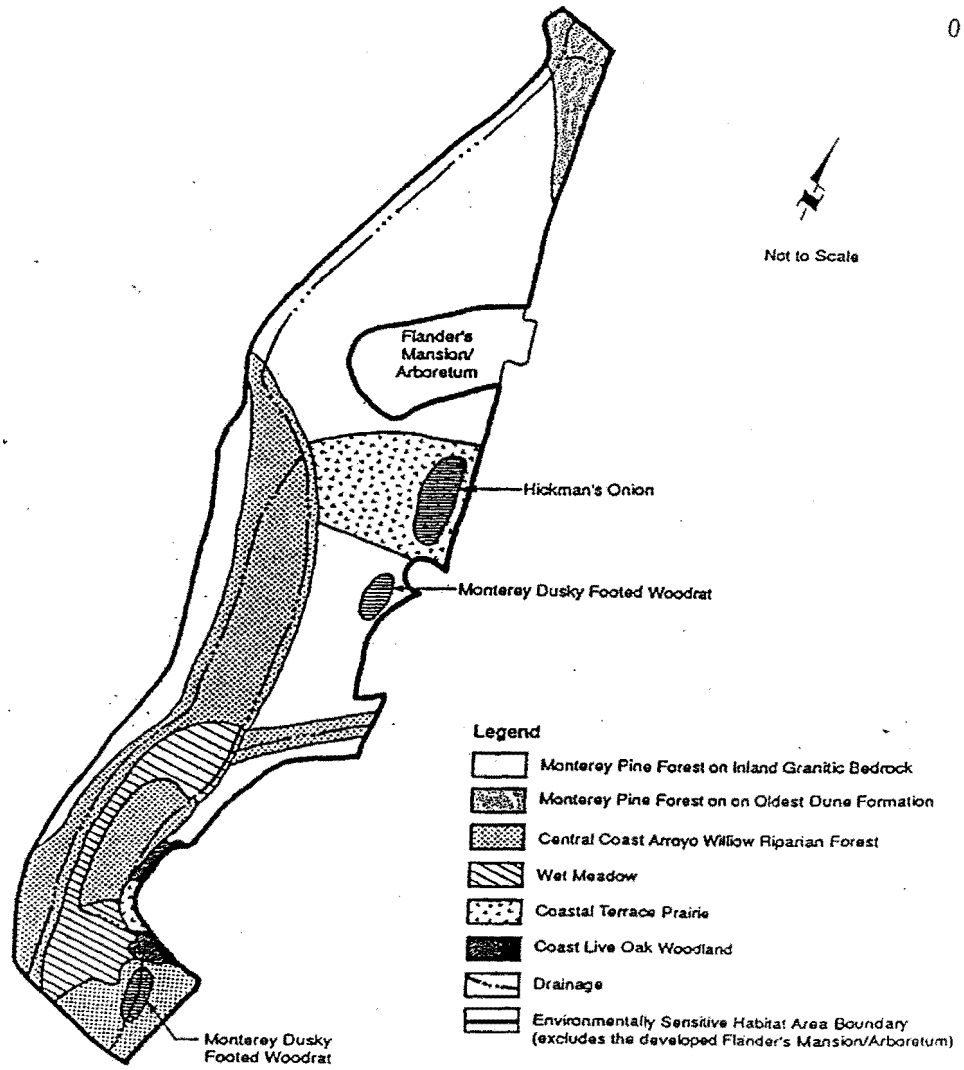

Jones & Stokes Associates, Inc.

Location of Special-Status Species, Vegetation Types, and ESHA Boundary at Mission Trails Park

EXHIBIT C
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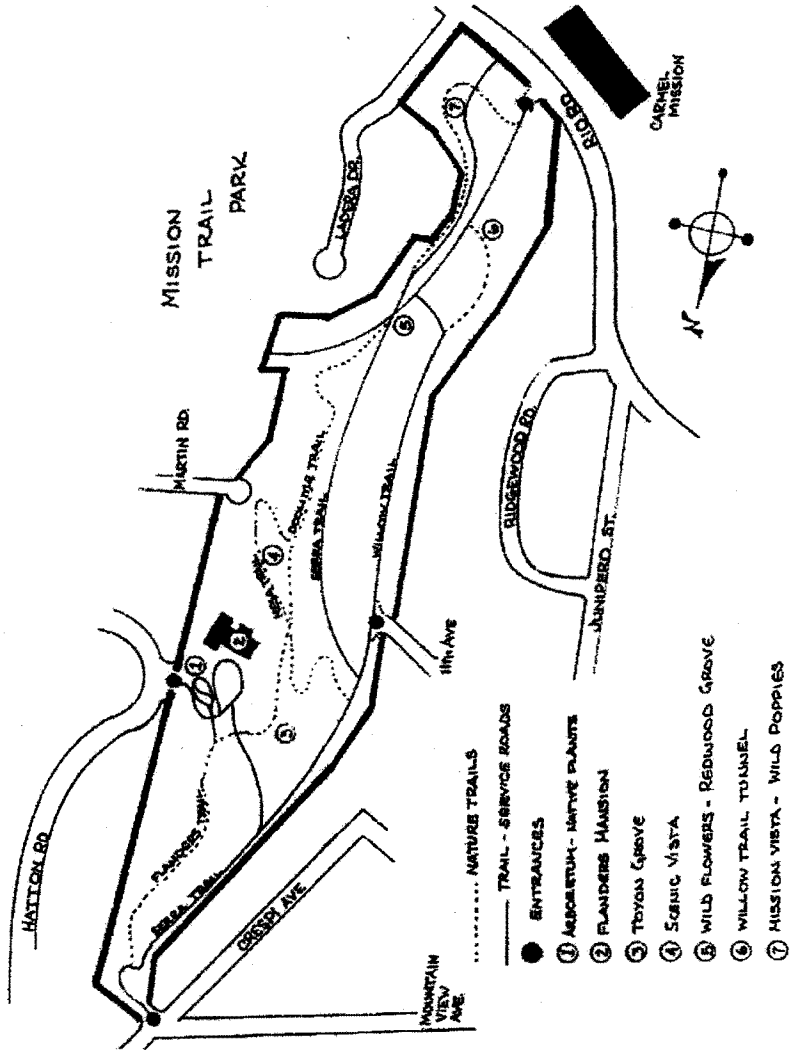
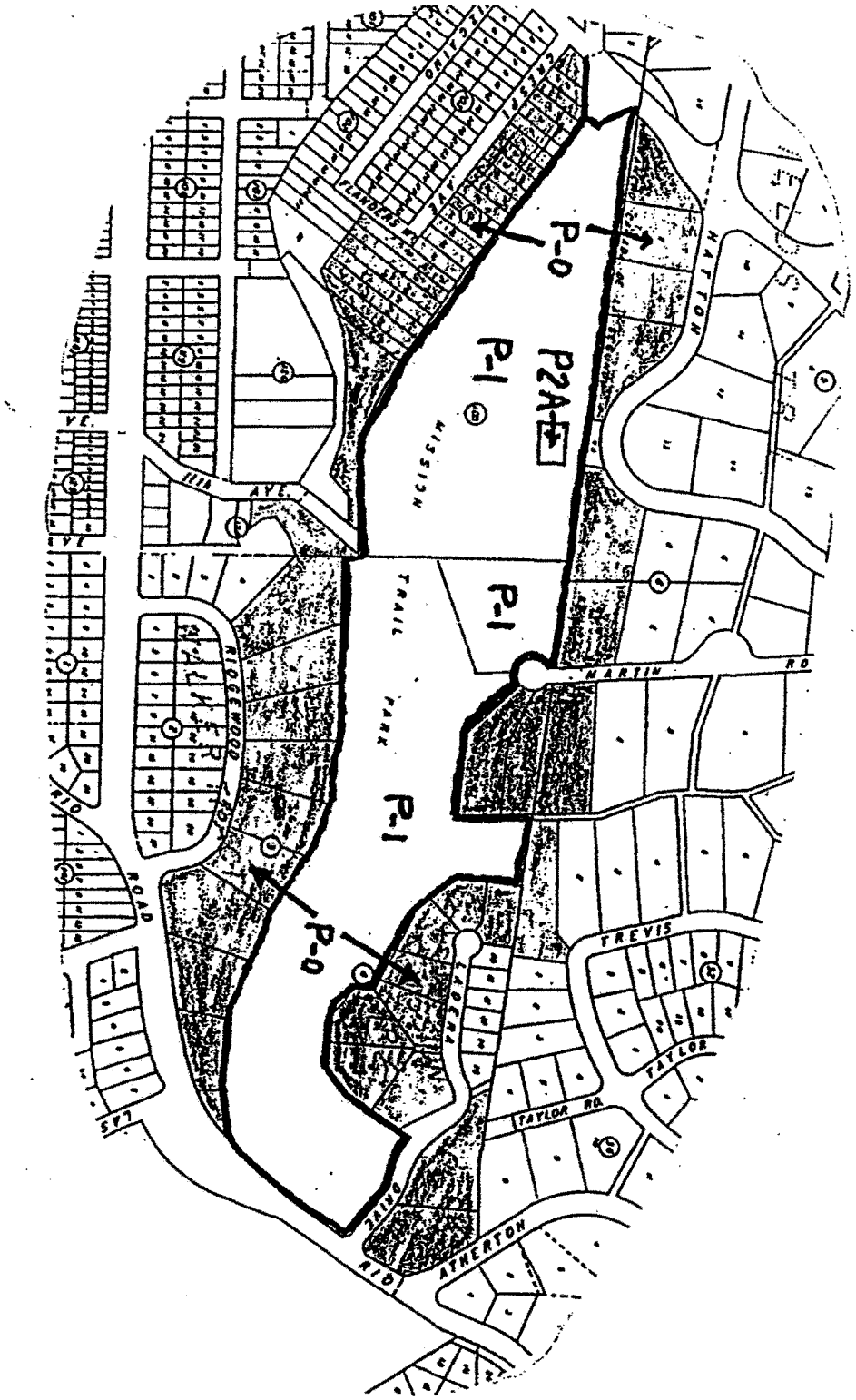
Map 2

Map showing nature trail, service roads, and entrances to Mission Trail Nature Preserve.



Map 3



Map of Park Overlay District adjacent to Mission Trail Nature Preserve.

Appendix E: ESHA Study

Final Results of the Environmentally Sensitive Habitat Area Study Conducted for the City of Carmel-by-the-Sea

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July 6, 1995

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Executive Summary

Jones & Stokes Associates was retained by the City of Carmel-by-the-Sea (City) to conduct an environmentally sensitive habitat area (ESHA) study and resource management evaluations at five undeveloped sites in the city: Pescadero Canyon, Rio Park, Mission Trails Park, Forest Hill Park, and Carmel Beach. The purpose of the study is to establish background information to assist the City in its formulation of policy and programs regarding ESHAs and its management of ESHAs, as required by the California Coastal Act (Public Resources Code, Sections 30240[a], [b)] and 30107.5).

In summary, the following sites support areas that would qualify as environmentally sensitive under the California Coastal Act (criteria used to identify ESHAs are described in Section 2 of this report):

- Pescadero Canyon supports Monterey pine forest on middle-aged dunes that provides watershed protection and a buffer for Pescadero Creek and is part of an important local wildlife habitat corridor, wetland drainage (Pescadero Creek), central coast arroyo willow riparian forest, and wet meadow.

- Rio Park supports central coast arroyo willow riparian forest along the Carmel River.

- Mission Trails Park supports Monterey pine forest (habitat for Monterey dusky-footed woodrat); central coast arroyo willow riparian forest along wetland drainages; coastal terrace prairie; wet meadow; and occurrences of Hickman's onion (*Allium hickmanii*), a federal candidate for listing as endangered (C1) and a species considered rare and endangered by the California Native Plant Society (CNPS) (List 1B), and Monterey dusky footed woodrat, a federal candidate for listing (C2).

- Carmel Beach supports dune scrub; unvegetated dunes; a known occurrence of Tidestrom's lupine (*Lupinus tidestromii* var. *tidestromii*), a state- and federal-listed endangered species and a species considered rare and endangered by CNPS (List 1B), and a reported occurrence of black legless lizard, a federal candidate for listing (C2) and a state species of special concern.

No environmentally sensitive habitat areas were identified at Forest Hill Park.

Section 1. Introduction and Regulatory Setting

The purpose of this environmentally sensitive habitat area (ESHA) study is to provide the City of Carmel-by-the-Sea (City) with background information that will assist in its formulation of policy and programs regarding ESHAs and its management of ESHAs, as required under the California Coastal Act (Public Resources Code, Sections 30240[a] and [b] and 30107.5). The City will use the information in this report to prepare its local coastal program land use plan and implementation plan. The City may also use this information during subsequent review of documents prepared in compliance with the California Environmental Quality Act.

ORGANIZATION OF STUDY

This ESHA study consists of eight sections:

- Section 1, "Introduction and Regulatory Setting", identifies the study sites and describes state and local policies related to environmentally sensitive habitats.
- Section 2, "Criteria Used to Identify Environmentally Sensitive Habitat Areas", describes the criteria used to identify ESHAs.
- Section 3, "Study Methods", identifies the goals and objectives of this study and the study methods.
- Section 4, "Regional and Local Setting", provides the regional and local setting for the city.
- Section 5, "Study Results and Resource Management Recommendations", discusses the results of the study, identifies which habitats are considered environmentally sensitive, and recommends management actions to protect and enhance ESHAs.
- Section 6, "Conclusions", presents the conclusions of this ESHA study.
- Section 7, "Citations", lists printed references and personal communications that are cited in this study.
- Section 8, "List of Preparers", identifies individuals involved in preparing this study.

STUDY SITES

This ESHA study evaluates the following five study sites (Figure 1):

- **Pescadero Canyon.** Pescadero Canyon consists of 10 acres of privately owned land (zoned R-1 [single-family residential]), divided into east and west segments, along the city's northern boundary.

- **Rio Park.** Rio Park includes 6.24 acres of undeveloped land that was recently acquired by the City and could be developed as a city park or parking lot or sold for development. This site is crossed by the Carmel River near its outflow to the Carmel Lagoon.

- **Mission Trails Park.** Mission Trails Park includes 36 acres that were acquired by the City in 1971 and zoned as a passive-use park (P-1 and P-2a) (except Flanders Mansion). This park is subdivided into four study units, identified by the City as Flanders Mansion/Arboretum, Park Proper, Martin Road Parcel, and Outlet Meadow.

- **Forest Hill Park.** Forest Hill Park consists of 2.4 acres zoned as an active-use park (P-2) and contains tennis courts and playground equipment.

- **Carmel Beach.** Carmel Beach includes 21.5 acres zoned as a passive-use park (P-1).

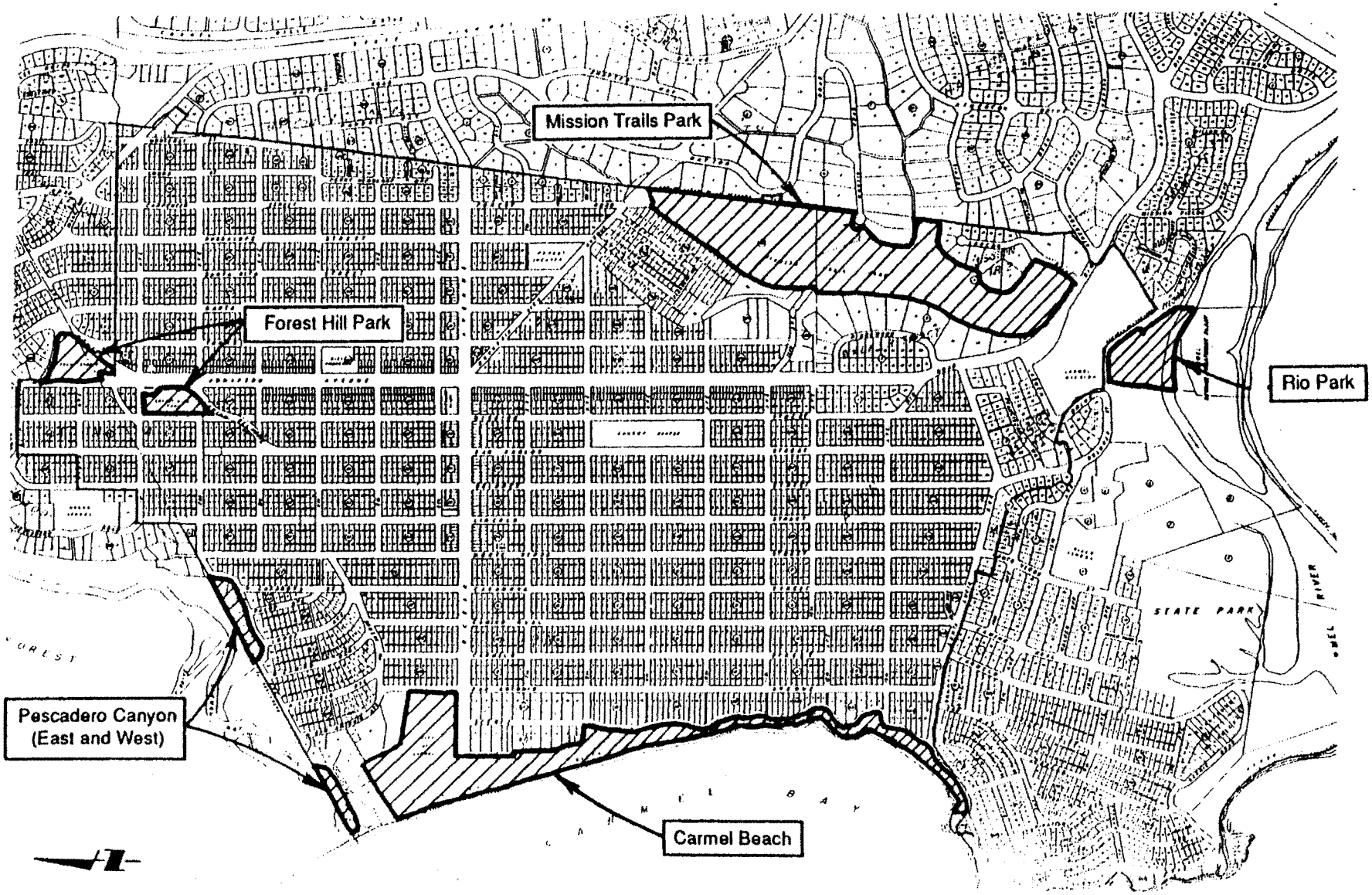
POLICIES GOVERNING ENVIRONMENTALLY SENSITIVE HABITAT AREAS

Several state and local policies provide guidance on appropriate activities and restrictions in designated ESHAs. Applicable policies are identified in the California Coastal Act (Public Resources Code, Sections 30240[a] and [b]); the City of Carmel-by-the-Sea Local Coastal Program Land Use Plan (1981); the City of Carmel-by-the-Sea General Plan (1990); and the Guide to the Management of Carmel's Forests, Parks and Beaches (Taylor and D'Ambrosio 1981). Each of these state and local policies that pertain to the ESHA study are discussed briefly below.

California Coastal Act

The California Coastal Act (Public Resources Code, Section 30107.5) defines ESHAs as:

> areas in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activities and developments. In addition, some



Jones & Stokes Associates, Inc.

Figure 1.
Location of Environmentally Sensitive Habitat Area Study Sites, Carmel-by-the-Sea

of these sensitive habitats require further protection from disturbance, and this subset of sensitive habitats is called environmentally sensitive habitat areas.

The following sections from the California Coastal Act pertain to the preservation and enhancement of natural habitat areas in the coastal zone.

Section 30231

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30240

(a) ESHA[s] shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas; and

(b) Development in areas adjacent to ESHAs and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.

Public Resources Code, Section 30240(a) states that only uses dependent on ESHA resources will be allowed in these areas. *Dependent uses* is applied and interpreted in different ways by the California Coastal Commission (Otter pers. comm.). Examples of activities that may be considered compatible with ESHAs include habitat restoration and enhancement (relating to indigenous plants), interpretive trails, and informative signs (Otter pers. comm.). Most resource management recommendations that are provided in this report were discussed with individuals at the California Coastal Commission and would most likely be considered consistent with Public Resources Code, Sections 30231 and 30240(a) and (b).

Applicable City Policies

The City has identified the following policies and resource management plans as part of its local coastal plan to protect environmentally sensitive habitats (City of Carmel-by-the-Sea Community Planning and Building Department 1981):

1. **Public Park Uses and Zoning.** Environmentally sensitive habitats that occur in city parks are zoned as P-1 and P-2. In passive-use parks (P-1), the focus is on maintaining the park in its natural state, allowing only maintenance activities or improvements that would enhance or enable better enjoyment of this natural state. In addition to including all uses permitted in parks zoned as P-1, recreational parks (P-2) allow facilities and structures that are devoted to public recreation.

2. **Structures on Carmel Beach.** It is unlawful to construct, erect, or place any building, structure, or improvement of any kind on, over, or under any part of Carmel beachlands, except those determined by the City Council to be essential for public health, safety or welfare.

3. **Developable Lots.** Development of a lot with a slope greater than 30 degrees requires a use permit. The City reviews each submittal for compliance. This requirement applies to the environmentally sensitive habitat at Second Avenue that is zoned R-1.

4. **The Guide to the Management of Carmel's Forests, Parks and Beaches.** The City adopted a policy of continuously inventory the supply, mix, and condition of all trees in the City to preserve the quality and nature of its urban forest (Taylor and D'Ambrosio 1981). This plan includes environmentally sensitive habitats within the City's jurisdiction.

   The net effect of these policies is to:

   - prohibit alteration of the natural land forms;
   - preserve the existing plant and marine life;
   - encourage passive recreation within the P-1;
   - prohibit structures or intensive development in the P-1 zone;
   - limit structures to recreation facilities in the P-2 zone;
   - replace trees that must be removed on public and private property[1]; and

[1]Under municipal ordinances, the City regulates the cutting of trees on certain private property. This applies to trees on vacant lots and trees on lots with an existing building that are proposed for expansion during remodeling or rebuilding. City regulations state "it shall be unlawful to cut down or otherwise destroy, or authorize the cutting down or destruction of any living tree of an average diameter greater than two inches, or a circumference greater than six and one-fourth inches, measured at a point 4.5 feet above the ground level." As a condition of the tree removal permit, the Forestry Commission may require replacement trees of a specific species and size. Other measures that apply to the protection of trees not permitted for removal on private property, including Monterey pine, are outlined under municipal ordinances. Several measures are presented to avoid and minimize impacts on trees during construction activities.

- establish "mini-parks", greenbelts, improvements, and sprinkling systems to further enhance the urban forest of the City.

5. **Acquisition of Private Lots.** The City's general plan supports acquiring available lots along Pescadero Canyon.

In addition to the policies described above, the City has adopted the following policies to further protect environmentally sensitive habitats:

- The City should prohibit the conversion of any portion of the Flanders/Doolittle property in Mission Trails Park and maintain the property as a passive recreation area.

- The City requires that a use permit be obtained before developable lots fronting on public open space and on Pescadero Canyon may be developed. Use permit standards are to be developed to minimize grading and other alteration of natural landforms, minimize coverage, maximize the retention of important public views, and maximize setbacks.

The City will continue to coordinate with agencies having jurisdiction over the Pescadero Canyon wetlands, the Carmel River wetlands, and the Carmel Bay Ecological Reserve, as recommended in the City's General Plan.

Section 2. Criteria Used to Identify Environmentally Sensitive Habitat Areas

For the purpose of this study, it was necessary to determine whether certain habitats would be subject to the California Coastal Act, Sections 30231 and 30240. ESHA criteria were identified based on a review of the ESHA definition provided in the California Coastal Act, Section 30107.5; contacts with the California Coastal Commission (Loomis and Otter pers. comms.) and California Department of Fish and Game (DFG) (Hillyard pers. comm.); a review of selected local coastal programs completed for sites in Monterey and Santa Cruz Counties; a review of state and federal regulations and policies that protect sensitive biological resources; and a consideration of local and regional sensitivity or uniqueness of biological resources found in the city.

Based on the sources described above, sites are considered environmentally sensitive in this ESHA study if they support one or more of the following:

- special-status species and habitats important to those species,
- wetlands,
- riparian habitats,
- dune habitats,
- coastal terrace prairie, or
- Monterey pine forest on uncommon geomorphic surfaces and soils in the Monterey region.

Definitions of these resources are provided in the following sections.

SPECIAL-STATUS SPECIES AND HABITATS IMPORTANT TO THOSE SPECIES

For the purpose of this study, the category "special-status species" includes plants and wildlife identified as rare, endangered, or threatened under state or federal endangered species acts. Habitats that are locally or regionally important for these species are also included in this category. After further evaluation, additional locally rare or unique species that may be considered endemic, relict,

or disjunct species may be included in this category. Other species to be considered may include plants and wildlife that are candidates for federal listing (Candidate 1 and Candidate 2) and plants that are considered rare and endangered in California (List 1B) by the CNPS.

Although the native Monterey pine is considered rare and endangered by CNPS (List 1B) and a candidate for federal listing (C2), this report focuses primarily on Monterey pine as part of a forest ecosystem rather than as an isolated species. Monterey pine located on uncommon geomorphic surfaces and associated soils are considered sensitive for the purpose of the ESHA study.

WETLANDS

Wetlands are considered environmentally sensitive habitats because they are a valuable natural resource that provide habitat for a variety of dependent plant and wildlife species. By one estimate, agricultural and urban development has resulted in the loss of nearly 90% of California's wetlands (Dahl 1990).

Under the U.S. Army Corps of Engineers' (Corps') definition, wetlands are a type of waters of the United States that support hydrophytic vegetation, hydric soils, and wetland hydrology. Plant communities that lack one of these criteria are referred to as "other waters of the United States" (e.g., unvegetated drainages, lakes, and rivers). The Corps regulates the discharge of dredged or fill material into waters of the United States, including wetlands, under Section 404 of the Clean Water Act. Development projects that would result in the discharge of dredged or fill material into waters of the United States, including wetlands, require a Section 404 permit from the Corps. The federal government supports a policy of minimizing "the destruction, loss, or degradation of wetlands" (Executive Order 11990, May 24, 1977).

The California Coastal Commission defines *wetlands* as lands in the coastal zone that may be covered periodically or permanently with shallow water, including saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens (Public Resources Code, Section 30121).

RIPARIAN HABITATS

Riparian habitats are considered environmentally sensitive because they provide essential habitat for a variety of common and special-status wildlife in California and the Monterey region. Additionally, riparian habitats provide important ecological functions, such as streambank stabilization and flood control. DFG has a policy of "no net loss of riparian acreage or value" and regulates riparian habitats under Sections 1600-1607 of the California Fish and Game Code.

DUNE HABITATS

Vegetated and unvegetated dune habitats are considered environmentally sensitive because they are restricted in distribution compared to their historical extent along the California coast. In addition to habitat loss from agriculture and development activities, the introduction of non-native species (e.g., African ice plant and European beach grass) for dune stabilization has changed the ecological functions in natural dune systems and displaced native dune vegetation. Dune habitats in the Monterey Bay region also provide habitat for several special-status plant and wildlife species, including Tidestrom's lupine and black legless lizard, species found in the dune scrub habitat on Carmel Beach.

COASTAL TERRACE PRAIRIE

Similar to dune habitats, coastal terrace prairie is considered a sensitive natural community because substantial amounts of the habitat have been severely altered or lost as a result of agricultural and coastal development. Coastal terrace prairie community typically supports a diverse and unique assemblage of plant species, including some special-status species (e.g., Hickman's onion at Mission Trails Park).

MONTEREY PINE FOREST

Monterey pine forest is a habitat that has been the topic of many ecological studies and the focus of recent conservation efforts. Most recently, the primary issues surrounding Monterey pine forest are historical and potential future losses from development projects, lack of natural pine regeneration because of fire suppression activities, introduction and spread of diseases such as pitch canker, and genetic contamination from nursery stock.

A recent ecological study was commissioned by DFG and The Nature Conservancy to gain a better understanding of and acquire more information on:

- Monterey pine as a species,
- Monterey pine forest as a community,
- the extent and character of the contemporary Monterey pine forest,
- the extent and character of historical Monterey pine forest, and
- the nature and extent of alterations to the native Monterey pine forest (Jones & Stokes Associates 1994).

This ecological study presented new findings on the relationships between Monterey pine forest and geomorphic surfaces and associated soil types on the Monterey peninsula. Variations in Monterey pine forest on the different geomorphic surfaces were characterized and divided into ecological subtypes (Jones & Stokes Associates 1994). For a detailed discussion of these ecological subtypes, refer to the Monterey Ecological Staircase: The Nature of Different Geomorphic Surfaces of the Monterey Peninsula with an Emphasis on Monterey Pine (Jones & Stokes Associates 1994).

In summary, the ecological study determined the following:

- Monterey pine forest cannot be treated as a single entity but should be divided into ecological subtypes.
- Subtle but clear differences exist between Monterey pine forest subtypes on different geomorphic surfaces and soils.
- Historical losses of Monterey pine forest have not been distributed evenly across the various forest subtypes.
- Preserving representative stands of Monterey pine forest on each geomorphic surface would best achieve the goal of protecting the full range and diversity of Monterey pine forest.

For the purpose of this ESHA study, Monterey pine forest types on uncommon geomorphic surfaces and soils (that have not been substantially altered and have potential for restoration) in the Monterey region are considered environmentally sensitive. Monterey pine forests on the following geomorphic surfaces and soils are considered environmentally sensitive habitats because large amounts of these forest subtypes have been removed and little natural forest remains on these substrates: marine terraces 2, 3, 4, 5, and 6; middle-aged dunes; and oldest dunes (Jones & Stokes Associates 1994). Table 1 provides an estimate of remaining acres of undeveloped Monterey pine forest on each geomorphic surface. Also provided in this table is the percentage of Monterey pine forest on each geomorphic surface remaining compared to historical extent.

By one estimation, only 51% (approximately 9,405 acres) of the historical extent of undeveloped Monterey pine forest remains on the Monterey Peninsula (Jones & Stokes Associates 1994). Approximately 20 acres of indigenous Monterey pine forest occur on private and public lands in the city, which is less than 1% of the remaining undisturbed Monterey pine forest on the Monterey Peninsula.

The conservation and preservation of Monterey pine forest will undoubtedly be an evolving issue over the next few years. For this reason, the status of Monterey pine forest as an environmentally sensitive habitat will need to be reevaluated as new ecological information becomes available.

Table 1. Estimate of Extent of Monterey Pine Forest in Undeveloped Areas by Geomorphic Surface

Geomorphic Surface	Areas (acres)[a]	Percentage of Historical Extent
Marine terrace 1	43	--
Marine terrace 2	170	16
Marine terrace 3	161	12
Marine terrace 4	318[b]	20
Marine terrace 5	457	37
Marine terrace 6	82	31
Undetermined marine terraces	219	52
Youngest dunes	15	--
Middle-aged dunes	123	15
Oldest dunes	229	20
Inland shale	4,722	79
Inland granite	1,194	49
Other surfaces	1,430	92
Undetermined surfaces	242	43
Total extent of undeveloped forest	9,405	51

[a] Estimates based on the overlap between areas mapped by Jones & Stokes Associates as undeveloped Monterey pine forest (forest with natural understory) and geomorphic surfaces as mapped by Dupre (1990).

[b] Of this total, 80 acres are on granite-derived terraces and 238 on shale-derived terraces.

Section 3. Study Methods

GOALS AND OBJECTIVES

The City is conducting this ESHA study to:

- evaluate the resource values of each site relative to the ESHA criteria (identified in Section 2) and identify potential ESHA boundaries,
- assess whether biological resources can be sustained without management, and
- identify resource management requirements or mitigation measures needed for resource protection or enhancement.

To accomplish these goals, the following field survey objectives were identified:

- map habitats (vegetation types), landforms, and soil types for each site;
- conduct special-status plant surveys at each of the five sites during spring 1995;
- conduct special-status wildlife surveys at Pescadero Canyon East and West, Mission Trails Park, and wildlife habitat assessments at Forest Hill Park and Carmel Beach;
- evaluate current use, resource management practices, and resource management problems (e.g., erosion, introduction of invasive horticultural plant species, and habitat degradation) for each site;
- evaluate the potential to widen the zone of riparian vegetation along the Carmel River at Rio Park;
- evaluate the Martin Road parcel (Unit 1) and the Flanders Mansion/Arboretum parcel (Unit 2) at Mission Trails Park to determine whether they are appropriately designated as ESHAs;
- identify opportunities for mitigating impacts from single-family home development adjacent to Mission Trails Park;

- perform a visual survey to evaluate the effects of current use on Carmel Beach, and recommend further studies if the visual survey identified special resource issues or special-status species; and

- determine whether any invasive horticultural plant species are present in the dunes area north of Ocean Avenue.

STUDY METHODS

Study methods included a prefield survey investigation to review existing information, followed by field surveys.

Prefield Survey Investigation

Jones & Stokes Associates reviewed existing information to identify potential resource issues and develop a field strategy. The following sources of information were reviewed during the prefield survey investigation:

- Soil Survey of Monterey County (Cook 1978),

- geologic mapping of the study area (Dupre 1990),

- infrared aerial photographs (scale of 1 inch = 1,000 feet),

- DFG's Natural Diversity Data Base 1994 and 1995,

- existing and available local coastal program land use plans for Santa Cruz and Monterey Counties,

- existing and available biological studies and resource evaluations conducted for the study sites (Bainbridge, Behrens, Moore 1974; Cowan 1991; The Habitat Restoration Group 1990; Yadon 1994; Bury 1985; and Roseth pers. comm.),

- City documents and maps, and

- Jones & Stokes Associates in-house file data.

Before field surveys were conducted, preliminary habitat and soils maps were completed for each site (excluding Carmel Beach).

Field Surveys

A Jones & Stokes Associates plant ecologist and soil scientist conducted field surveys on November 29 and 30 and December 1, 1994, to gather baseline vegetation and soils information on each of the study sites. Special-status plant surveys were conducted on April 24 and May 4-6, 1995. Special-status wildlife surveys and habitat assessments were conducted on May 11 and 19, 1995. Field methods used to gather information on vegetation, soils, and special-status species are described below.

Vegetation

During the November and December 1994 field surveys, each of the study sites was walked to identify dominant plant species, map and characterize habitat types, and identify resource management issues. The preliminary habitat maps prepared during the prefield survey investigation were refined further in the field and transferred onto base maps provided by the City.

Soils

Geologic formations were identified based on a 1990 geologic study of the Monterey area by William R. Dupre (1990). Field verification of geologic formations resulted in minor changes to mapping by Dupre. The geologic formation mapping was used to develop the Monterey pine forest soil-vegetation associations that correlate with specific geomorphic surfaces. The specific geomorphic surfaces were detailed in an earlier report, The Monterey Ecological Staircase (Jones & Stokes Associates 1994), which is the basis for the geologic and soil classification and associated Monterey pine forest types used in this report.

Site-specific soil type identification was performed by using a shovel and auger or by cut bank or other exposed soil profiles where available. Soil morphologic description followed National Cooperative Soil Survey methods as detailed in the Soil Survey Manual. Soil series were identified by comparing observed soil profiles with standard profile descriptions contained in the Soil Survey of Monterey County (Cook 1978). Because of the greater level of detail of this study, some areas varied from the existing soil maps.

Areas were surveyed for soil erosion or other apparent declines in soil quality that would affect site stability or productivity for future vegetation management and survival. Problem areas were noted. Recommendations for corrective measures are discussed in Section 5, "Study Results and Resource Management Recommendations".

Special-Status Species

Special-Status Plant Survey. Special-status plant surveys involved identifying species that could occur on the five study sites, followed by site-specific field surveys.

During a prefield investigation, a list of special-status plants that could occur on the study sites was compiled. Sources reviewed to develop this target list of species included DFG's NDDB (1994 and 1995), CNPS's Inventory of Rare and Endangered Vascular Plants of California (Skinner and Pavlik 1994), and existing and available environmental studies conducted in the Monterey Bay region. Based on species habitat requirements and distribution information, 43 special-status plants were identified during the prefield survey investigation as potentially occurring in the Monterey Bay region (Table 2).

Botanical surveys for early blooming species listed in Table 2 were conducted during April and May 1995. Each of the study sites was walked and a list of plants encountered during the survey was compiled. All plants encountered were identified to the level necessary to determine if they were special-status species. Lists of plants identified during the field surveys on each of the sites is on file at Jones & Stokes Associates.

Each of the sites was also evaluated for its potential to support later-blooming special-status plants. Special-status plants that would not have been identifiable during the April and early May field surveys include one-awned spineflower, robust spineflower, seaside bird's beak, beach layia, curly-leaved monardella, and Gairdner's yampah (Table 2). A habitat assessment was conducted for these species on each of the study sites.

Special-Status Wildlife Survey. Special-status wildlife surveys involved identifying species that could potentially occur at the five study sites, followed by site-specific field surveys.

During a prefield investigation, a list of special-status wildlife species that could occur on the study sites was developed. Sources reviewed to compile this list of target species included DFG's NDDB (1994 and 1995) and available environmental studies conducted in the Monterey Bay region. Based on species habitat requirements and distribution information, 20 special-status wildlife species and four species of special interest were identified during the prefield investigation as potentially occurring on the study sites. After field surveys were completed, several species were removed from the list because no suitable habitat was observed at the study areas. Table 3 identifies special-status wildlife species remaining on this revised list.

Wildlife surveys were conducted at Pescadero Canyon, Carmel Beach, and Mission Trail Park on May 11, 1995, and at Forest Hill Park on May 18, 1995. No wildlife field surveys were conducted at Rio Park.

Each study site was surveyed on foot, and all wildlife species observed or evidence of occurrence of a particular species (e.g., tracks, scat, nests) was recorded. Downed wood, rocks, and other suitable items were lifted to search for special-status reptiles and amphibians. Factors affecting

Table 2. Special-Status Plant Species Identified as Having the Potential to Occur at the Five ESHA Study Sites, Carmel-by-the Sea

Scientific and Common Name	Listing Status* Federal/State/CNPS	Habitat	Period Identifiable	Distribution	Occurrence in the ESHA Study Sites
Allium hickmanii Hickman's onion	C1/--/1B	Closed-cone conifer forest, chaparral, and grasslands	April	Monterey Peninsula and near Jolon, Monterey County	One population located on coastal terrace prairie at Mission Trails Park
Arctostaphylos montereyensis Toro manzanita	C2/--/1B	Chaparral, oak woodland, and coastal scrub	Year round	Monterey and San Luis Obispo Counties	
Arctostaphylos pajaroensis Pajaro manzanita	C2/--/1B	Sandy hills in chaparral	Year round	Monterey County	
Arctostaphylos hooveri Hoover's manzanita	--/--/4	Chaparral	Year round	Monterey and San Luis Obispo Counties	
Arctostaphylos edmunsii var. *edmundsii* Little Sur manzanita	C2/--/1B	Coastal bluff scrub and chaparral	Year round	Monterey County	
Arctostaphylos pumila (*A. uva-ursi* var. *pumila*) Sandmat manzanita	C2/--/1B	Closed-cone conifer forest, coastal scrub, and coastal dunes	Year round	About Monterey Bay	
Arctostaphylos edmundsii var. *parvifolia* Hanging gardens manzanita	C2/--/1B	Chaparral	Year round	Monterey County	
Arctostaphylos hookeri ssp. *hookeri* Hooker's manzanita	--/--/1B	Chaparral, closed-cone coniferous forest, and coastal scrub	Year round	Near the coast in Monterey and Santa Cruz Counties	Individual shrubs located at Forest Hill Park and Mission Trails Park
Astragalus tener var. *titi* Coastal dunes milk vetch	C1/E/1B	Coastal dunes	May-May	Monterey Bay and San Diego Bay	
Calystegia collina ssp. *venusta* South Coast Range morning-glory	C2/--/4	Unknown	May-Jun	Monterey to Fresno Counties and in Santa Barbara County	
Ceanothus cuneatus var. *rigidus* Monterey ceanothus	C2/--/4	Widespread in maritime chaparral; closed-cone conifer forest on sandy hills and flats	Year round	Monterey Peninsula	
Centrostegia insignis Indian Valley spineflower	--/--/4	Cismontane woodland	Feb-Sept	Monterey and Santa Cruz Counties	
Chorizanthe douglasii Douglas' spineflower	--/--/4	Cismontane woodland and lower coniferous forest on sandy or gravelly slopes	Apr-Jun	San Benito and Monterey Counties to San Luis Obispo County below 500 feet	

Table 2. Continued

Scientific and Common Name	Listing Status[a] Federal/State/CNPS	Habitat	Period Identifiable	Distribution	Occurrence in the ESHA Study Sites
Chorizanthe rectispina One-awned spineflower	C2/–/1B	Chaparral, oak woodland, and grassland	Jun-Aug	Coast Ranges of Monterey and San Luis Obispo Counties	
Chorizanthe robusta var. *robusta* Robust spineflower	PE/–/1B	Coastal dunes and scrub on dry, sandy places below 1,000 feet	May-Sept	Coastal Santa Cruz and Monterey Counties	
Chorizanthe pungens var. *pungens* Monterey spineflower	PE/–/1B	Chaparral, oak woodland, and grassland	Apr-Jun	Monterey Peninsula and coastal north Monterey County	
Clarkia lewisii Lewis' clarkia	–/–4	Coastal scrub	May	Monterey County	
Collinsia franciscana San Francisco collinsia	–/–/4	Dry, stony and grassy slopes in coastal scrub and closed-cone coniferous forest	Apr-May	San Francisco County to San Mateo County	
Cordylanthus rigidus var. *littoralis* Seaside bird's-beak	C1/E/1B	Coastal scrub, closed-cone conifer fist, oak woodland, and chaparral on dry, sandy soils below 3,000 feet	Aug-Sept	Coast Ranges of Monterey and Santa Barbara Counties	
Cryptantha rattanii Rattan's cryptantha	–/–/4	Grassland and cismontane woodland	Mar-Jun	Watershed of Salinas and Carmel Rivers, Monterey and west Merced Counties	
Delphinium hutchinsoniae Hutchinson's larkspur	C2/–/1B	Coastal scrub, coastal prairie, and mixed evergreen forest	Unknown	Monterey County	
Delphinium umbraculorum Umbrella larkspur	–/–/4	Cismontane woodland; usually shaded places	Year round	Monterey and San Luis Obispo Counties	
Eriastrum virgatum Virgate eriastrum	–/–/4	Coastal dunes	April-June	Monterey, San Benito, Ventura, and Los Angeles Counties	
Ericameria fasiculata Eastwood's ericameria	C2/–/1B	Closed-cone conifer forest, chaparral, and coastal scrub	Year round	Monterey and Carmel Bays	
Eriogonum butterworthianum Butterworth's buckwheat	C2/R/1B	Chaparral	Unknown	Monterey County	
Erysimum menziesii Menzies' wallfower	E/E/1B	Coastal dunes	Mar-Jun	Monterey County and from Fort Braff to north of Humboldt Bay	
Erysimum ammophilum Coast wallflower	C2/–/1B	Coastal dunes	Feb-May	Coastal areas of Montery and Santa Cruz County, and Santa Rosa Island	
Fritillaria liliacea Fragrant fritillary	C2/–/1B	Coastal scrub and grassland; often on ultramafic soils	Feb-Apr	Sonoma County to Monterey County	

Table 2. Continued

Scientific and Common Name	Listing Status* Federal/State/CNPS	Habitat	Period Identifiable	Distribution	Occurrence in the ESHA Study Sites
Gilia tenuiflora ssp. *arenaria* Sand gilia	E/T/1B	Coastal dunes and scrub	Apr-May	About Monterey Bay	
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	C2/--/1B	Sandy and gravelly places in coastal scrub and closed-cone coniferous forest	Apr-Sept	Along the coast from Sonoma County to Santa Barbara County	
Layia carnosa Beach layia	E/E/1B	Widely scattered stations on coastal sand dunes	May-Jun	Humboldt County to San Francisco County and historically to Point Concepcion	
Layia jonesii Jones' layia	C2/--/1B	Chaparral and grassland	Mar-May	Monterey and San Luis Obispo Counties	
Lomatium parvifolium Small-leaved lomatium	--/--/4	Closed-cone conifer forest	Mar-Jun	Monterey, Santa Cruz, and San Luis Obispo Counties	
Lupinus tidestromii var. *tidestromii* Tidestrom's lupine	E/E/1B	Coastal dunes	May-Jun	Monterey Peninsula	One population at Carmel Beach
Malacothrix saxatilis var. *arachnoidea* Carmel Valley cliff-aster	C2/--/1B	Rocky open banks of chaparral and mixed evergreen forest	May-Sept	Monterey and Santa Barbara Counties	
Monardella undulata var. *undulata* Curly-leaved monardella	--/--/4	Chaparral and coastal dunes and scrub below 500 feet	May-Aug	Near the coast from Marin County to Santa Barbara County	
Perideridia pringlei Adobe yampah	C3c/--/4	Canyons and open slopes of chaparral, coastal scrub, and cismontane	Apr-Jun	North Los Angeles County to Monterey County	
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	C2/--/4	Chaparral and broadleafed upland forest, typically on wet, heavy soils	Jun-Jul	San Diego County north to Sonoma County	
Piperia yadonii Yadon's piperia	C1/--/1B	Chaparral and coastal scrub	May-Sept	Coastal Montery County	
Plagiobothrys uncinatus Hooked popcornflower	C2/--/1B	Chaparral and possibly grassland and cismontane woodland	Apr-May	Monterey and San Benito Counties	
Potentilla hickmanii Hickman's cinquefoil	C1/E/1B	Scrub, closed-cond coniferous forest and vernally mesic sites	April-August	Known from only two occurrences on the Monterey Peninsula	
Sidalcea hickmanii spp. *hickmanii* Hickman's checkerbloom	C3c/--/1B	Hillsides in chaparral	May-June	Monterey County	
Trifolium polydon Pacific Grove clover	C1/R/1B	Closed-cone coniferous forst, coastal prairie, meadow	May-June	Known only from three occurrences on the Monterey Peninsula	

Table 2. Continued

* Status definitions:

– = no listing available.

Federal

E = listed as endangered under the federal Endangered Species Act.

PE = proposed for federal listing as endangered under the federal Endangered Species Act.

C1 = Category 1 candidate for federal listing. Category 1 includes species for which USFWS has on file enough substantial information on biological vulnerability and threat to support proposals to list them.

C2 = Category 2 candidate for federal listing.Category 2 includes species for which USFWS has some biological information indicating that listing may be appropriate but for which further biological research and field study are usually needed to clarify the most appropriate status.Category 2 species are not necessarily less rare, threatened, or endangered than Category 1 species or listed species; the distinction relates to the amount of data available and is therefore administrative, not biological.

C3 = no longer a candidate for federal listing.Category 3 species have been dropped from the candidate list because they are extinct (C3a), taxonomically invalid or do not meet the USFWS definition of a "species" (C3b), or too widespread or not threatened at this time (C3c).

State

E = listed as endangered under the California Endangered Species Act.
R = listed as rare under the California Endangered Species Act. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.
T = listed as threatened under the California Endangered Species Act.

California Native Plant Society

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
4 = List 4 species: plants of limited distribution that may be considered rare under CEQA.

the suitability of each site for various wildlife species were also recorded, and a field assessment was made of the overall habitat suitability for special-status species in Table 3.

Table 3. Special-Status Wildlife Species Identified as Having the Potential to Occur on the Five ESHA Study Sites, City of Carmel-by-the Sea

Common and Scientific Name	Legal Status* State/Federal	Habitat	Distribution in California	Known or Potential Occurrence on the Five ESHA Study Sites
Monterey ornate shrew *Sorex ornatus salarius*	--/C2	Found in a variety of riparian, woodland, and upland communities where there is thick duff or downed logs	Restricted to the Monterey Bay region; historical occurrences at the mouth of the Salinas River and Moss Landing in Monterey County	Low potential for occurrence at all sites except for City of Carmel Beach
Monterey dusky-footed woodrat *Neotoma fuscipes luciana*	--/C2	Uses habitats with moderate to dense cover and abundant dead wood for nest construction; maritime chaparral and coastal live oak woodland at Fort Ord	Restricted to Monterey County and northern San Luis Obispo County	Observed nests in the Monterey pine forest at Mission Trails Park; high potential for occurrence; no potential for occurrence at Carmel Beach; very low potential for occurrence at remaining three sites
American badger *Taxidae taxus*	SSC/--	Uses open, grassy areas with scattered shrubs or trees for cover and loose soil for digging	Found throughout California except in parts of Del Norte, Humboldt, and Siskiyou Counties; widespread throughout the United States west of the Mississippi River	Not expected to occur at any site
Sharp-shinned hawk *Accipiter striatus*	SSC/--	Found in riparian forests, conifer forests, and oak woodlands	Permanent resident in the Sierra Nevada, Cascade, Klamath, and north Coast Ranges, as well as along the coast in Marin, San Francisco, San Mateo, Santa Cruz, and Monterey Counties; winters over the rest of the state except at high elevations; breeds and winters throughout North America	Low to moderate potential for foraging at Mission Trails Park, Pescadero Canyon East, and Forest Hill Park; very low potential for nesting at these sites
Cooper's hawk *Accipiter cooperi*	SSC/--	Nests in riparian forests and dense canopy oak woodlands; forages in open woodlands	Found in all parts of California except high altitudes in the Sierra Nevada; winters in the Central Valley, southeastern desert regions, and the plains east of the Cascade Range; permanent resident throughout the lower 48 states	Low to moderate potential for foraging at Mission Trails Park, Pescadero Canyon East, and Forest Hill Park; very low potential for nesting at these sites

Table 3. Continued

Peregrine falcon *Falco peregrinus anatum*	SE/FE	Nests and roosts on protected ledges on high cliffs, usually adjacent to water sources that support large bird populations	Permanent resident on the north and south Coast Ranges; winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range; occurs along both coasts of the United States and parts of Alaska, Arizona, Colorado, and the borders of Idaho	Has been recorded using riparian forest along Carmel River in the vicinity of Rio Park (The Habitat Restoration Group 1990); very low possibility of all sites being used for foraging; no nesting habitat is available
Western snowy plover *Charadrius alexandrinus nivosus*	SSC/FPT	Found along beaches above the high tide limit; also uses shores of salt ponds and alkali or brackish inland lakes	Intermittent nesting sites along the Pacific Coast from Washington to Baja California	Not expected to nest at Carmel Beach because of frequent disturbance by humans and dogs
Coast horned lizard *Phrynosoma coronatum*	SSC/--	Occurs in areas with sandy soils and moderate cover	Uses Central Valley from Tehama County south to Tulare County and Coast Ranges from Sonoma County south to San Diego County	Low potential to occur at Mission Trails Park and Carmel Beach
Yellow warbler *Dendroica petechia*	SSC/--	Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders; may also use oaks, conifers, and urban areas if they are near streamcourses	Nests throughout California except the Central Valley, the Mojave Desert region, and high altitudes in the Sierra Nevada; winters along the Colorado River and in parts of Imperial and Riverside Counties; also has small permanent populations in San Diego and Santa Barbara Counties; occurs throughout North America except in the southeast states	Potential habitat identified in the riparian forests at Mission Trails Park and Rio Park; not expected to occur at any other site
California tiger salamander *Ambystoma tigrinum californiense*	SSC/C2 (LP)	Favors open woodlands and grasslands; requires water for breeding and burrows or cracks in the soil for summer dormancy	Occurs only in California from the coastline to the Sierra Nevada crest and from Sonoma County to Santa Barbara County	Very low potential to occur at Mission Trails Park; no potential breeding habitat available at any other sites
California black legless lizard *Anniella pulchra nigra* Silvery legless lizard *Anniella pulchra pulchra*	SSC/C2	Requires moist, warm habitats with loose soil for burrowing and prostrate plant cover; may be found on beaches, in chaparral, pine oak woodland, or riparian areas	Restricted to small populations along the coast in Monterey and northern San Luis Obispo Counties; one population in Contra Costa County	High potential to occur at Carmel Beach; has been observed in coastal scrub (Bury 1985); not expected to occur at any other sites

Table 3. Continued

Salinas harvest mouse *Reithrodontomys megalotis distichlis*	None (special-interest species)	Inhabits freshwater and saltwater marshes, annual grasslands, scrub, and oak woodlands	Known to occur near the mouth of the Salinas River	Potential habitat available at all sites except Carmel Beach
Swainson thrush *Catharus ustulatus*	None (special-interest species)	Riparian habitats and dense shrubs	In California nests in the Cascade, Klamath, north and south Coast, and Transverse Ranges, also the eastern Sierra Nevada	Potential habitat identified in the riparian forests at Mission Trails Park and Rio Park; not expected to occur on the other study sites, based on lack of suitable habitat
Common Yellowthroat *Geothlypis trichas*	None (special-interest species)	Riparian habitats and marshlands	Nests throughout California except in the Sierra Nevada and the southeastern deserts; widespread across North America	Potential habitat identified in the riparian forests at Mission Trails Park and Rio Park; not expected to occur on other study sites, based on lack of suitable habitat

* Status definitions:

-- = No designation.

FE = listed as endangered under the federal Endangered Species Act.

FPT = federally proposed for listing as threatened.

LP = listing package being reviewed by U.S. Fish and Wildlife Service.

C2 = Category 2 candidate for federal listing. Category 2 includes species for which USFWS has some biological information indicating that listing may be appropriate but for which further biological research and field study are usually needed to clarify the most appropriate status. Category 2 species are not necessarily less rare, threatened, or endangered than Category 1 species or listed species; the distinction relates to the amount of data available and is therefore administrative, not biological.

SE = listed as endangered under the California Endangered Species Act.

SSC = California Department of Fish and Game species of special concern.

Section 4. Regional and Local Setting

The City of Carmel-by-the-Sea is located in a region of California's central coast that is known for its floristic diversity and unique assemblage of plant communities. The region surrounding the city supports a wide range of climatic, topographic, and soils conditions, resulting in a high diversity of plant communities in a limited area. This diversity provides microhabitats for a wide range of endemic plants and wildlife. As an example of this diversity, 146 plant species reach their most southern and 156 plant species reach their most northern distributional limits in Monterey County, and at least 34 plant taxa are endemic to Monterey County (Howitt and Howell 1964).

Residential development occurs on almost all land in the city, except for eight parks (including the proposed Rio Park), several miniparks, and some privately owned segments of Pescadero Canyon in the City. Approximately 68 acres of public open space and approximately 10 acres of privately owned undeveloped land are under the City's jurisdiction. Most of the parks in the city are developed and provide passive and active recreation activities (City of Carmel-by-the-Sea Community Planning and Building Department 1990). Of the City's public lands, Carmel Beach, Missions Trails Park, and the proposed Rio Park support the most intact and the highest quality natural resources. Forest Hill Park also supports natural habitat but has been substantially altered from historical land-disturbing activities and continues to be maintained for public recreational uses. The privately owned section of Pescadero Canyon is a part of a larger watershed for Pescadero Creek that supports Monterey pine forest.

The landform of the Monterey Peninsula is an ascending series or staircase of six marine terraces of increasing geologic age, rising from the seashore to the inland (Jones & Stokes Associates 1994). The marine terraces reflect the changes in sea level and the general uplift of underlying bedrock in this section of the central coast in roughly the last half-million years or more. The city is built on the first five of the six marine terraces. The marine sediment of the first four terraces is covered by the sand dunes, which themselves are of increasing age with ascending elevation and distance from the ocean. The greater degree of soil development in the older dunes, such as organic matter accumulation, and clay and iron weathering and translocation to the subsoil, reflect the age of the dunes.

Drainages have cut through the dunes and marine terraces of Pescadero Canyon and Mission Trails Park to expose the underlying bedrock. Shale of marine deposition is exposed in Pescadero Creek Canyon, and granitic bedrock is exposed in the lower slopes and stream channel in Mission Trails Park.

Uplifted alluvial terraces formed by the Carmel River are found along the southern boundary of the city. The Carmel Mission is located on an alluvial terrace, just north of the Rio Park site.

Other older alluvial terraces are found on the elevated flats on the upper slopes of Mission Trails Park and outside the park boundaries.

Section 5. Study Results and Resource Management Recommendations

This section discusses the results of the ESHA study and recommends measures to manage sensitive resources at each of the study sites. Vegetation, soils, and special-status species are discussed for each study site.

PESCADERO CANYON

Overview

Pescadero Canyon, located along the northern boundary of the city, supports two undeveloped segments referred to in this study as Pescadero Canyon East and Pescadero Canyon West. These two segments are part of the larger Pescadero Canyon that extends eastward beyond the City's jurisdiction. Pescadero Canyon in general supports Monterey pine forest along its slopes and riparian and wetland habitat at the bottom of the canyon, along Pescadero Creek. Pescadero Canyon is privately owned and supports some residential development.

The Pescadero Creek watershed begins on marine terrace 6 at the top of Huckleberry Hill and extends down through a succession of geomorphic surfaces to the Pacific Ocean shoreline. The succession of marine terraces and dune-covered terraces can be observed along the steep canyon created by Pescadero Creek. Exposed in the canyon bottom and adjacent side slopes are the soils and shale bedrock of the Monterey formation.

Under natural conditions, a high rainfall runoff rate and consequent high runoff influx into Pescadero Creek would be expected on the Narlon soils of the marine terraces. The natural runoff rate and streamflows in Pescadero Creek have increased with development in the Pescadero Creek watershed.

Existing Studies and Resource Evaluations

During preparation of the Draft Results of the Environmentally Sensitive Habitat Area Study conducted for the City of Carmel-by-the-Sea, Jones & Stokes Associates reviewed a Botanical/Biological Report prepared by Bruce Cowan (1991), Environmental Landscape Consultant,

for a proposed single-family residential development on Pescadero Canyon. Since this time, a biological report prepared for a site on the north side of the Pescadero Canyon in Pebble Beach (Yadon 1994) and a visual evaluation of conditions in Pescadero Canyon (Roseth and Kelley 1993) were received and reviewed by Jones & Stokes Associates. These reports and memorandum are not discussed in detail in this report.

PESCADERO CANYON EAST

Vegetation and soils types mapped at Pescadero Canyon East are presented in Figures 2 and 3.

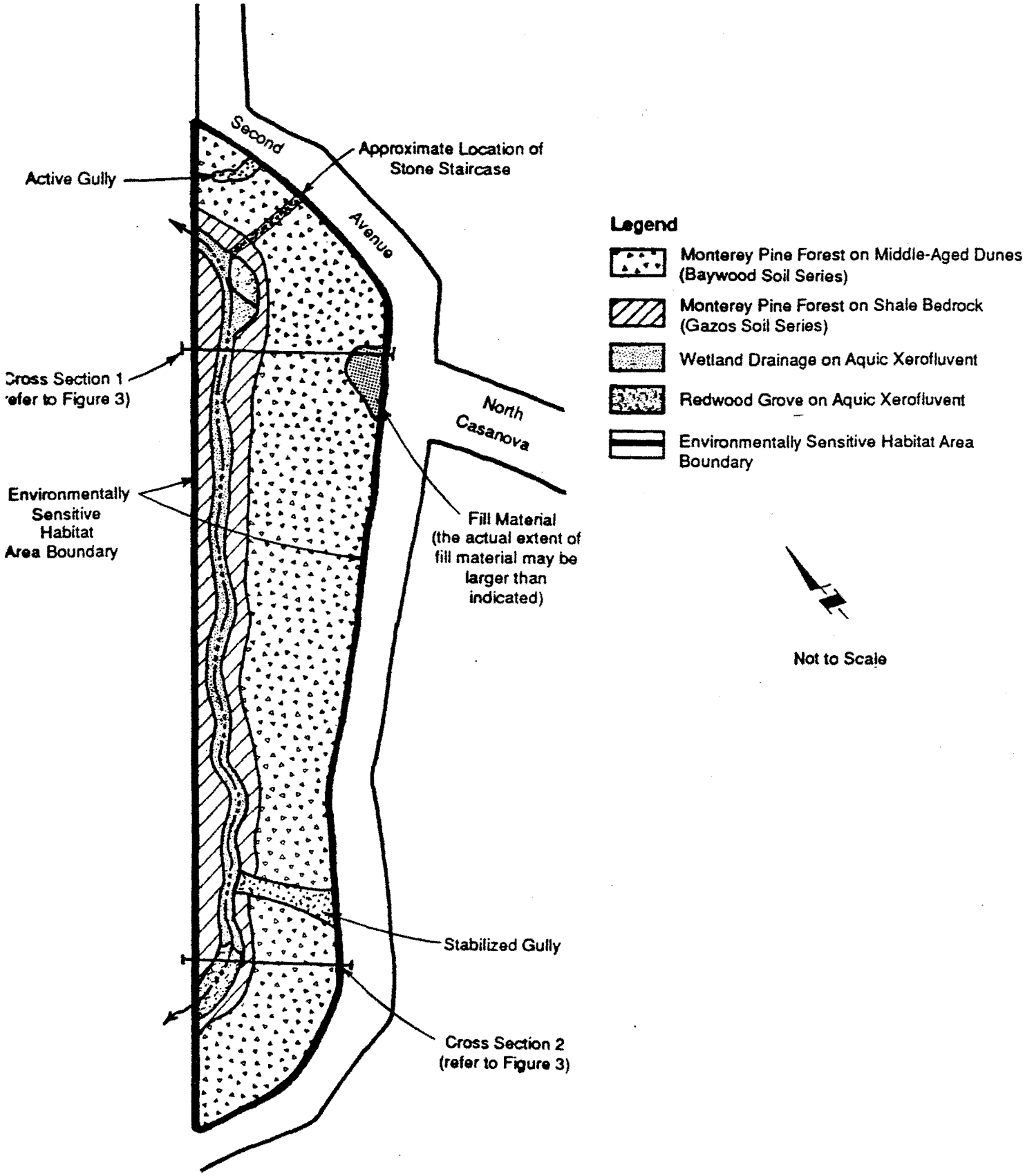
Vegetation

Pescadero Canyon East supports Monterey pine forest along the steep slopes of the canyon and wetland drainage (Pescadero Creek with wetland species along the banks) and two small redwood groves at bottom of the canyon (Figure 2).

Monterey Pine Forest

There are two Monterey pine forest subtypes in Pescadero Canyon East: Monterey pine forest on middle-aged dunes (an uncommon forest subtype, refer to Table 1) and Monterey pine forest on shale bedrock (a common forest subtype) (geomorphic surfaces are described below under "Geology and Soils"). Monterey pine forest on middle-aged dunes is the dominant subtype, occurring along the upper north-facing slope of Pescadero Canyon, along Second Avenue. Monterey pine forest on shale bedrock forms a narrow band on both sides of Pescadero Creek (Figure 2).

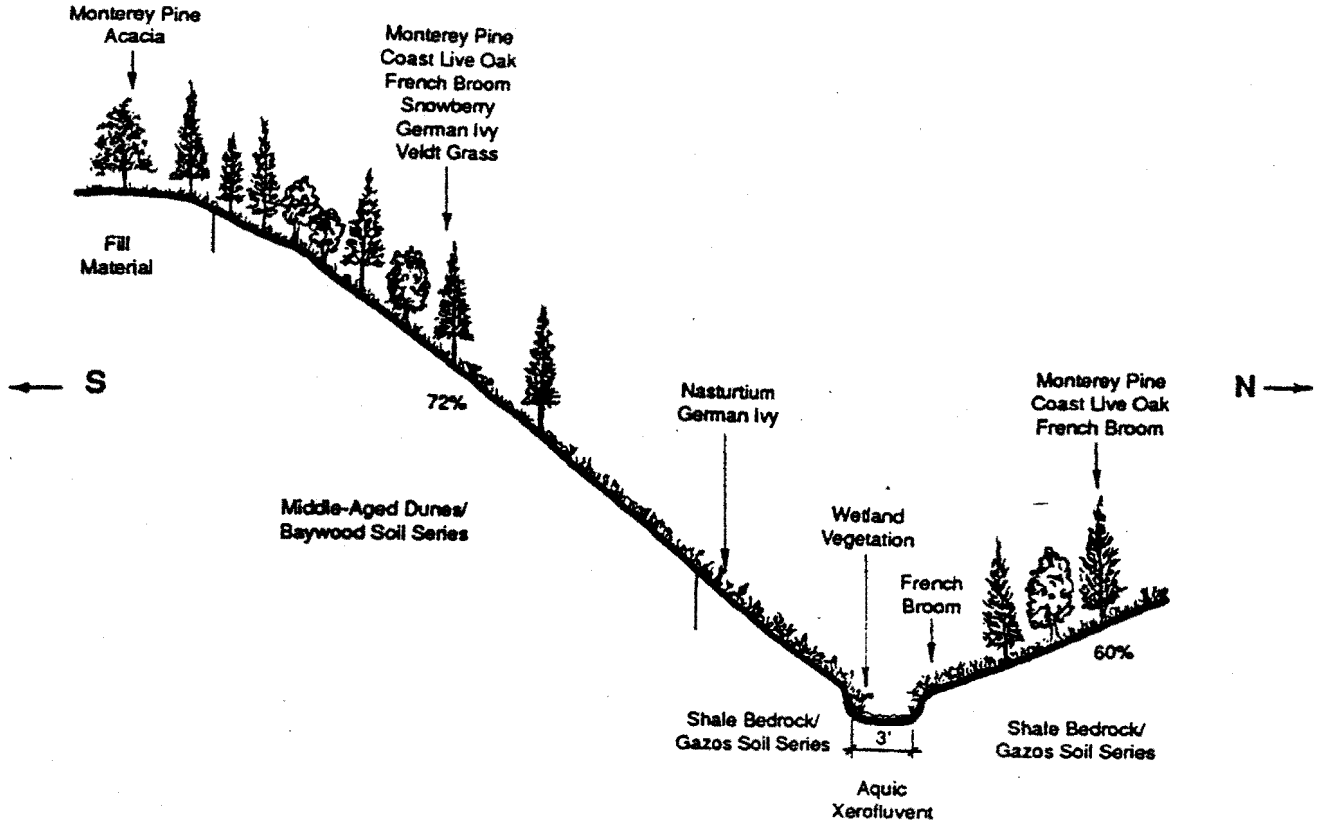
At Pescadero Canyon East, planted and native Monterey pines (*Pinus radiata*) and coast live oak (*Quercus agrifolia*) form a generally open forest canopy along the steep canyon slopes (the slopes vary from 40% to 72%). The dense forest understory is dominated by invasive horticultural species with occasional native shrub and herbaceous species. Dominant non-native horticultural species include acacia (*Acacia longifolia*) (along Second Avenue), French broom (*Genista monspessulana*), pampas grass (*Cortaderia jubata*), nasturtium (*Tropaeolum majus*), English ivy (*Hedera helix*), German ivy (*Senecio mikanoides*), periwinkle (*Vinca major*), and veldt grass (*Erharta erecta*). Native shrub and herbaceous species that occur sporadically in the Monterey pine forest include California blackberry (*Rubus ursinus*), flowering current (*Ribes sanguineum*), coffeeberry (*Rhamnus californica*), sticky monkeyflower (*Mimulus auranticus*), snowberry (*Symphoricarpus mollis*), bracken fern (*Pteridium aquilinum* var. *pubescens*), and California hedge nettle (*Stachys bullata*).



Jones & Stokes Associates, Inc.

Figure 2.
Vegetation, Soil Types, and ESHA Boundary at Pescadero Canyon East

Cross Section 1



Cross Section 2

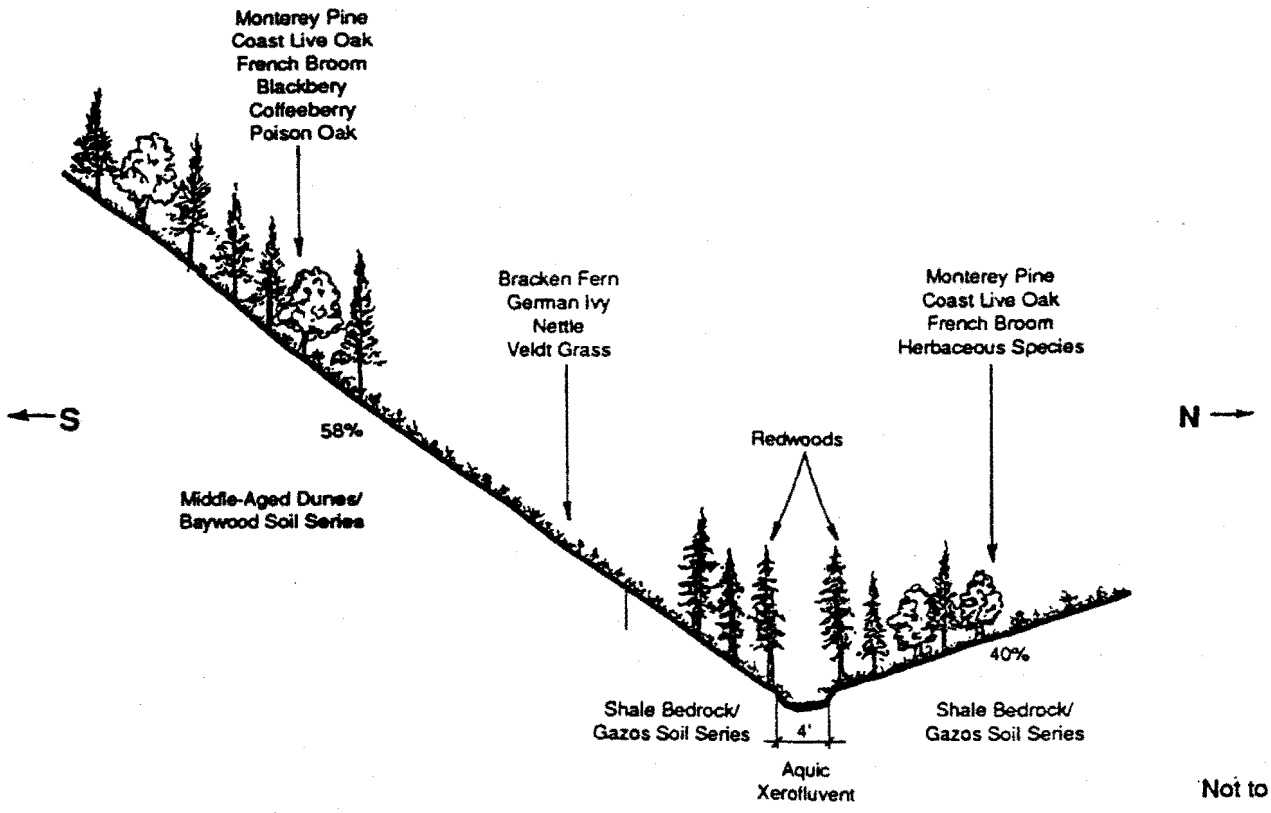


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Figure
Cross Sections 1 and 2 at
Pescadero Canyon Ea

In contrast to the south side of the canyon, the north side supports Monterey pine forest on shale bedrock (a common forest subtype). The Monterey pine forest on this south-facing slope supports a mix of Monterey pine and coast live oak with an understory composed primarily of grassland species and French broom. The north side of the canyon was not studied in detail because it is outside the City's boundary.

According to two sources, some Monterey pine trees along Second Avenue were planted from nursery stock (Roseth and Barber pers. comms.). The genetic origin of these planted Monterey pine and the extent of planting are unknown and were not determined as part of this study. The phenotypic differences between the planted and naturally occurring Monterey pine trees on the Pescadero Canyon East site were not evident during the field survey.

Most of the Monterey pines on the Pescadero Canyon East site appear mature (age unknown) and little natural regeneration (pine seedlings and saplings) was observed in the Monterey pine forest during the field visit. This lack of regeneration is due to the presence of invasive horticultural species in the forest understory, which are aggressive competitors for resources (e.g., water, light, nutrients) and due to fire suppression (fire causes cones to open, clears overstory and understory cover, and returns nutrients to the soil [Jones & Stokes Associates 1994]).

Wetland Drainage

Pescadero Canyon East is traversed by Pescadero Creek, a perennial drainage that conveys runoff from the upper reaches of Pescadero Canyon to Carmel Bay. The drainage bottom varies from 3 to 6 feet and is generally unvegetated. Wetland plants that occur sporadically along the drainage edge include panicled bulrush (*Scirpus microcarpus*), rush (*Juncus* sp.), poison hemlock (*Conium maculatum*), and horsetail (*Equisetum telmateia*). Willow (*Salix* sp.), bigleaf maple (*Acer macrophyllum*), and dogwood (*Cornus sericea* ssp. *occidentalis*) also occur in scattered locations along the drainage.

Redwood Groves

Two sites along Pescadero Creek support small groves of redwoods (Figure 2). This species is not native to the site or region, but has been introduced as a horticultural species.

Geology and Soils

Pescadero Canyon East is located in a deeply entrenched segment of the canyon that is incised into middle-aged dunes overlying shale bedrock. The steep slopes support Monterey pine forest and are stable, but show some indications of past disturbance and erosion.

A narrow and discontinuous band of recent alluvium occurs along Pescadero Creek. The soil type of the narrow alluvial band is an Aquic Xerofluvent that has no series designation in Monterey County. This soil type consists of layers of sandy loam and coarse sand with hydric mottles and imbedded debris.

The mapped soil type at the bottom of the canyon slope is the Gazos series, typically silt loam weathered from shale bedrock, with surface horizon organic matter accumulation and minimal soil horizon development. Detailed soil profile descriptions for the Gazos series and other named soil series in this report are found in the Soil Survey of Monterey County (Cook 1978). Onsite observations showed lower slope outcrops of shale bedrock with dark-colored sandy loam soil. The observed onsite high sand content of the Gazos soil is a result of colluvium accumulation from the down slope movement of dune sand from the upper canyon slope. The dune sand soil covering most of the site is the Baywood series: sand with no soil development other than some surface horizon darkening from organic matter.

An area of fill occurs on the upper slope of the site. The fill material is dune sand and does not differ from the native soil. Dune sand may be recognized by the abundance of quartz over other minerals, uniformity of particle size, and lack of weathered clay. The fill material is locally derived and from the same Baywood soil series (characteristic of middle-aged dunes) and may be distinguished only from changes in slope microtopography. The excavation and placement of fill might be expected to alter the accumulation and distribution of organic matter in the soil profile, yet little variation was observed due to the original organic matter content and the length of time the fill has been in place. Thus, there is no ecological or productivity distinction to be made between the natural and fill soils in Pescadero Canyon East. The exact boundary between natural and fill soils is indefinite and, in this case, of no ecological significance.

Special-Status Species

No special-status plant or wildlife species were located on the Pescadero Canyon East site.

Special-Status Plant Species

No special-status plant species were located during field surveys and none have been reported for the site (NDDB 1995). The overall potential for the site to support special-status plants (Table 2) was determined to be low based on the presence and extent of invasive horticultural species on the site and the lack of suitable habitat conditions.

Special-Status Wildlife Species

No special-status wildlife species were observed during the field survey at the Pescadero Canyon East site and none have been reported for the site (NDDB 1995).

As an isolated segment of Pescadero Canyon, the Pescadero East site provides minimal habitat value for most special-status wildlife species that could occur in the area. However, the value of the Pescadero Canyon East site for local wildlife habitat lies in its importance as part of a larger habitat corridor. Because the surrounding area is developed, Pescadero Canyon as a whole may provide important habitat and corridor functions for local populations of forest and riparian-adapted raptors and other common wildlife species. The contiguous forest habitat along the canyon would provide foraging and nesting opportunities for local wildlife species.

The following habitat assessments for special-status wildlife species that could occur on the Pescadero Canyon East site are based on limited field surveys:

- Soils are suitable for black and silvery legless lizards; however, the dense ground vegetation and cool heavily shaded conditions probably exclude these species.

- Pescadero Creek could be considered potential breeding habitat for special-status amphibians; however, the heavy water flows that likely result during storms would wash eggs and larvae away.

- No evidence of Monterey dusky-footed woodrats was observed and most dead and downed wood favored by the Monterey ornate shrew had fallen down the steep slopes of the canyon into Pescadero Creek.

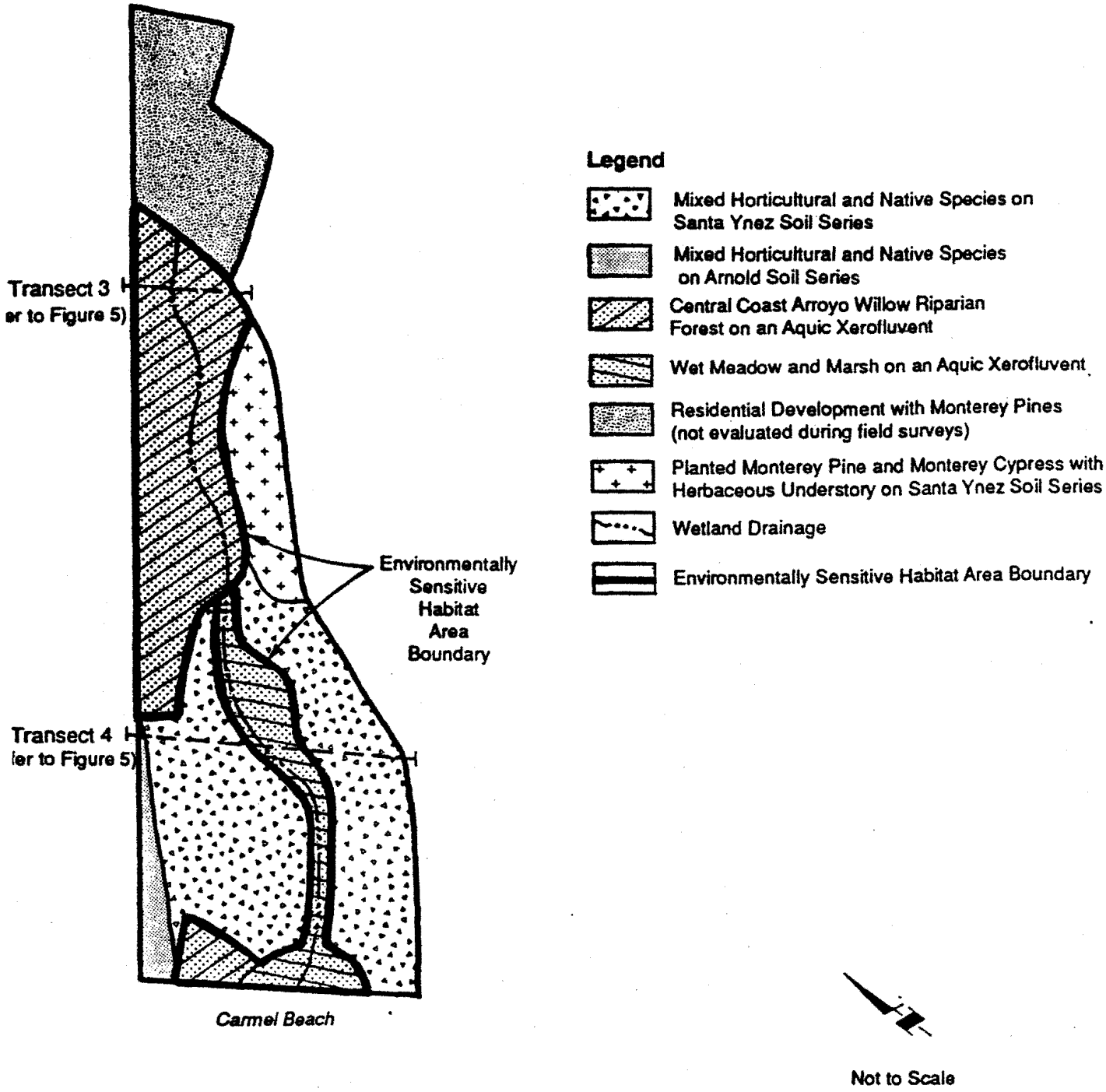
- The large Monterey pines on the study site could provide potential nesting habitat for special-status raptors that may forage in the area, such as Cooper's hawk and sharp-shinned hawk.

PESCADERO CANYON WEST

Vegetation and soils types mapped at Pescadero Canyon West are presented in Figures 4 and 5.

Vegetation

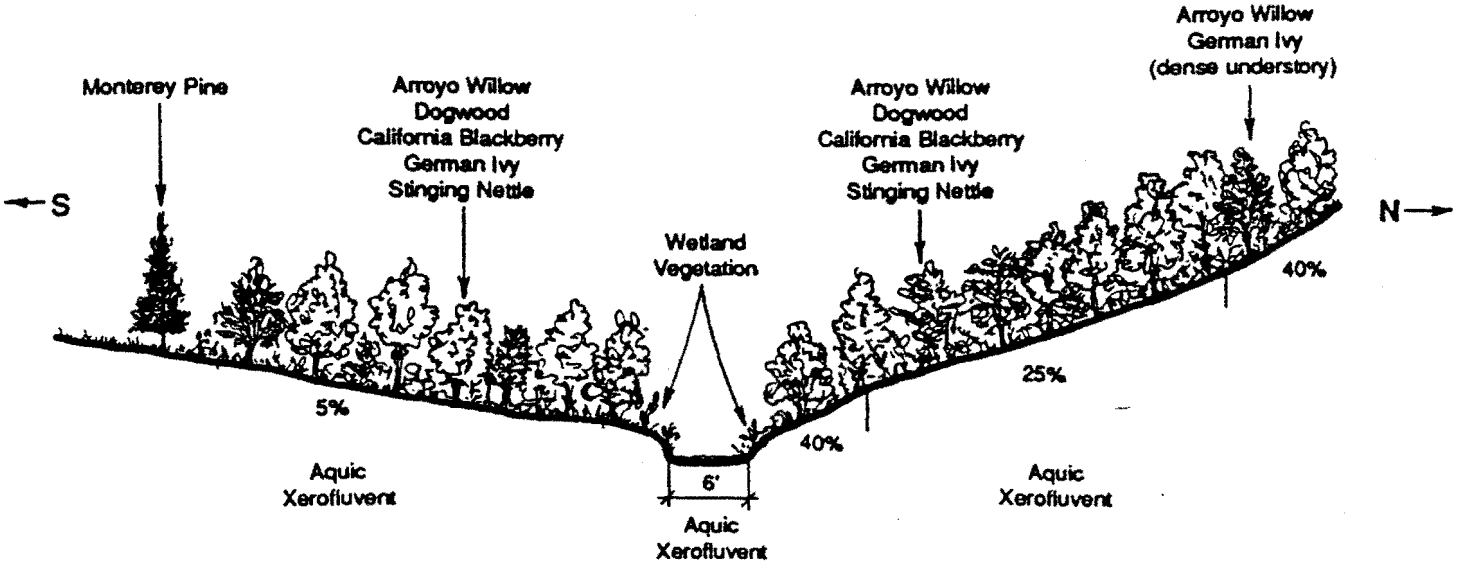
In contrast to the steep slopes of Pescadero Canyon East, Pescadero Canyon West is characterized by less-extreme slopes and supports a mosaic of wetland drainage, central coast arroyo willow riparian forest, wet meadow, and mixed horticultural species (Figure 4).



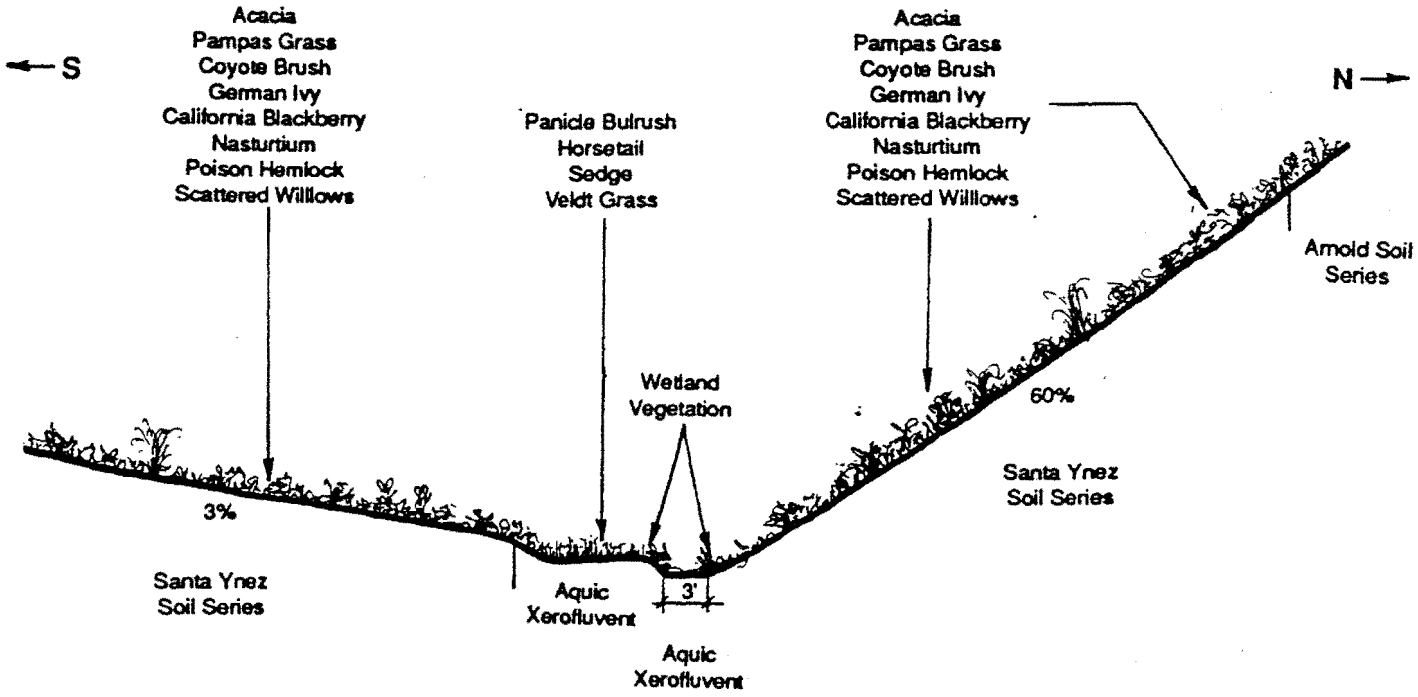
Jones & Stokes Associates, Inc.

Figure 4.
Vegetation, Soil Types, and ESHA Boundary at Pescadero Canyon West

Transect 3



Transect 4



Not to Scale

Jones & Stokes Associates, Inc.

Figure 5.
Cross Sections 3 and 4 at Pescadero Canyon West

Wetland Drainage

Pescadero Creek terminates at the western edge of the Pescadero Canyon West site. In contrast to Pescadero Canyon East, the portion of Pescadero Creek that passes through the west site supports dense riparian forest and wet meadow along its banks. Near the creek's outlet to Carmel Beach, the creek supports panicled bulrush, California bulrush (*Scirpus californicus*), and bristly ox-tongue *(Picris echioides*).

Central Coast Arroyo Willow Riparian Forest

Central coast arroyo willow riparian forest occurs as a dense multilayered forest at Pescadero Canyon West, adjacent to Pebble Beach Golf Course. The riparian forest canopy and subcanopy are dominated by arroyo willow with interspersed dogwood. The understory is characterized by a mix of native and non-native species, such as California blackberry, German ivy, bracken fern, stinging nettle (*Urtica holosericea*), horsetail, and veldt grass.

Wet Meadow

Wet meadow occurs in Pescadero Canyon West, along the southern side of the perennial drainage. The 750-square-foot wet meadow area is characterized by sedge (*Cyperus* sp.), panicled bulrush, and horsetail.

Mixed Horticultural Species

Pescadero Canyon West supports a dense mix of invasive horticultural species, including acacia, ice plant, pampas grass, German ivy, nasturtium, and veldt grass. Scattered coyote brush (*Baccharis pilularis*), willows, and California blackberry also occur in this association.

Planted Monterey Cypress and Monterey Pine

One small site along the south edge of the riparian forest supports planted Monterey cypress. The Monterey pines on this site may have also been planted; however, this has not been confirmed. The understory consists of grassland and horticultural species.

If the Monterey pine trees are native to the site, the site could be considered remnant Monterey pine forest on terrace 2 (an uncommon forest subtype, refer to Table 1). However, the value of restoring this site to natural Monterey pine forest would be considered low in terms of contributing to the conservation of representative Monterey pine forest on terrace 2 subtypes. This site would not represent a good Monterey pine forest enhancement opportunity because of its small size, isolation from the Monterey pine forest of Pescadero Canyon East, and level of disturbance.

Geology and Soils

Pescadero Canyon West consists of a recent alluvial floodplain, adjacent terraces, and terrace slopes. The soil type on the recent alluvial floodplain is classified as an Aquic Xerofluvent. It consists of layers of sand, sandy loam, and sandy clay loam with hydric mottles.

The adjacent terraces are marine terrace 2, which includes the Pebble Beach Golf Course to the north and young- and middle-aged dunes, including private residences, to the south. Although the geomorphic map shows a narrow band of marine terrace 1 above the beach to the north of Pescadero Creek, this terrace was not observed during the field survey.

The soil type of the intervening slopes is the Santa Ynez series, a loamy sand surface horizon over a shallow, dense claypan. In a foot trail descending the slope from the golf course, the claypan has been exposed by erosion. The shallow claypan results in a low permeability and high runoff rate for the terrace slopes. The Monterey County Soil Survey shows this area of marine terrace 2 as the Narlon series. The Santa Ynez series is similar but is characterized by a darker surface horizon and somewhat higher fertility.

The soil type at the top of the slope at the edge of marine terrace 2, and exposed in the seashore bluffs, is the Arnold series. The Arnold series is associated with the oldest dunes and has not been identified previously in this landform. It consists of loamy sand over iron-cemented, red sand at 20 inches or more. Where large areas of this cemented red sand occur further inland, such as at Fort Ord, it is known as the Aromas Formation. Its overall extent in this area near the seashore may be limited.

Special-Status Species

No special-status plant or wildlife species were located on the Pescadero Canyon West site.

Special-Status Plant Species

No special-status plant species were located during field surveys and none have been reported for the site (NDDB 1995). The overall potential for the site to support special-status plants (Table 2) was determined to be low based on the presence and extent of invasive horticultural species on the site and the lack of suitable habitat conditions.

Special-Status Wildlife Species

No special-status wildlife species were observed during the field survey at the Pescadero Canyon West site and none have been reported for the site (NDDB 1995).

The study site has a low potential to support most special-status wildlife species listed in Table 3. However, the dense mix of horticultural species near the west end of the site could provide suitable habitat for the Monterey ornate shrew, Swainson's thrush, common yellowthroat, and Salinas harvest mouse.

Although little downed wood is available on the Pescadero Canyon West site, the dense ground cover could be sufficient to support the Monterey ornate shrew. Terrestrial invertebrates used as prey by the shrew are also highly abundant in some areas.

The Swainson's thrush, common yellowthroat, and Salinas harvest mouse have no special status under the federal or state endangered species acts. However, these species are considered somewhat rare in the Monterey Bay region. The dense brush and vegetation at the site could be considered potential habitat for these three species.

Environmentally Sensitive Habitat Area Consistency Determination

ESHAs identified on Pescadero Canyon East and West are discussed in this section. Based on the criteria provided in Section 2, Pescadero Canyon supports habitats that should be designated as ESHAs and protected, maintained, and enhanced in a manner that is consistent with Public Resource Code, Sections 30231 and 30240. The Pescadero Canyon wetlands have already been identified in the certified Carmel Local Coastal Program Land Use Plan as environmentally sensitive. ESHAs identified for Pescadero Canyon East and Pescadero Canyon West are discussed separately below.

Pescadero Canyon East supports the following ESHA:

- Wetland drainage (Pescadero Creek) feeds into Carmel Bay, a designated Area of Special Biological Significance.

- Monterey pine forest on middle-aged dunes provides watershed protection and a buffer for Pescadero Creek and is part of a larger wildlife habitat corridor provided by Pescadero Canyon as a whole. Monterey pine forest on middle-aged dunes is considered environmentally sensitive in this study because only an estimated 123 acres of undeveloped Monterey pine forest on middle-aged dunes, or 15% of the historical distribution, remains on the Monterey Peninsula (Table 1). Although the habitat quality of the Monterey pine forest has declined because of the prevalence of non-native horticultural species, human activities (e.g., dumping of fill materials), and suppression of fire, the Monterey pine forest has been designated as an ESHA in this study. The presence of this disturbance does not detract from the factors that supported designation of the Monterey pine forest along the slopes of Pescadero Canyon East as an ESHA. The ESHA determination was based on the following:

- the presence of Monterey pine forest on middle-aged dunes (an uncommon forest subtype),

- the functions of watershed protection and a buffer for Pescadero Creek provided by the Monterey pine forest, and

- the Pescadero Canyon East site as part of a larger wildlife habitat corridor connecting the upper reach of Pescadero Canyon to Carmel Beach.

Pescadero Canyon East also has the potential to be restored and enhanced through removal of non-native species and planting of Monterey pine from local genetic stock.

Monterey pine forest on shale bedrock occurs along the lower slope of the Pescadero Canyon East site. Although this forest subtype is common on the Monterey Peninsula (approximately 79% of the historical extent currently exists) and is not considered environmentally sensitive in this report, this small area of Monterey pine forest has been included in the ESHA boundary for Pescadero Canyon East. This area was included in the ESHA boundary because it is a transition habitat between Monterey pine forest on an uncommon geomorphic surface and Pescadero Creek. Additionally, this transition habitat along Pescadero Creek would be included in the Coastal Commission's recommended 100-foot nondevelopment setback buffer from wetland boundaries, described below under "Resource Management Recommendations".

Although the redwood groves are also not considered environmentally sensitive, the two groves were included in the ESHA boundary because they occur along the creek banks and within the creek floodplain.

Pescadero Canyon West supports the following ESHAs:

- Central coast arroyo willow riparian forest

- Wetland drainage (Pescadero Creek) that feeds into Carmel Bay, a designated Area of Special Biological Significance

- Wet meadow

Pescadero Canyon West is also part of the wildlife habitat corridor extending along Pescadero Canyon.

The portion of Pescadero Canyon West that supports mixed horticultural species and planted Monterey cypress and planted or natural Monterey pine trees was not included in the ESHA boundary. However, as stated above, this area would be included in the California Coastal Commission's recommended 100-foot nondevelopment setback buffer from wetland boundaries.

Current and potential future activities in Pescadero Canyon that could affect ESHAs on Pescadero Canyon East and West include the following:

- slope destabilization from foot traffic, residential runoff, and residential development resulting in severe gullying and sedimentation in Pescadero Creek;

- clearing or thinning of riparian vegetation in Pescadero Canyon West; and

- introduction of additional non-native horticultural species from adjacent residential landscapes, resulting in the displacement of native species in the ESHAs.

Resource management recommendations that address these issues are discussed below.

Resource Management Recommendations

Pescadero Canyon East and West ESHAs should be managed through "controlling runoff . . . [,] maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams" (Public Resources Code, Section 30231). Implementing the following measures could protect the ESHAs in Pescadero Canyon from any further "significant disruption of habitat values".

- **Reduce Erosion and Sedimentation.** Cumulative erosion and sedimentation into Pescadero Creek could adversely affect Carmel Bay, a designated Area of Special Biological Significance (designated by the California State Water Resources Control Board). To reduce erosion from runoff, current and future residences along the canyon edge should be required to divert runoff into city drainage system or, as a last resort, pipe runoff to the bottom of the canyon. If the latter alternative is chosen, the pipe should extend to the bottom of the canyon rather than mid-slope to avoid erosion and gullying. Additionally, erosion at the small active gully at Pescadero Canyon East (Figure 2) should be controlled by redirecting street runoff from the gully into the City drainage system.

- **Remove Accumulated Debris from the Drainage.** Accumulated debris in Pescadero Canyon East has caused the drainage channel to widen in the hillslope. Debris accumulated in the drainage should be removed to reduce streambank erosion and hillslope undercutting.

- **Reduce Vegetation Removal and Slope Destabilization.** Vegetation removal and slope destabilization from foot traffic should be reduced by controlling access to the bottom of the canyon. An old rock stairway is located at Pescadero Canyon East. This stairway is covered by dense vegetation but could be restored to direct and control public access to the bottom of the canyon. The City should coordinate with landowners to determine whether this measure is feasible and acceptable. Alternatively, public access could be minimized or prevented because these properties are in private ownership.

- **Prohibit Removal of Vegetation from the Riparian Forest.** Most of the sensitive habitat is currently protected by a Scenic and Habitat Conservation Easement (Roseth pers. comm.). Removal of the central coast arroyo willow riparian forest from Pescadero Canyon West should be further prohibited by placing restrictions on private development and establishing nondevelopment setbacks (at least 100 feet) from the riparian forest. The California Coastal Commission recommends that a minimum buffer width of 100 feet be established along wetland boundaries to incorporate transitional zones and wetland edges (California Coastal Commission 1994).

- **Reduce the Introduction and Spread of Invasive Horticultural Species.** The introduction of horticultural species into the ESHAs should be reduced by providing residences with a list and source of native species (endemic to the central coast region of California) that could be used in residential landscaping and would be compatible with adjacent natural habitats. Residents also should be encouraged to plant Monterey pine from local genetic stock. Native Monterey pine may be more resistant to pitch canker infestation than are nonindigenous nursery stock. However, whether native trees are inherently more resistant than planted trees is unclear because of the limited occurrence of the disease in native stands (Wood pers. comm. in Jones & Stokes Associates 1994).

- **Require Mitigation for Impacts Associated with Development.** Landowners should be required to mitigate impacts associated with partial development of the site or development next to the site. Development next to ESHAs should be compatible with long-term sustainability of the canyon resources. In general, the development should result in a less-than-significant impact on the natural resources, particularly ESHAs, in the canyon. As stated in the City's general plan, "the City may require that a use permit be obtained before developable lots fronting on public open space and on Pescadero Canyon may be developed. Use permit standards would be developed to minimize grading and other alteration of natural landforms, minimize coverage, maximize the retention of important public views, and maximize setbacks." Through the development review process, the City should consider requiring the following measures as conditions of the building permit:

  - Develop agreements with landowners to dedicate and manage the lower slopes along Pescadero Canyon as open space.

  - Site development in areas that would avoid direct loss or indirect effects on native trees.

  - Avoid removal of native vegetation to the fullest extent possible.

  - Require removal of invasive shrub species (those that can be removed without resulting in substantial erosion) and planting of appropriate native species.

  - Restrict the use of heavy equipment in the area, and require that excavation along slopes be conducted by hand.

Performance standards for mitigating impacts on natural resources at Pescadero Canyon would depend on the type and extent of impact. In general, the performance standards that should be required by the City include reestablishment of a 100% vegetation cover within 2 years, composed of at least 75% native species by 5 years. At 5 years, the site should support the same habitat removed (e.g., Monterey pine forest) and consist of at least 75% native plants. Plant species that would provide bank stability and habitat enhancement should be used. Remedial actions (e.g., planting of native species and removal of invasive horticultural species) should be implemented as necessary to ensure that the site will consist of at least 75% native species at the end of 5 years.

- **Investigate the Potential for Enhancing the Monterey Pine Forest.** Opportunities for enhancing the Monterey pine forest on the site are constrained by the necessity to maintain vegetative cover for slope stability for the upslope street and houses. As discussed under "Geology and Soils", Pescadero Canyon East supports dune soils that are highly erodible and unstable. Removal of invasive species may result in slope destabilization and gullying, as observed along Second Avenue. Habitat enhancement, involving the removal of invasive species and replacement with native Monterey pine forest species (including pine seedlings), would require a substantial effort because of the erosive dune soils and aggressive horticultural species (many horticultural species in the forest reestablish quickly after removal).

  Nonetheless, the natural Monterey pine forest could be restored through careful habitat management. If site enhancement is proposed, a detailed plan should be developed by a qualified restoration ecologist. The plan would include removing invasive species in stages and immediately replanting with the appropriate species. Annual monitoring would be required to remove reestablishing horticultural species.

  The most feasible management approach for the Monterey pine forest would be to implement the measures outlined in The Guide to the Management of Carmel's Forests, Parks and Beaches (Taylor and D'Ambrosio 1981) in combination with the recommendations above.

RIO PARK

A biological assessment was prepared for the City by The Habitat Restoration Group in June 1990. This report describes biological resources and provides recommendations for enhancing the riparian forest at Rio Park (called the Hodges Property in the biological assessment). In summary, the report identified two habitat types on the site: central coast arroyo willow riparian forest and ruderal/landscaping. The Habitat Restoration Group determined that the riparian forest covered 2.2 acres and the ruderal/landscaped area covered 3.0 acres of the Hodges Property.

Vegetation and soils mapped during Jones & Stokes Associates' field surveys at Rio Park are presented in Figure 6.

Vegetation

Rio Park supports central coast arroyo willow riparian forest and ruderal/horticultural plantings.

Central Coast Arroyo Willow Riparian Forest

Based on a 1929 aerial photograph, Rio Park naturally supports riparian forest. The riparian forest probably was cleared during construction of the Carmel Mission. Currently, the central coast arroyo willow riparian forest is restricted to the Carmel River and two small tributary drainages that traverse the study site (Figure 6). The riparian forest is a multi-layered community that supports a canopy of arroyo willow, yellow willow (*Salix lucida* ssp. *lasiandra*), and black cottonwood (*Populus balsamifera* ssp. *trichocarpa*). The understory is composed of California blackberry, flowering currant, poison-oak, poison hemlock (*Conium maculatum*), and stinging nettle. German ivy, tree mallow (*Lavatera assurgentiflora*), pampas grass, giant reed (*Arundo donax*), and ice plant (*Carpobrotus edule*) occur in localized areas of the riparian forest.

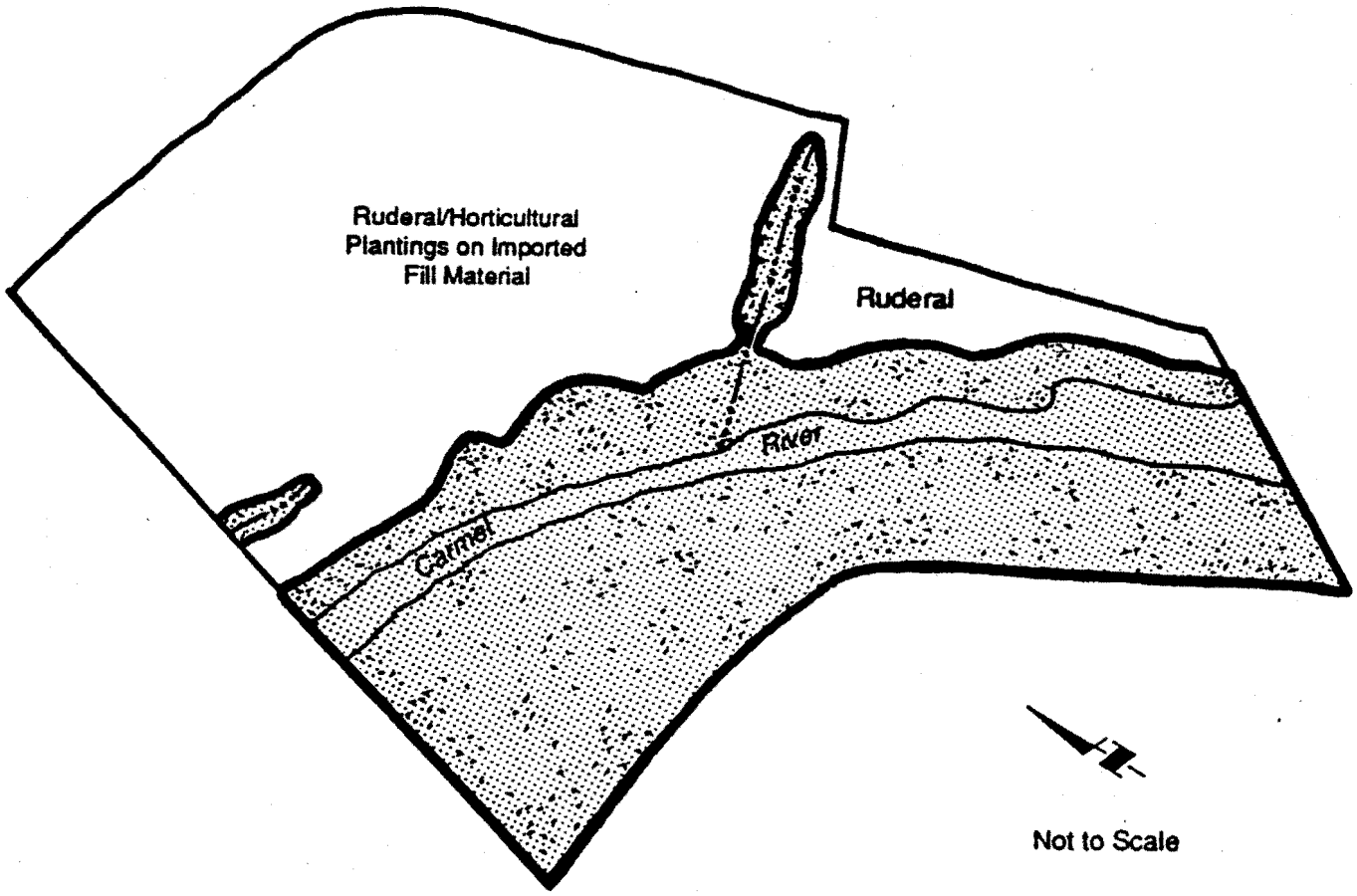
Ruderal/Horticultural Plantings

The northern side of the Carmel River contains local fill material that appears to have been recently graded. This disturbed portion of the site supports scattered ruderal species, such as plantain (*Plantago lanceolata)*, mallow, sweet clover (*Melilotus indica*), mustard (*Brassica campestris*), wild radish (*Raphanus sativa*), curly dock (*Rumex crispus*), and New Zealand spinach (*Tetragonia tetragonioides*). The northern boundary, along the entrance road, contains introduced Monterey cypress, eucalyptus (*Eucalyptus* sp.), and ice plant.

Geology and Soils

The Rio Park site is located on recent floodplain deposits of the Carmel River. The site is separated from the river by a low artificial levee that provides flood protection although it is subject to intermittent flooding during high-intensity storms. The sediment is unconsolidated, heterogeneous layers of sand and silt with thin, discontinuous layers of sand. Groundwater depth is between 1 and 2 meters from the natural ground surface.

The natural soil type of Rio Park is classified as an Aquic Xerofluvent, with no series designation in Monterey County. It consists of stratified layers of sandy loam, clay loam, and sand. The soil is somewhat poorly drained, with mottling indicative of hydric conditions occurring at a depth of 1 foot. Darkening from organic matter accumulation occurs in the surface horizon.



Legend

- Central Coast Arroyo Willow Riparian Forest on Aquic Xerofluvent
- Drainage
- Environmentally Sensitive Habitat Area Boundary

Jones & Stokes Associates, Inc.

Figure 6
Vegetation, Soil Types, an
ESHA Boundary at Rio Park

The natural soil surface is covered with imported fill to an average depth of 5 feet. The fill is heterogeneous and inconsistently layered, and consists of sand to sandy loam textured soils with occasional clay bands. The fill contains assorted gravels, cement chunks, and large pieces of Monterey Formation shale, along with other debris. The characteristics of various Monterey region soils may be identified in the components of the fill.

Special-Status Species

No special-status plant or wildlife species were located on the Rio Park site. The riparian forest along Carmel River was identified as important habitat for several special-status wildlife species.

Special-Status Plant Species

No special-status plant species were located during field surveys and none have been reported for the Rio Park site (NDDB 1995). The overall potential for the site to support special-status plants in Table 2 was determined to be low based on the disturbed condition of the site and the lack of suitable habitat conditions.

Special-Status Wildlife Species

No special-status wildlife species surveys were conducted by Jones & Stokes Associates. No special-status wildlife species have been recorded for the Rio Park site. However, The Habitat Restoration Group conducted a biological assessment of the site in 1990 and determined that the riparian habitat along the Carmel River provides important habitat for bird species. In this biological assessment, the following special-status species were reported as having been recorded using the riparian corridor in the Rio Park area: peregrine falcon, bald eagle, northern harrier, Cooper's hawk, sharp-shinned hawk, and yellow warbler.

Other special-status and special-interest species that potentially could occur in this area include Monterey ornate shrew, Monterey dusky-footed woodrat, Swainson's thrush, and common yellowthroat.

Environmentally Sensitive Habitat Area Consistency Determination

Based on the criteria provided in Section 2, the following habitat should be maintained under its current designated as an ESHA (City of Carmel Local Coastal program 1981) and protected and enhanced consistent with Public Resources Code, Sections 30231 and 30240:

- central coast arroyo willow riparian forest along the Carmel River.

The City has identified three alternative uses for the disturbed and leveled portion of the Rio Park site: establishing an active park, constructing a parking lot, or selling the site for development. As part of this ESHA study, the City requested an evaluation of Rio Park to determine the site's potential for riparian restoration, and the City requested identification of measures to avoid impacts on riparian habitat if the site is developed as a park. The potential for riparian restoration and enhancement at the site is discussed below, followed by resource management recommendations for proposed future uses.

Potential for Riparian Restoration and Enhancement

As mentioned earlier, Rio Park naturally supports riparian forest. The riparian forest was cleared from the site (date unknown) and replaced with approximately 5 feet of fill material that extends up to the riparian forest. Soil samples taken from the fill material indicate high texture variability; slight acidity; low to very low nitrogen, phosphorus, and sulfur; and high chloride levels (Soil Control Laboratory 1991). The high chloride content, low fertility, texture variability, and debris content of the fill material make it an unsuitable medium for planting native riparian vegetation. In addition, the fill material has substantially increased the rooting depth to the water table, further decreasing the suitability of the site for restoration.

The Habitat Restoration Group recommended planting riparian species within 50 feet of the existing riparian forest. However, restoration of the site would require removing the fill and using the underlying native soil.

Although riparian creation may not be feasible, the riparian forests on the site should be enhanced by removing invasive horticultural species (refer to the habitat description above for a partial list of the species). Invasive species should be removed manually (no herbicides should be used in the riparian corridor) between late spring and early summer, when the soils are moist. Removal techniques will vary depending on the species. The riparian corridor should be monitored annually after the first season, with vegetation removal techniques applied as needed. Some riparian planting may be necessary in areas where invasive species are removed.

An enhancement plan that identifies weed removal techniques and planting methods should be developed by a qualified restoration ecologist to ensure that the enhancement plan is successful. Additionally, the City should coordinate with the vegetation ecologist at the Monterey Peninsula Water Management District before developing a final enhancement plan.

Resource Management Recommendations

To avoid degradation and protect the ESHA from any significant disruption of habitat values that may be associated with site development, the following measures should be incorporated into the site plan. These measures would be consistent with Public Resource Sections 30231 and 30240 (a) and (b).

- **Establish a Minimum Buffer along Riparian Forests.** A minimum 100-foot buffer, as recommended by the California Coastal Commission, should be established along the outer edge of the riparian forest. No fertilizers, herbicides, or other chemicals would be allowed in this area.

- **Divert Runoff Away from Carmel River.** Opportunities should be explored for diverting park runoff away from the Carmel River and into the city drainage system to the north.

- **Emphasize Native Plants in the Landscape Plan.** The use of indigenous native plant species should be emphasized in the park landscape plan. Use of herbicides and fertilizers in the park should be minimized to the extent possible and alternative biological methods considered.

- **Provide Controlled Access to the Carmel River.** Access to the Carmel River should be controlled and concentrated into two designated areas by constructing two staircase trails along the eastern and western ends of the park. Establishing a trail would discourage the public from trampling vegetation in the riparian corridor. Signs should be posted next to the entrance of the staircase informing the public of the importance of remaining on the trail and placing trash in appropriately designated containers in the park. Signs also could provide ecological information on the riparian forest along the Carmel River and its wildlife habitat value. A nature trail through the riparian habitat could be interpreted by the California Coastal Commission as consistent with Public Resources Code, Section 20240(a) (b) (Otter pers. comm.).

MISSION TRAILS PARK

Vegetation and soils information for Mission Trails Park is presented in Figures 7 and 8. The City subdivided Mission Trails Park into four planning units: Martin Road Parcel, Park Proper, Flanders Mansion/Arboretum, and Outlet Meadow (Figure 9). Information on the vegetation, geology, soils, and special-status species of each of these planning units is presented below.

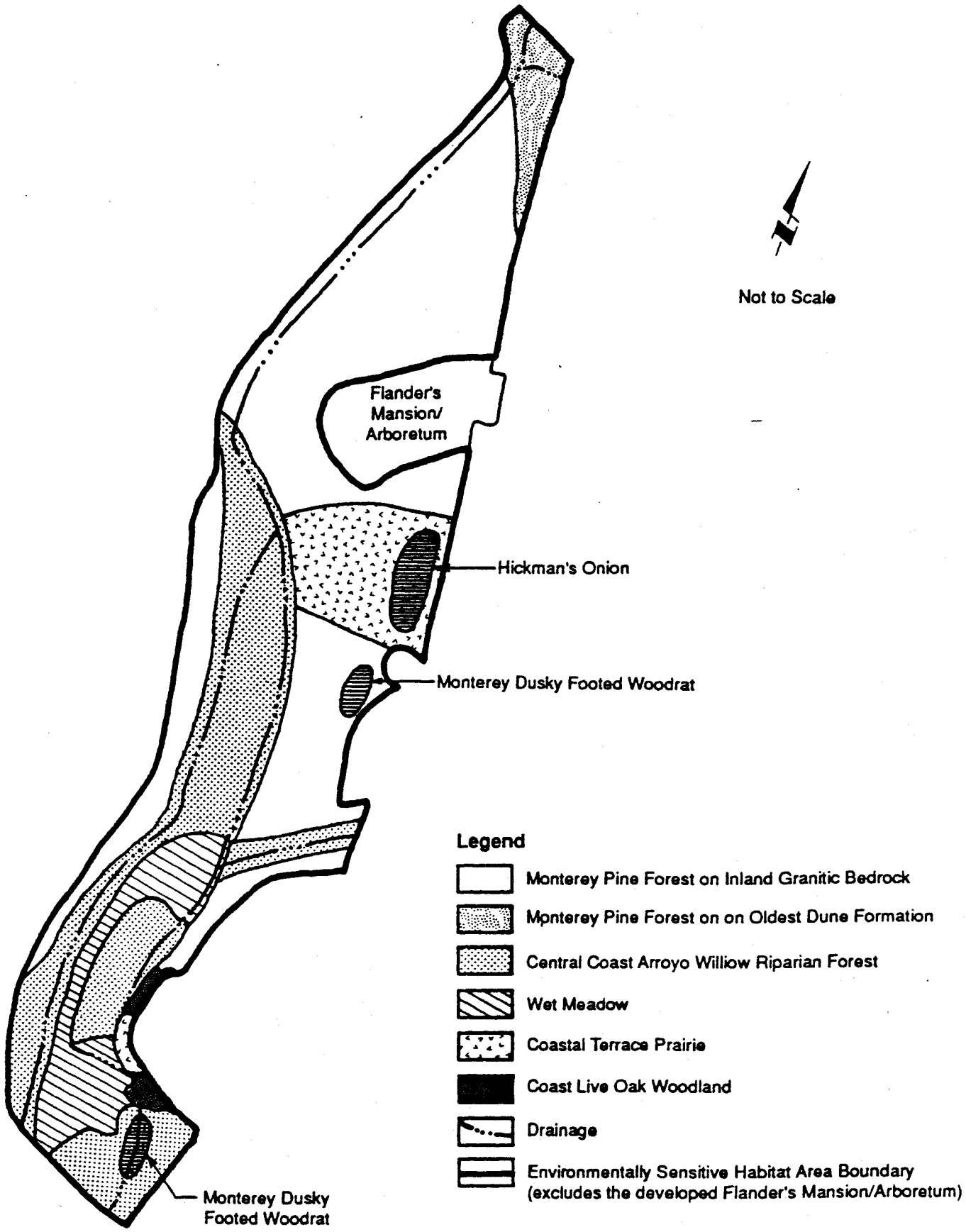


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Figure 7.
Location of Special-Status Species, Vegetation Types, and ESHA Boundary at Mission Trails Park

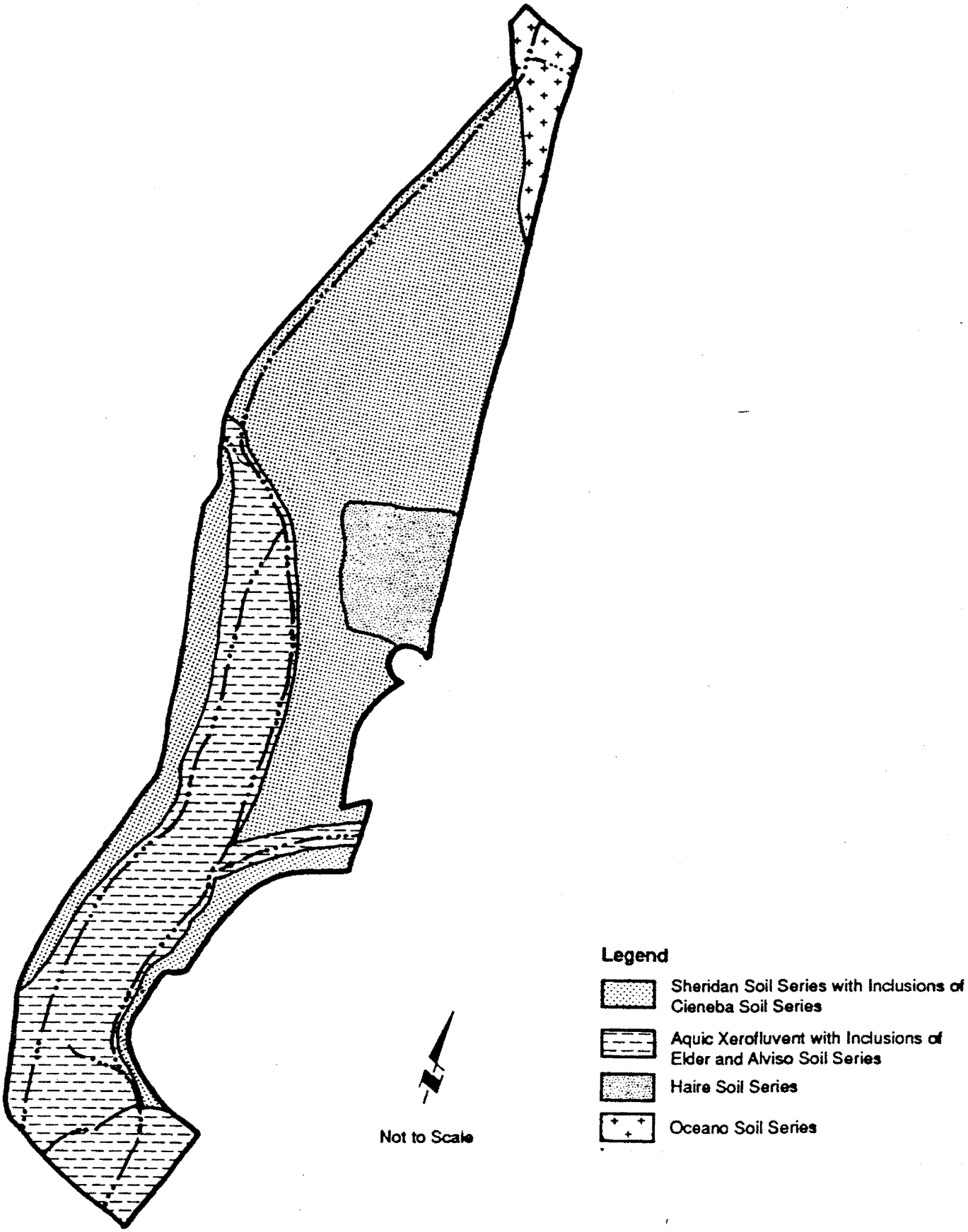

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Figure 8.
Soil Types at Mission Trails Park

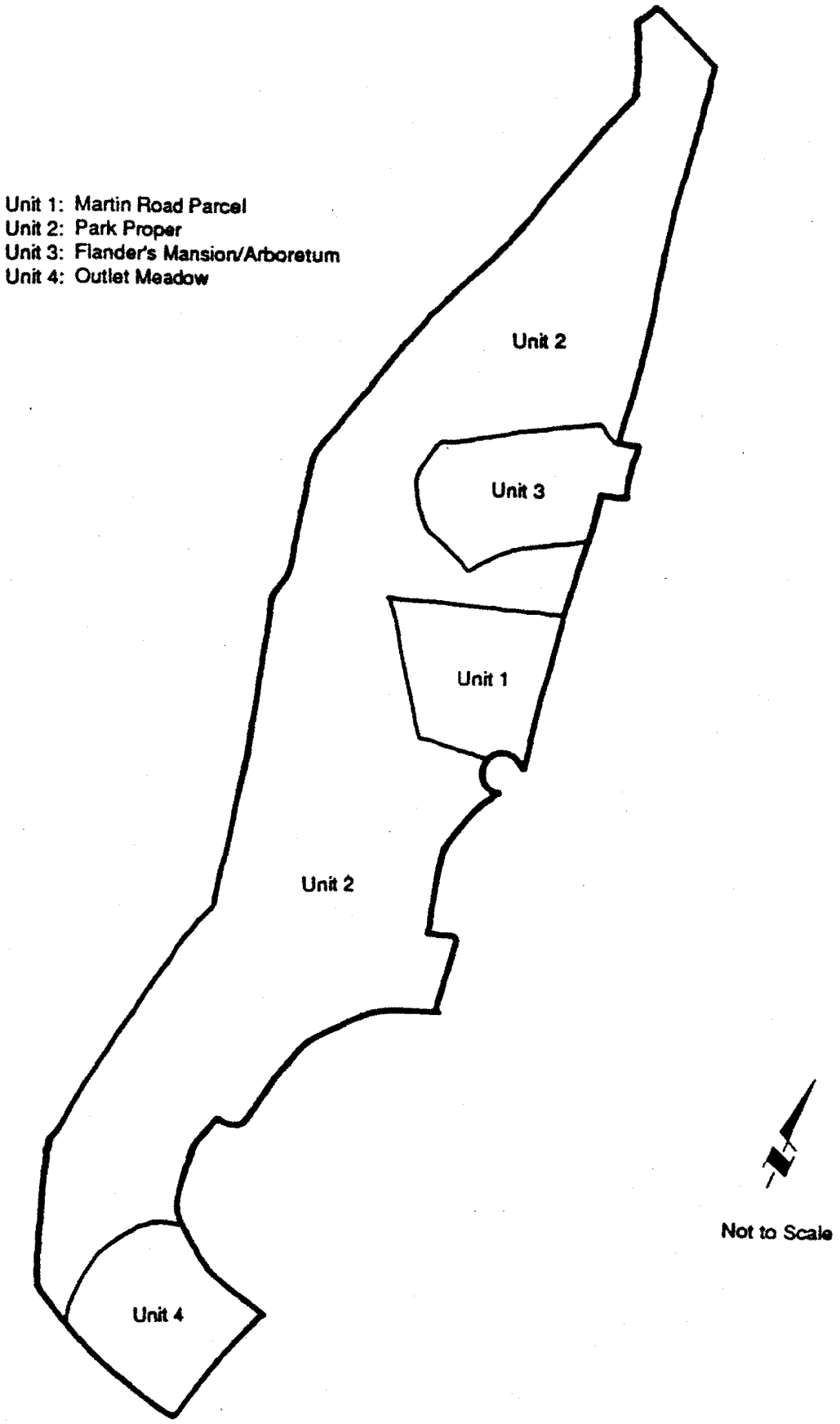

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Figure 9
Location of the Four Study Units at Mission Trails Park

Vegetation

Mission Trails Park supports a vegetation mosaic consisting of Monterey pine forest on inland granitic bedrock and oldest dunes, central coast arroyo willow riparian forest, wetland drainage, wet meadow, coast live oak woodland, coastal terrace prairie, and horticultural plantings. The four planning units support the following vegetation:

- Martin Road Parcel (Unit 1) supports coastal terrace prairie and a population of Hickman's onion (a federal candidate [C2] and CNPS List 1B species).

- Park Proper (Unit 2) supports Monterey pine forest on inland granitic bedrock and oldest dunes, central coast arroyo willow riparian forest, wetland drainage, and coast live oak woodland that is suitable habitat for Monterey dusky-footed woodrat (a federal candidate [C2] species).

- Flanders Mansion/Arboretum (Unit 3) supports Monterey pine forest on inland granitic bedrock with horticultural plantings.

- Outlet Meadow (Unit 4) supports central coast arroyo willow riparian forest (suitable habitat for Monterey dusky-footed woodrat), wetland drainage, wet meadow, coastal terrace prairie, and coast live oak woodland.

Vegetation types at Mission Trails Park are described below.

Monterey Pine Forest

Monterey pine forest on inland granitic bedrock is the dominant habitat type in the Park Proper. This geological formation (combined with shale bedrock) supports the most common and best preserved Monterey pine forest associations on the Monterey Peninsula. One small area of Monterey pine forest on oldest dunes occurs in the northern corner of the park (described below under "Geology and Soils"). Only 20% of the historical extent of Monterey pine forest on oldest dunes occurs on the Monterey Peninsula (Table 1).

In general, the forest supports mature large Monterey pine with a subcanopy layer of coast live oak and a dense understory of shrub, vine, and herbaceous species. The shrub and vine layer is dominated by French broom in various associations with blue blossom (*Ceanothus thrysiflorus*), California blackberry, poison-oak, toyon (*Heteromeles arbutifolia*), creeping snowberry, coffeeberry, shaggybark manzanita (*Arctostaphylos tomentosa*), twinberry (*Lonicera hispidula*), vetch (*Vicia sativa*), and bush monkeyflower. English ivy, German ivy, and periwinkle occur sporadically with these shrub species.

The forest herbaceous layer contains a diversity of species, including ripgut brome (*Bromus diandrus*), creeping wildrye (*Leymus triticoides*), bracken fern, California hedge-nettle, and rattlesnake grass (*Briza maxima*).

Flander's Mansion/Arboretum (Unit 3) supports Monterey pine forest on inland granitic bedrock with planted horticultural species from the document understory.

Coast Live Oak Woodland

A small area of coast live oak woodland occurs in the southeastern corner of the park. The woodland is characterized by a closed canopy of coast live oaks with an understory of coyote bush, California blackberry, poison oak, and herbaceous species.

Coastal Terrace Prairie

Coastal terrace prairie occurs along west-facing and south-facing slopes in the Martin Road Parcel and Outlet Meadow (Figure 8). As described under "Geology and Soils", these sites appear to occur on old alluvial terraces of the Carmel River. Coastal terrace prairie typically occurs within the zone of coastal fog incursion, on sandy loams located on marine terraces (Holland 1986). Holland (1986) also notes that most stands are patchy and variable in composition, reflecting local differences in available soil moisture capacity.

The coastal terrace prairie at Mission Trails Park contains a high diversity of annual and perennial grass and herbaceous species. Perennial and annual grass species in this community include needlegrass (*Nasella pulchra*), California oatgrass (*Danthonia californica*), meadow barley (*Hordeum brachyantherum*), rattlesnake grass, fescue (*Vulpia* sp.), and ripgut brome. The coastal prairie also contains a diverse mix of herbaceous species, including soap plant (*Chlorogalum pomeridianum*), cut-leaved plantain (*Plantago coronopus*), yellow sorrel (*Oxalis laxa*), plantain (*Plantago lanceolata*), clustered dock (*Rumex conglomeratus*), mariposa lily (*Calochortus albus*), buttercup (*Ranunculus* sp.), Hickman's onion (*Allium hickmanii*), golden brodiaea (*Tritileia ixioides* ssp. *ixioides*), and filaree (*Erodium cicutarium*). Saturated soil conditions provide favorable substrate for a variety of wetland species, including rush (*Juncus bufonius*, *J. xiphioides*, *J. patens*, and another unidentified *Juncus* sp.) and coyote thistle (*Eryngium armatum*).

Saturated soils and flowing water were observed at the upper edge and lower bottom of the coastal terrace prairie during April field surveys. The presence of this wetland hydrology (the underlying claypan described under "Geology and Soils" allows water to pond on the soil surface)and a prevalence of hydrophytic wetland plants (identified above) indicate that part of the coastal terrace prairie may qualify as jurisdictional wetland under Section 404 of the Clean Water Act.

Wetland Drainage

Two main perennial drainages and smaller drainages transect the study site (Figure 8). The main perennial drainage begins at the northern end of the park, runs along the western boundary of the park, and forks near the center of the park. At the northern end of the drainage, the drainage bottom is generally unvegetated. The steep bank sides are vegetated with Monterey pine and coast live oak with a dense understory of French broom, German ivy, English ivy, and California blackberry. French broom dominates the banks along the northern portion of the drainage, grading into a dense central coast arroyo willow riparian forest (near the 11th Street entrance to the park at Willow Trail). Redwood, bay tree (*Umbellularia californica*), and bamboo (*Bambusa* sp.) also occur in localized portions of the drainage.

Another perennial drainage feeds into the park from the east, supporting a dense central coast arroyo willow riparian forest.

Central Coast Arroyo Willow Riparian Forest

Central coast arroyo willow riparian forest occurs as a dense, multilayered forest along the northern boundary of the study site. As mentioned above, riparian forest also occurs along a perennial drainage near the western boundary of the park. The riparian forest is characterized by a canopy layer of black cottonwood and arroyo willow and a subcanopy layer of shrub-size arroyo willow and dogwood. The dense forest understory consists of California blackberry, Himalaya berry (*Rubus procerus*), passion vine (*Passiflora* sp.), German ivy, English ivy, nasturtium, and poison hemlock. In localized areas, invasive horticultural species form a conspicuously dense understory in the forest and have displaced desirable native riparian species.

Wet Meadow

Wet meadow dominates the southern end of the park in the planning unit identified as Outlet Meadow. The wet meadow is characterized by a mix of wet meadow species, grassland species, and seeded grasses. Wet meadow species present in the wetland include rush species (*Juncus balticus*, *J. xiphioides*, *J. patens*, *J. effusus* var. *pacificus*), umbrella sedge, sedge (*Carex herbacenses*, *C. harfordii*), rabbitsfoot grass, curly dock, and prickly ox-tongue. Grassland (including seeded grasses) species comprise approximately 40% of the total cover and include Italian ryegrass (*Lolium multiflorum*), velvet grass (*Holcus lanatus*), California brome (*Bromus carinatus*), ripgut brome, radish (*Raphinus sativa*), California hedge nettle, and geranium (*Geranium dissectum*). Species from adjacent riparian and oak woodland habitats are colonizing the wet meadow, including California blackberry, arroyo willow, white poplar (*Populus alba*), dogwood, and poison-oak.

Based on the surrounding vegetation and current species composition, Outlet Meadow once supported riparian habitat. The City removed riparian vegetation from part of this area; it maintains the wet meadow as open space by mowing. To enhance Outlet Meadow for aesthetic purposes, the City planted redwood, sycamore (*Platanus racemosa*), and Monterey pine in the meadow. Some of

these species were present in the area before Mission Trails Park was established as a public park (Kelley pers. comm.).

Geology and Soils

The geologic substrate at Mission Trail Park is granodioritic bedrock of the underlying Salinian Block. The associated soil type is primarily the Sheridan series, a moderately deep sandy loam with surface horizon organic matter accumulation. The Cienaba series is included in the Sheridan series and is a thin sandy loam soil that is limited to areas of shallow bedrock or substantial erosion. These and other field-verified soil types in Mission Trails Park differ from those mapped in the park area in the existing Soil Survey of Monterey County (Cook 1978).

One small inclusion of oldest dunes landform that occurs in the northeastern corner of the park is associated with the Oceano series (Figure 7). The Oceano soil consists of moderately weathered loamy sand, with surface horizon organic matter accumulation and darkening, and subsoil clay accumulation in thin bands and sand grain bridges.

The western low-lying region of Mission Trails Park supports a small drainage that is a tributary to the Carmel River. The watershed of the drainage begins outside the park on marine terrace 5. The Mission Trails Park drainage has carved a canyon through the succession of dune-covered marine terraces and Carmel River alluvial terraces into the underlying granitic bedrock.

The upper edge of the coastal terrace prairie at the Martin Road Parcel occurs on part of a marine terrace. The observed soil type best fits the Haire series, which is mapped just to the west on old alluvial terraces of the Carmel River. It has a shallow loam surface horizon over a dense claypan and overlies sandstone probably of the Monterey Formation.

The landform in the lowest portion of the park and next to the stream channel is recent alluvial floodplain. The primary Aquic Xerofluvent occurs in a complex with the sandy Elder and clayey Alviso series. The Alviso series occurs in a basin area at the junction of the west fork and main drainages.

Special-Status Species

Field surveys located one population of Hickman's onion in the coastal terrace prairie and suitable habitat for Monterey dusky foot woodrat in the Monterey pine forest and riparian forest.

One individual plant of Hooker's manzanita was located along the path to Flander's Mansion. This species has been planted in the arboretum and was most likely carried to this site by a bird (refer to the discussion under Special-Status Species presented for the Forest Hill Park site).

Special-Status Plant Species

Hickman's onion is a federal candidate for listing (C1) and is considered rare and endangered in California by CNPS (List 1B). The species is known from fewer than twenty occurrences and is threatened by urbanization, grazing, road construction, and military activities (Skinner and Pavlik 1994). A nearby occurrence of Hickman's onion was reported along the south side of Hatton Road, just east of Mission Trails Park (NDDB 1995).

The population of Hickman's onion at Mission Trails Park is a new occurrence and has not been previously reported in the NDDB. This occurrence occurs along the upper eastern edge of the coastal prairie terrace and contains approximately 100-150 individual plants. The population appeared to viable during the field visit. The area that supports Hickman's onion is maintained by mowing each year. The overall effects on the population from this maintenance activity are unknown and should be assessed through recommended monitoring efforts (refer to the discussion under Resource Management Recommendations).

No other special-status plant species were located at Mission Trails Park during the field survey and none have been reported in the NDDB (1995). However, suitable habitat was identified for late-blooming species listed in Table 2. Plant species that have the potential to occur at Mission Trails Park but would not have been identifiable at the time of the field survey include Gairdner's yampah and seaside bird's beak.

Special-Status Wildlife Species

Evidence of one special-status wildlife species, the Monterey dusky-footed woodrat, was observed during the field survey at Mission Trail Park. Two woodrat nests were observed on the eastern edge of the park, and several potential nests were seen in the Outlet Meadow area. The nests on the eastern edge of the park had obvious entrance and exit holes that showed evidence of use and appeared active.

Because of the relatively large size of Mission Trail Park and areas of habitat isolated from human intrusion by dense vegetation, the park provides the greatest potential habitat value of all the study sites surveyed. The dense riparian areas provide potential habitat for yellow warbler, Swainson's thrush, and common yellowthroat. The fairly frequent downed and decomposing logs could potentially be used by the Monterey ornate shrew. Sharp-shinned hawks and Cooper's hawks could use the Monterey pine forests for foraging and nesting.

A local resident interviewed during the field survey provided information on current and historical wildlife use of the area. The resident said that a pair of red-shouldered hawks had nested in the park in 1992 and that he occasionally sees various raptors foraging in the area, indicating the potential value of the park for Cooper's hawk and sharp-shinned hawk. The resident also verified that no frogs, turtles, or other herpetofauna occurred in the creek (none were observed during the field survey). The occurrence of large surges of water in the creek during storms, which could exclude these species, was also confirmed during the interview.

During the survey, several feeding and watering stations and cardboard shelters used by domestic cats were observed in the Outlet Meadow area of the park. It appears that a nearby resident has been maintaining a circuit of these stations and shelters for domestic cats residing in the park or at nearby residences. Cats, whether feral or domestic, are known to prey on resident wildlife (Caras 1973, Fitzgerald 1988, George 1974). The encouragement of cats to congregate and reside in the park through provision of food, water, and shelter has likely resulted in declines in rodent, bird, reptile, and amphibian populations in the park.

Environmentally Sensitive Habitat Area Consistency Determination

Mission Trails Park has been identified in the Certified Carmel Local Coastal Program Land Use Plan as an ESHA. Based on the criteria provided in Section 2, the following habitats should be maintained as ESHAs and managed consistent with Public Resource Sections 30231 and 30240:

- Monterey pine forest on inland granitic bedrock and oldest dune formation (excluding Flanders Mansion/Arboretum) that provide important habitat for the Monterey dusky-footed woodrat and other local wildlife species,
- wetland drainage,
- central coast arroyo willow riparian forest,
- coastal terrace prairie, and
- wet meadow.

Current and future activities at Mission Trails Park that could affect these ESHAs include the following:

- slope destabilization and accelerated erosion along the lower slopes of the coastal terrace prairie from foot traffic (on and off the designated trails);
- slope destabilization along the park perimeter from substantial vegetation removal for fire control;
- clearing or thinning of riparian vegetation in Outlet Meadow;
- maintaining feeding stations for domestic cats;
- introduction of additional non-native horticultural species from adjacent residential landscapes, resulting in the displacement of native species in the ESHAs; and
- conversion of coastal terrace prairie to a shrub-dominated community.

Resource management recommendations that deal with these issues are discussed below.

Resource Management Recommendations

Mission Trails Park is an important natural resource in the city and should be managed to maintain and enhance the natural integrity of the park. Currently, the park is maintained through a combination of mowing, planting, pruning, and removal of dead trees. The wet meadow and coastal terrace prairie are maintained by mowing for fire control. Horticultural species have been planted in Outlet Meadow for "tree enhancement" (Kelley pers. comm.). Some Monterey pine seedlings also are planted periodically and dead or diseased trees removed in the forest, as prescribed in the City's forest management plan. The riparian forest in the middle of Outlet Meadow has been trimmed in the past to maintain the open nature of this region (Kelley pers. comm.).

The following resource management recommendations would protect the ESHAs at Mission Trails Park from any significant disruption of habitat values:

- **Avoid Future Erosion and Loss of Native Coastal Terrace Prairie Vegetation.** Future erosion and loss of native vegetation from the coastal terrace prairie should be avoided in the Martin Road Parcel by improving the foot trail. This could be accomplished by creating rock steps along the slopes and placing rocks along the edges of the trail that cut across the slope. Signs could be placed along the trail that educate the public on ecology of the coastal terrace prairie and emphasize the importance of remaining on the trails. Additionally, vehicle use should be restricted in the flat portion of the Martin Road Parcel because the claypan soil readily saturates to the surface and is susceptible to compaction and damage.

- **Monitor the Hickman's Onion Population and Implement Measures to Protect the Population.** The City should retain a qualified botanist to monitor the population of Hickman's onion to determine if current management techniques and public use of the coastal terrace prairie are affecting the viability of the population (e.g., determine if the population is increasing or decreasing from mowing and determine the appropriate period for mowing). If public use is adversely affecting the population, the City may consider limiting access in the area during critical periods for the Hickman's onion (e.g., during winter months when the soils are moist and compaction or soil disturbance could affect the species and during the species blooming period, March-May).

- **Enhance Coastal Terrace Prairie.** Non-native shrubs invading the coastal terrace prairie should be removed. Most of the seedlings invading the prairie could be removed manually during late spring when the soils are moist. The California Conservation Corps from Gabbilon Camp could be used to assist in the French broom control. Work groups also could be organized through local conservation groups.

- **Manage a 30-Foot Vegetation Buffer along the Park Perimeter.** Residences along the park perimeter should be encouraged to remove vegetation to the minimum extent necessary to reduce fire hazards. Maintaining vegetation cover along the park hillslopes is important to reduce erosion. Hillslope vegetation adjoining existing homes on the upslope boundaries of the park should be cleared for fire protection no more than the minimum requirement, and the cleared areas should be replanted with suitable native plants. Residences along the park should be provided with information on how to maintain this vegetation buffer for fire control and suggestions on native species that could be planted in the buffer to provide habitat enhancement (this action would be included in the land stewardship program discussed below under "Develop and Implement a Land Stewardship Program").

- **Avoid Removal or Pruning of Riparian Vegetation.** Additional removal or pruning of the riparian vegetation at Outlet Meadow should be avoided. This maintenance activity may be viewed by the California Coastal Commission as a significant disruption of habitat values.

- **Reduce the Introduction of Invasive Horticultural Species.** The introduction of horticultural species into the ESHAs should be reduced by providing residences with a list and source of native species that should be used in residential landscaping and that are compatible with adjacent natural habitats. Local native plant nurseries should be consulted to develop a list of available plants. Residences should be encouraged to plant Monterey pine seedlings (grown from local genetic stock).

  The Guide to the Management of Carmel's Forest, Parks and Beaches (Taylor and D'Ambrosio 1981) discusses the possibility of establishing a city nursery south of the arboretum and east of the Flanders Mansion. A driveway, footpaths, sprinkler systems, and greenhouse would be constructed as part of the nursery project (approved by the Carmel Forestry Commission in 1979). This nursery could provide an excellent opportunity for educating local landowners on native plants and local habitats, and providing the public with local genetic plant stock for landscaping purposes.

- **Maintain and Enhance Habitat for Monterey Dusky-Footed Woodrat**. To enhance habitat for the Monterey dusky-footed woodrat at Mission Trails Park, the City should discourage local residents from feeding cats in the park and remove the feeding stations from Outlet Meadow. Because the species requires forest debris to build nests, the City should leave some woody debris in the forest.

  The exact distribution and areas of high quality and important habitat for woodrat at Mission Trails Park have not been determined. The City may elect to retain a biologist to establish trapping and monitoring stations at the park. Information obtained from this study would be used to develop a long-term management plan for Monterey dusky-footed woodrat at Mission Trails Park.

- **Develop and Implement a Land Stewardship Program.** Because ESHA boundaries could be extended beyond park boundaries to include adjacent private land, a stewardship program should be developed that would target landowners adjacent to the park. The program would be based on the premise that resource management is a cooperative effort between the City and its citizens. The purpose of the stewardship program would be to educate landowners and residents about the importance of maintaining and enhancing ESHAs and other important habitats that cross over park boundaries and into residential neighborhoods. As part of this program, periodic mailings or information sheets would be sent to property owners concerning various topics, such as maintenance of fire buffers, use of native plants in landscaping to enhance adjacent habitats, and removal techniques for common invasive species (e.g., French broom).

FOREST HILL PARK

Vegetation, geology, soils, and location of Hooker's manzanita at Forest Hill Park are presented in Figure 10.

Vegetation

The predominant vegetation type at Forest Hill Park is Monterey pine forest on Terrace 5 and on oldest dunes. One seasonal drainage runs northeast to southwest across the study site (Figure 10).

The Monterey pine forest varies slightly in species composition across the park. At the southern end, large Monterey pines grow along the steep banks of a canyon in association with coast live oak, blue gum, French broom, nasturtium, German ivy, periwinkle, and grassland species.

In the central and northern end of the park, Monterey pine forest contains an overstory of mature Monterey pine and a subcanopy layer of coast live oak. The understory is primarily grassland. Scattered native shrubs that comprise approximately 40% total cover include toyon, black sage, monkeyflower, native manzanita species, shaggy-barked manzanita, blackberry, coffee berry, and chamise. Horticultural species that occur in the northern portion of the park include redwood, green wattle, periwinkle, German ivy, and ice plant. Planted Monterey pine seedlings also occur in the northern region of the park.

The center of Forest Hill Park contains a lawn surrounded by various horticultural plantings. Redwoods have been planted next to this lawn and information center.

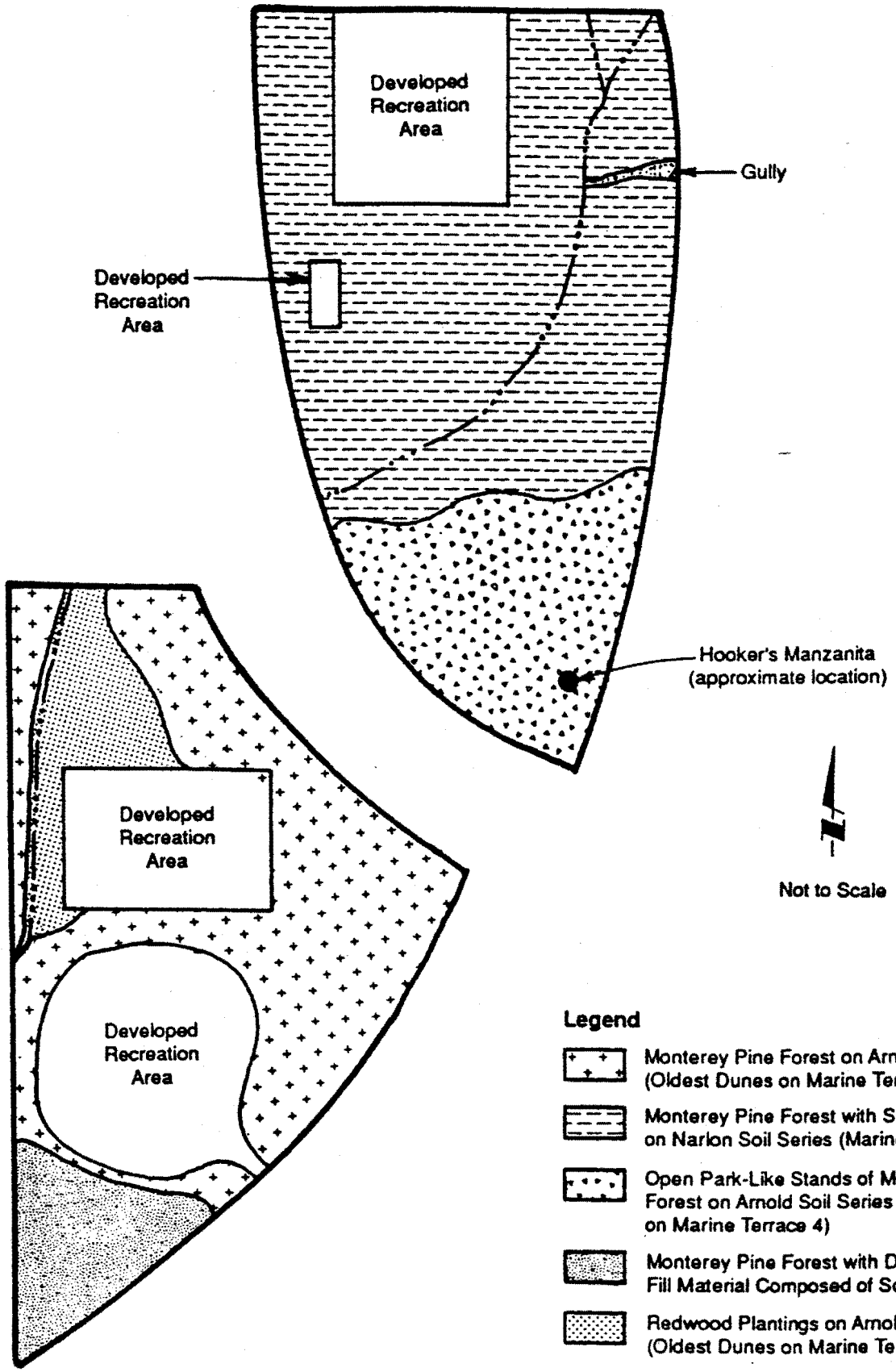

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Figure 10
Vegetation and Soil Types at Forest Hill Park

Geology and Soils

The lower portion of Forest Hill Park is located on the oldest dunes overlying marine terrace 4. The associated soil type is the Arnold series, identified above on the coastal bluffs and marine terrace edge at the Pescadero Canyon West site. Although not previously identified in the Monterey County Soil Survey as occurring specifically in the city, Arnold soil, characterized by the iron-cemented "red" sands, does occur on the oldest dunes landform and most extensively at Fort Ord. This section of the park once supported a city landfill (Kelley pers. comm.).

The upper portion of Forest Hill Park is located on marine terrace 5. The associated soil type is the Narlon series. The Narlon series is a paleosol, or ancient soil, that has a shallow surface horizon of weathered and bleached sand overlay a very thick and dense claypan. Although the soil is extremely acidic, has very low fertility, and has a very low water capacity available to plants, the Narlon series is a wetland soil that readily saturates and ponds water above the infiltration-restricting and root-restricting claypan.

Special-Status Species

One special-status shrub, Hooker's manzanita, was located on the Forest Hill Park site. No special-status wildlife species or important habitat for those species were located field surveys.

Special-Status Plant Species

One individual Hooker's manzanita was located in the northern portion of Forest Hill Park (Figure 10). Hooker's manzanita is considered rare and endangered in California by CNPS (List 1B). This isolated occurrence of Hooker's manzanita on the site could be of natural origin. The manzanita seed could have been dispersed by a fruit-eating bird.

The successful establishment of this species on the site indicates that Forest Hill Park has the potential to support Hooker's manzanita. The single plant occurs on a small isolated patch of Aromas Formation, a geologic formation known to provide suitable habitat for Hooker's manzanita. The City may choose to incorporate more plantings of Hooker's manzanita into the park landscape. Although this species would blend naturally with the Monterey pine forest on the northern end of Forest Hill Park, Hooker's manzanita plantings at the park would not contribute significantly to the long-term conservation of the species. This conclusion is based on the small, isolated condition of the suitable habitat at Forest Hill Park and the presence of other larger core populations.

The largest populations of Hooker's manzanita and suitable habitat areas are protected within the Bureau of Land Management's Natural Resource Management Area at Fort Ord and within Prundale Hills Manzanita Regional Park. Other large populations occur on protected and unprotected

sites at Larkin Valley, Monterey Peninsula, and Lobos Ranch. These five areas provide the best sites for long-term species conservation.

Because Forest Hill Park is maintained for public use and receives a substantial amount of foot traffic, the site has a low potential to support other special-status plants listed in Table 2.

Special-Status Wildlife Species

No special-status wildlife species were observed during the field survey at Forest Hill Park and none have been reported at the site (NDDB 1995).

Because of its small size, frequent use by humans, and isolation from other natural areas by surrounding development, Forest Hill Park has a low potential to support special-status wildlife species or important habitat for those species. The playground portion of the park provides only a small ring of habitat around the developed central portion, and no special-status wildlife species are expected to occur there. Although the portion of the park with the tennis courts provides a slightly larger habitat area, it also has a very low potential of supporting any special-status wildlife species.

Environmentally Sensitive Habitat Area Consistency Determination

Although Monterey pine forest on these geomorphic surfaces (oldest dunes and marine terrace 5) is considered an ESHA in this study, the Monterey pine forest at Forest Hill Park was not determined to be an ESHA for the following reasons: It is heavily used and has been substantially altered, especially at the southern end of the park, and the forest habitat is isolated and surrounded by development. The children's playground, restrooms, and shuffle board court comprise a large component of the southern section of the park. The northern end of the park supports a higher quality Monterey pine forest with a patchy shrub understory layer.

Forest Hill Park has been "disturbed and degraded by human activities and developments" (Public Resources Code, Section 30107.5) and will continue to be maintained to provide opportunities for the public. For these reasons, the Forest Hill Park was not determined to be an "area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role" (Public Resources Code, Section 30107.5).

Resource Management Recommendations

Although the study determined that Forest Hill Park did not support an ESHA, the City could implement the following recommendations to enhance the natural resources at the park:

- **Plant Monterey Pine Seedlings.** The City should continue to plant Monterey pine seedlings in the Monterey pine forest (local genetic stock).

- **Avoid Further Bank Erosion and Gullying.** Further bank erosion and gullying should be avoided at the northern end of the drainage by implementing structural measures and soil bioengineering techniques to stabilize the drainage banks. This gullying is the result of vegetation disturbance and mechanical breakdown of streambanks from park use, increased rates of runoff from impervious surfaces in developed areas adjoining the park, and the high erodibility of the Narlon soil under disturbance conditions.

CARMEL BEACH

Vegetation

Although largely unvegetated, Carmel Beach does support scattered areas of native dune scrub and horticultural plantings (no vegetation figure is provided for this site). Native dune scrub occurs near the corner of Ocean and San Antonio Avenues. Species observed in this scrub habitat during the field survey include mock heather (*Ericameria ericoides*), bush lupine (*Lupinus arboreus*), beach sagewort (*Artemesia pycnocephala*), California blackberry, beach evening primrose (*Camissonia cheiranthefolia*), pink sand verbena (*Abronia umbellata*), croton (*Croton californicus*), California sea rocket (*Cakile maritima*), and ice plant. Six coast live oaks are scattered in the dune scrub.

Horticultural plantings occur in scattered locations along the bluffs of Carmel Beach. One grove of Monterey cypress occurs along Ocean Avenue, near the dune scrub. Other horticultural species that have been planted or have colonized the beach north of Ocean Avenue include acacia, ice plant, and Bermuda grass (*Cynodon dactylon*). Beach dune grass (*Leymus mollis*) has been planted in several areas of the dunes to stabilize erosion problems.

Special-Status Species

Tidestrom's lupine was located in and near the dune scrub habitat at Carmel Beach (Figure 11). In this area, black legless lizards have been reported at Carmel Beach (Bury 1985).

Environmentally Sensitive Habitat Area Consistency Determination

Based on the criteria provided in Section 2, the following habitats at Carmel Beach should be designated as ESHAs and protected and maintained consistent with Public Resources Code, Sections 30231 and 30240:

- dune scrub that provides habitat for Tidestrom's lupine and black legless lizard, and
- unvegetated dunes.

Resource Management Recommendations

The Carmel Beach Management Plan (incorporated as an element of "A Guide to the Management of Carmel's Forest, Parks and Beaches" [Taylor and D'Ambrosio 1981]) outlines specific measures to manage and maintain the balance between the natural dune environment and public use. Activities discussed in detail in the Carmel Beach Management Plan include the following:

- restoring and revegetating bluffs and dunes;
- constructing seawalls and rock revetments and improving the Scenic Road stormwater drainage system; and
- installing beach access stairways, shoreline pathway, and informational signs.

If the management and maintenance actions outlined in the Carmel Beach Management Plan are implemented as described in the plan, the balance between maintaining the natural dune ecology and providing public safely may be achieved. The following measures could be incorporated into the management plan to ensure that long-term management activities maintain the natural dune systems:

- **Retain a Qualified Restoration Specialist to Assist in Dune Restoration.** A qualified restoration ecologist or botanist with experience in dune restoration should be retained to assist in developing a planting plan for restoring the dunes. The restoration plan should incorporate habitat characteristics that favor Tidestrom's lupine and black legless lizard. Tidestrom's lupine is a state- and federal-listed endangered species and is protected under the state and federal endangered species acts. Although there are no specific consultation requirements, the City should contact and discuss any future habitat enhancement with DFG and USFWS personnel.
- **Develop Interpretive Signs.** Interpretive signs should be developed to educate the public on dune ecology and the dunes. These signs should be posted to discourage trampling of dune scrub habitat and "shortcuts" down beach bluffs. An ideal location for

an interpretive sign would be near the corner of Ocean Avenue and North San Antonio Avenue.

- **Prevent Further Planting or Expansion of Invasive Horticultural Species.** Although removal of ice plant from the beach bluffs may not be feasible (because of the expense and time required), the City should prevent further planting or spread of existing populations. These actions should be incorporated into the City's beach management plan.

- **Monitor the Tidestrom's Lupine Population**. The City should retain a qualified botanist to monitor the population of Tidestrom's lupine on Carmel Beach. The population should be assessed annually (or based on schedule agreed upon by DFG and USFWS) to determine if the population is stable and determine if measures to protect the population should be instituted. If the population appears heavily affected by public use, the City should consider fencing or placing barriers around the occurrences on the beach.

- **Retain a Biologist to Determine the Current Status of the Black Legless Lizard at Carmel Beach.** The City should retain a qualified herpetologist to monitor the black legless lizard population and determine if measures to protect the species should be instituted.

Section 6. Conclusions

The California Coastal Act definition of an ESHA was interpreted for this study to develop a list of criteria for identifying environmentally sensitive habitats. The ESHA criteria were based on certain terms used in the definition of an ESHA, including "rare", "especially valuable", and "special nature or role in an ecosystem". Each of the five study sites was evaluated to determine if they support plant or animal life or habitats that are rare or especially valuable or that provide a special role in an ecosystem.

In summary, the habitat types identified as environmentally sensitive in this study include Monterey pine forest on middle-aged dunes, wetland drainage, central coast arroyo willow riparian forest, wet meadow, coastal terrace prairie, and dune scrub and unvegetated dunes. Areas that support important habitat for Hickman's onion, Tidestrom's lupine, black legless lizard, and Monterey dusky-footed woodrat were also identified as environmentally sensitive. These native habitats are regionally unique, and most are protected or monitored by state and federal agencies. During this ESHA study, management recommendations were developed to provide the City with guidance on long-term protection and maintenance of environmentally sensitive habitats.

The ESHA determinations and resource management recommendations provided in this report are subject to further evaluation by the Coastal Commission and city council and are based on the most current biological information. As new information becomes available, ESHA criteria and boundaries should be reevaluated, particularly for Monterey pine forests. Although not all Monterey pine forests were considered environmentally sensitive as defined under the California Coastal Act, Monterey pine forest is a regionally unique habitat that should be managed and preserved to maintain its long-term viability.

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Appendix F: Historic Context Statement Carmel-by-the-Sea

HISTORIC CONTEXT STATEMENT
CARMEL-BY-THE-SEA

Prepared For
The City of Carmel-by-the-Sea

By
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Leslie Heumann and Associates
September 1994

Revised By
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Archives & Architecture
May 31, 1996

Adopted January 7, 1997

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1.0 INTRODUCTION

1.1 The Historic Context Statement

A historic context statement is a technical document containing specific sections mandated by the Secretary of the Interior in National Register Bulletin 16. The Bulletin defines a historic context as "a body of information about historic properties organized by theme, place, and time." Historic context is linked with tangible historic resources through the concept of property type. A property type is a "grouping of individual properties based on shared physical or associative characteristics." The purpose of a historic context statement is to provide a framework for identifying historic resources, determining their relative significance, and applying the criteria for listing in the National Register of Historic Places. Specific examples referred to in this document are included solely to illustrate physical and associative characteristics of each theme and/or property type; exclusion from this report is not intended to diminish the significance of any individual historic resource or person.

1.2 Location and Boundaries of Carmel-by-the-Sea

Carmel-by-the-Sea is located on the Monterey Peninsula. It is approximately one square mile in area and is generally bordered by the Pacific Ocean to the west, Highway One to the east, the community of Pebble Beach to the north, and the Camel River to the south.

1.3 Community Character and Values

When established in 1902, development in Carmel was greatly influenced by the Arts and Crafts movement. Much of the unique character of Carmel-by-the-Sea results from this Arts and Crafts influence coupled with an appreciation of the City's natural environment. Elements of the natural environment such as topography, vegetation and climate, shaped the human response to the built environment. As the community developed, efforts were made to adapt the man-made elements to the underlying natural elements. In the residential districts, roads are typically narrow and curve and undulate to follow the topography and make room for trees. In the commercial districts, sidewalks curve and are frequently interrupted by trees and mini-parks. Most shops and businesses are built to face open sidewalks and interior or exterior courtyards in acknowledgment of the mild weather. The use of open space encourages pedestrian exploration and movement. Architectural design includes construction with natural materials, pleasant open spaces, and abundant landscaping.

Over the years, there has been a conscious effort to maintain the village-like characteristics of the town. For example, there are no house numbers, residential sidewalks, parking meters, street lights, or traffic signals. Houses are small and blend into their surroundings. Gardens are informal, making use of natural vegetation. Trees are greatly revered and given precedence over building expansion and the movement of traffic.

1.4 Overview of Themes

Each chapter of this report is organized by a theme, derived from a broad set of associated events that helped shape the history of Carmel. Each theme spans a particular period; however, at any given point in time, events contributing to more than one theme may be at work. Consequently, time periods for each theme may overlap. The starting and ending dates for thematic periods are usually determined by key historical events. The discussions of the historical development for some of the themes is brought up to 1940, with the advent of World War II as the chronological marker that preceded far-reaching cultural changes.

The development of Carmel-by-the-Sea can be organized into five broad themes: Prehistory and Hispanic Settlement (1542-1846); Economic Development (1846-1940); Government, Civic and Social Institutions (1903-1940); Architectural Development (1903-1940); and the Development of Arts and Culture (1904-1940). From 1542 through 1846, the story of Carmel was not separated from the surrounding region and revolved around the Native American inhabitants, European exploration, and Spanish and Mexican colonization. California's transformation to an American state after 1846 was characterized by the changes in the economy that led to the development of the village of Carmel and the rise of business and tourism in the area. Following Carmel-by-the-Sea's development in 1902 and incorporation in 1916, a number of government, civic and social institutions were established. The role of the Arts and Crafts movement permeates both the built environment and the cultural life of the town. The influx of artists and writers after 1905 set the stage for the development of an artists colony and arts and culture have played a pivotal role in the identity of Carmel ever since.

1.5 Gender and Ethnicity

Women have been critical to the history of Carmel in terms of the development of architecture, cultural institutions and community activities. Beginning in 1889, Abbie Jane Hunter opened the first hotel in Carmel. In 1892 she formed the Women's Real Estate and Investment Company to help stimulate early land sales. She was followed in 1902 by Jane Powers, an accomplished painter, who worked with her husband Frank Powers to make Carmel-by-the-Sea a center for people of artistic temperament. She helped organize the Arts and Crafts Club in 1905 with several other ladies already involved in the arts. After the San Francisco 1906 earthquake, she encouraged many of her artistic friends to move to Carmel. These individuals were the vanguard of notable women who greatly influenced the character of Carmel.

Ethnic minorities also helped to shape the city's past. Non-White ethnic groups played a variety of roles in the society including that of laborers, fishermen, small business owners, firemen, and artists. Of course, the ethnic history of Carmel can be traced back to the Native American inhabitants of the region, the Ohlone Indians discussed in the second chapter of this report. The Ohlones played a pivotal role in the mission system by providing labor, including the construction of buildings which still stand. What marks they may have made

independently on the landscape, however, were probably erased by successive waves of immigrants to the area, beginning with the Spanish. By the end of the nineteenth century, the Ohlone culture ceased to exist as a culturally identifiable group due to acculturation and disease.

According to the 1910 census, about 90 percent of people living in Carmel were American born, with most migrating from other parts of California and others arriving from a variety of states in the East or Midwest. The population also encompassed a relatively small number of foreign-born immigrants from Asian and European countries including China, Japan, Sweden, Italy, Portugal, Germany, Norway, and Spain. Some of the first property sold by the Carmel Development Company was sold to Mrs. E.A. Foster, an African-American woman from Monroe, Michigan. She purchased two lots on Dolores and ten lots on the south side of Ocean Avenue between San Carlos and Mission. In 1903 Roland and Emma Henderson, an African-American couple from San Jose, opened a restaurant in the old carpenter shop on Dolores Street. Pon Sing opened the second restaurant in Carmel which was also the town's first Chinese restaurant. He later became the cook at the Pine Inn, which opened in 1903. One of Carmel's many artists, Ling Fu Yang, was also of Chinese ancestry. Pon Lung Chung served with the Carmel Fire Department and in 1931 was reportedly the only fireman of Chinese ancestry in the United States.

Ethnic and gender contributions are considered integral elements that overlay all the themes discussed below. Where known, significant contributions by non-white groups and women will be discussed; however, the absence of specific gender or ethnic references does not preclude the importance that these demographic groups may have played in the development of the community.

2.0 PREHISTORY AND HISPANIC SETTLEMENT (1542-1846)

2.1 The Original Inhabitants

The history of Carmel begins in the centuries preceding the "discovery" of California by Europeans, when there were some 300,000 Native Americans in the state. These early inhabitants were divided into more than 100 tribes which typically shared cultural, linguistic, dress, housing, and other traits according to the regions of California in which they lived: southern, central (where Carmel is located), northwestern, or northeastern. The indigenous peoples of Carmel were the Costanoans, the coast people. They are also sometimes referred to as the Ohlones. These Native Americans foraged for seeds and nuts, hunted small animals, and fished from boats. Archaeological evidence has placed Ohlone settlements near the present mission and at the mouth of San Jose Creek. Villages were made up of ten to twelve rounded dwellings of tule grass lashed to willow poles, each with a central fire pit. Other structures included sweat houses used for purification in times of illness and before a hunt.

2.2 Early European Exploration

The Ohlones may have come into contact with Europeans as early as 1542, when the Spanish explorer, Juan Rodriguez Cabrillo, journeyed to Alta California.[1] Contact with the Ohlones was first reported in 1602 by Sebastian Vizcaino, who had been commissioned to map the coast of Alta California. On December 16, 1602, Vizcaino, along with two hundred men and a few Carmelite friars, landed in Monterey Bay. The friars found the area to be almost identical to Mount Carmel and the hills of Galilee and persuaded Vizcaino to call the river through the area Rio Carmelo and the rounded mountain above it Mount Carmel. After surveying the area for three weeks, the group continued to sail north and eventually returned to Mexico to report on their expedition.

2.3 Hispanic Settlement

Despite the sixteenth and seventeenth century Spanish explorations of Alta California, occupation and settlement did not begin until the eighteenth century. Fearful that the Russians or the English might try to expand their territory in North America, the king of Spain ordered Gaspar de Portola to set out on an overland expedition from San Diego in 1769 to establish missions, presidios, and pueblos. He was accompanied on his journey by Franciscan friars led by Father Junipero Serra. Father Serra was born in Petra on the Isle of Mallorca on November 24, 1713. He entered the Order of Saint Francis at a young age. At thirty-six he was sent to Mexico where he was a missionary for nineteen years before journeying to Alta California to establish the chain of missions.[2] The missions played two critical roles in the occupation process: the pacification of the Native Americans through conversion and Hispanicization and the establishment of an agricultural base. The first of the missions was founded in San Diego on July 16, 1769. In 1770, the group arrived in Monterey Bay and on June 3 the Mission San Carlos Borromeo and the Royal Presidio were dedicated where San Carlos Church stands today in the City of Monterey. A year later the mission was moved five miles south to a more fertile area near the Rio Carmelo. A cross was erected, and work began on the first mud-plastered wooden buildings. By 1772 Serra could thus describe the mission:

> A stockade of rough timbers, thick and high, with ravelins in the corners, is something more than seventy varas long and forty-three wide, and is closed at night with a key, although it is not secure because of the lack of nails. The main house is seventy varas wide and fifty long. It is divided into six rooms, all with doors and locks. The walls are constructed of rough timbers plastered over with mud, both inside and out. Those of the principal rooms are whitewashed with lime. One of the rooms serves provisionally for a church. Near this building, on the outside, is the guard house or barracks for the soldiers; and adjoining it, their kitchen. All is enclosed in the stockade. All of these buildings have flat roofs of clay and mud, and for the most of them a kitchen has been made. There are various little houses for the Indians, with straw or hay roofs. Attention was later given to a small garden, which is near at hand, but for want of a gardener, it has made little progress.[3]

For the rest of his life, Father Serra used Mission San Carlos Borromeo as the headquarters from which he established seven more missions.[4] In ecclesiastical terms it became the most important of the missions.

Gradually, the Ohlones as well as neighboring tribes were converted to Christianity and incorporated into mission life. Indeed, those who accepted baptism became the *de facto* labor force in as much as neophytes were not permitted to leave the mission. They were trained to perform a variety of tasks at the mission including raising livestock, cultivating crops, and building construction. By 1783 the mission was self-sufficient and supported a population of 700.[5]

Construction of the church at Mission San Carlos de Borromeo near the Carmel River was begun in 1793. Dedication took place in 1797 under the direction of Father Lasuan, who took over as "padre presidente" after Serra died on August 28, 1784. Unlike most of the missions in the chain which were designed by padres, Mission San Carlos de Borromeo was designed by a stone mason, Manuel Estevan Ruiz, who was brought from Mexico. Ruiz also built San Carlos Church in Monterey, which was erected at the same time. The chief material was native brown sandstone, with mortar and plaster obtained from abalone shells. The simple nave plan is 150 feet by 29 feet, measured on the inside, with walls 5 feet thick. Firmly buttressed, the building is surmounted by two belfries, one of which is approached by an outside stairway. Typical of mission churches, the design of San Carlos de Borromeo is rooted in the architectural traditions of Spain and Mexico, although the constraints of the locale and climate, and the locally available materials and skills necessitated certain adaptations. The construction of other buildings—school, dormitories, shops, granaries—proceeded until 1815, when the completion of the mission quadrangle was celebrated with thanksgiving services.

By the 1820s, the lagging economy of the area began to change and increase due to the altered administrative policies of the new Mexican government. Two of these policies had important local ramifications. The first was the legalization of trade with foreign ships in the ports of San Francisco and Monterey. The traders exchanged tea, coffee, spices, clothing, leather goods, etc., for tallow and hides. Under the stimulus of this commerce, coastal settlements became lively trade centers.

The second change in policy to have far-reaching effects in California was the secularization of the missions and the establishment of large, private land grants. During Spanish rule the relationship between the missions and provincial government of Alta California became increasingly tense as the Franciscans were pressured into giving up control over their land and neophytes. Mexico's independence from Spain in 1821 removed trade restrictions that up until then had been imposed on the missions. Open trade allowed the missions to increase their productivity, thereby becoming a supply source for the settlers and travelers along El Camino Real, the road which linked the missions. The Franciscans amassed a great deal of economic as well as spiritual power. However, disputes soon arose between the Franciscans

and Mexican government over debts to the missions, taxes, and authority over the neophytes. In 1822 Mexico's legislature finally mandated the formal secularization of the missions. The Franciscans were replaced, missions were converted to parish churches, and land holdings redistributed. During this time, the Mission San Carlos Borromeo was essentially abandoned, and San Carlos Church became the principal local place of Catholic worship.

With the change of governmental control from Spain to Mexico in 1822 and the secularization of the missions, new land utilization and ownership patterns began to evolve. In 1824, Mexico passed a law for the settlement of vacant lands in an effort to stimulate further colonization. Any citizen, whether foreign or native, could select a tract of unoccupied land so long as it was a specific distance away from the lands held by missions, pueblos, and Indians. The grantee petitioned the governor for a specific tract, which after investigation and if there were no objections, was granted. The grantee was responsible for building a house and keeping a minimum of 100 head of cattle.

A number of ranchos were created around Mission San Carlos. The area along the coast south of the *Rio Carmelo* was *Rancho San Jose y Sur Chiquito.* It was granted to Teodoro Gonzalez in 1835 and re-granted to Marcelino Escobar in 1839. Another grant resulted in *Rancho El Pescadero*, located to the north of the mission and including Del Monte Forest, Cypress Point and the present-day community of Pebble Beach. It was granted to Fabian Barreto in 1836. *Rancho El Potrero de San Carlos,* also on the south side Carmel River, consisted of 4307 acres that had been used by the mission as a pasture. It was granted to Fructuoso del Real in 1837. *Rancho Cañada de la Segunda* was granted to Lazaro Soto in 1839 and encompassed land east of the mission to *Cañada de la Segunda.*

Overseeing the immense acreage and herds of cattle, the California ranchero and his vaqueros spent many hours on horseback, the favored form of transportation. Cattle, allowed to range freely, were rounded up twice a year during a *rodeo*—in the spring to brand the calves and again during the late summer for slaughter. The *rodeo* was often an occasion for socializing with the neighboring rancho families. With *fiesta* and *fandango*; the *rodeo* festivities often lasted a week or more.

In the early years of the province, the slaughter, or *matanza*, was solely for domestic needs. Cattle supplied beef to be eaten fresh or dried for future use; hides for shoes, lariats and outerwear; and tallow for candles and soap. During the period of Mexican rule the *matanza* became more systematic and extensive. Hides were carefully stripped from the carcasses and the tallow was rendered for domestic use and for export. In trade, the tallow brought six cents per pound, from 75 to 100 pounds were obtained from each carcass. Hides brought from one dollar to $2.50 a piece, becoming known as "California bank notes." The hide and tallow economy was fostered by foreign merchants who were settling in California during this period. Monterey merchant Thomas Larkin actively encouraged the rancho economy and exploited local resources by purchasing or taking in trade rancho products in exchange for manufactured goods brought by American and English trading ships.

2.4 Associated Property Types

2.4.1 Identification

There are few extant properties associated with the Native American culture or early European exploration and settlement of Carmel. Property types associated with this theme may include

- archeological sites
- mission structures and objects
- rancho hacienda buildings and features.

2.4.2 Description

Archaeological Sites

Two Ohlone villages were apparently located near Carmel: one near the mission and the other near the mouth of San Jose Creek (outside of the city boundaries). Specific natural features or locations also may hold strong associations and cultural meaning for the Ohlone people.

Mission Structures and Objects

Mission San Carlos Borromeo is designated as a California Registered Historic Landmark and is listed in the National Register of Historic Places. It is significant as an excellent restored and reconstructed example of a California mission, which has the added importance of having been founded by Father Junipero Serra in 1770, and having served as the headquarters from which he directed the administration of the expanding mission system until his death.

The mission as it exists today is a fusion of an early building plus its early restorations with twentieth century structures sympathetic to the Mission style of architecture. Only parts of the mission church remain as originally built in the late eighteenth or even nineteenth century, while the remainder of the mission quadrangle and the nearby buildings are of more recent construction. The mission gradually fell into a state of disrepair after its secularization in 1833. During the 1880s the mission was maintained and altered in a piecemeal fashion. Early restoration efforts included the construction of the peaked roof which replaced the original tile, vaulted roof.

In 1931, San Francisco cabinetmaker Harry Downie was commissioned by Monsignor Philip G. Scher of San Carlos Church to restore the mission. Under Downie's supervision, the tile roof was restored, three steps to the original altar rail were changed to one, and radiant heating was placed under a new tile floor which replaced the original burnt tile. Many of the original statues and works of art were returned. Restoration of the mission school was undertaken in 1945.

Rancho Haciendas

A number of Mexican ranchos were granted in the sphere of influence of Carmel-by-the-Sea. Although no known hacienda sites are known to have existed in or near Carmel, it is possible that rancho activities associated with the coastal resources or shipping activities were located in the vicinity. A rancho hacienda was typically a small, self-sufficient village that, in addition to the main residence, could also include auxiliary residences for vaqueros and Indian labor, kitchen, privies, granary, ovens, wells, spring house, blacksmith shop, tanning vats, trash deposits, corrals, and gardens and orchards. Most of the building materials would have also been manufactured on site; however, some may have been "borrowed" from San Carlos Mission which had been abandoned after secularization. Barrow pits for the making of adobe bricks and kilns for firing roof and floor tiles would have been located nearby.

2.4.3 Significance

Archaeological sites associated with the Native American, Mission, and Rancho periods that retain integrity may qualify for listing in the National Register of Historic Places under Criteria D because they have yielded, or may be likely to yield, information important in prehistory or history. The State Office of Historic Preservation or the Archaeological Information Center should be contacted regarding known archaeological sites in the area; exact locations of sites are protected information.

As the headquarters for the California missions, any resources associated with Mission San Carlos have a high degree of significance despite of low levels of integrity due to deterioration and subsequent restoration. According to the National Register nomination form, only the mission church is listed. Related resources which may qualify for listing on the National Register under Criterion C include a statue of Serra and a sarcophagus by Joseph Mora, as they "represent the work of a master and possess high artistic values." The statue was dedicated during the Serra Pageant in 1922, but is located outside of the city boundaries at the foot of Serra Road in the Carmel Woods. The sarcophagus was dedicated to the memory of Serra in 1924 and is located in the mission church.

There also may be other standing and archaeological features associated with mission activities at and/or near the current mission compound. The old pear orchard adobe was occupied by Christiano Machado, which later served as the Mission Tea Room and more recently as a residence. Archaeological features may include building foundations, tanning vats, olive presses, blacksmith shop, canals and other water features, grain mills, etc. The archaeological remains of mission and rancho resources would be important in furthering a more complete understanding and interpretation of the development of the Hispanic frontier.

3.0 ECONOMIC DEVELOPMENT (1846-1940)

3.1 Early Agriculture and Industry

3.1.1 Ranching and Farming

In May 1846, the United States declared war on Mexico and shortly thereafter the Americans raised the flag in Monterey. In 1848, the United States acquired the Mexican province of California in the Treaty of Guadalupe Hidalgo. Closely following the annexation of California by the United States, the discovery of gold in the Sierra foothills precipitated a sudden influx of population to the State and accelerated California's statehood. After California was admitted into the Union as the thirty-first state in 1851, increasing numbers of European settlers made their homes in the Carmel area. The U.S. Board of Land Commissioners was created to confirm the Spanish and Mexican land grants. During this time, many ranchos began to break up as Mexican families lost control over their land in court to other claimants because titles were unclear. Others were forced to sell off portions of land to European settlers to help pay taxes and legal fees incurred during the confirmation process.

A similar pattern of land segmentation emerged in the Carmel area. A small section of the once extensive lands of Mission San Carlos Borromeo, most of which were sold by the Mexican government, was returned to the Church. On February 19, 1853, Joseph Sadoc Alemany, Roman Catholic Bishop of the Diocese of Monterey, petitioned the U.S. Board of Land Commissioners for the return to the Church of a portion of Mission San Carlos Borromeo including the buildings and surrounding land. The grant was confirmed on December 18, 1855, and a patent was issued on October 19, 1859 for nine acres. On some maps these lands are shown as Rancho Mission Carmel. Honoré Escolle, a French immigrant, gained control over the land to the north of the mission which he called *Rancho Manzanitas*. His land included the area from present-day Junipero Avenue to Monte Verde Street. In 1860, John Martin acquired a large parcel of land between Escolle's property on the north and the mission on the south. It encompassed the land between present-day Twelfth and Santa Lucia Avenues and continued west to the shoreline to include Carmel Point. It is believed that John and Anna Murphy settled on land west of Escolle about 1846. Because of unsettled land titles, it was not until 1875 that Murphy received a deed for ninety acres of land along the shoreline. The *Rancho Cañada de la Segunda* passed through numerous owners until acquired in 1869 by Mrs. Dominga Doni de Atherton, wife of Faxon Dean Atherton, and mother of Gertrude Atherton. William Hatton became Mrs. Atherton's ranch manager in 1888, later purchasing the western portion in 1892.

Land use during the early American period was primarily cattle ranching and dairies. William Hatton managed several dairying operations in the Carmel Valley. Most of the farms and ranches in the area practiced general farming, raising livestock and poultry, producing butter and eggs, planting orchards and vineyards, and growing a variety of field

crops. What was not consumed by the family was sold locally or shipped to San Francisco.

The earliest surviving example of a 19th century ranch house in Carmel is the Murphy-Powers Residence and Barn/Studio, located on a beach front parcel west of San Antonio Avenue. The farm house dates back to 1846 when John Murphy and his family settled the property. John Murphy's title to 90 acres, including this property, was confirmed in 1875. The house and barn may predate 1875; evidence has been found to support construction as early as 1846.

During the twentieth century, the property changed hands several times and underwent several alterations. In 1904 the buildings and property were sold to Frank Powers, president of the Carmel Development Company. Powers, with his wife Jane, reportedly made improvements to the house. At the same time, they turned the old pine log barn into a studio for Jane, an accomplished artist. In 1920 James and Maud MacKenzie moved into the ranch house and stuccoed the board and batten exterior. The barn/studio property was later subdivided and incorporated into a new house for Herbert and Luella Chapman.

3.1.2 Whaling and Fishing Industries

During the mid-nineteenth century, the abundant marine life of Monterey Bay attracted Chinese, Portuguese, and Japanese fishermen to the area. Possibly as early as 1851, a Chinese fishing village was located on a level terrace above the cove at Point Lobos, now called Whalers Cove. By 1860 six Chinese fisherman lived in a small village, and were joined in 1862 by Portuguese whalers. The two groups shared the cove until the Chinese left in the 1870s. Located at this site was a stone quay from which the Chinese could ship their catch as well as pull their boats out of the water when necessary. Leasing land from David Jacks, there were also Chinese fishing villages located at Pescadero Point and at Stillwater Cove (now Pebble Beach Golf Course) as early as 1868. In 1880, Jacks sold his Pescadero ranch to the Pacific Improvement Company, who opened a scenic drive along the coast in 1881. Within a year of the drive's construction, the Chinese at Pescadero opened a roadside stand where they sold polished shells and souvenirs to the parade of tourists. In 1888, J. W. Collins noted the village for the U. S. Fish Commission:

> At Pescadero, on Carmel Bay, is another Chinese fishing camp, settled in 1868, and [it] has a resident population of some 30 fishermen; it is picturesquely situated on a road that skirts the shore, and is within easy reach of the fishing grounds on Carmel Bay.

Numbers dwindled at the Pescadero fishing village until it was abandoned about 1912.[6]

Whalers Cove near Point Lobos became the focal point of the Portuguese whaling industry in 1862. Whalers Knoll was the area from which whales were sighted. The captured whales were brought to Whalers Cove to be "flenced." The Portuguese built residences on the south side of the cove. Antonio Victorine, a native of the Azores and a whaler by trade, came to

the Point Lobos whaling station in 1863. In addition to whaling, he also established a dairy near the mouth of San Jose Creek. The Victorine family stayed in the area, marrying into other local families, with many members of the extended family taking an active role in the development of the region.

Around 1880, the availability of less expensive kerosene for lighting supplanted whale oil, which began the demise of the Carmelo Bay Whaling Company. Some Portuguese whalers returned in 1897 to join the Japanese in a whaling venture operating for a short period under the name Japanese Whaling Company.

In 1896, Gennosuke Kodani, a Japanese marine biologist, arrived from Japan and began an abalone fishing business at Point Lobos. In 1898, Mr. Alexander M. Allan purchased Point Lobos for a business investment and residence. Kodani and Allan established and operated an abalone fishery in 1898 and constructed an abalone cannery in 1902. This partnership continued until 1930. After the abalone cannery was shut down, Japanese divers continued to harvest abalone until shortly before World War II.[7]

3.1.3 Extractive Industries

Although very little in the way of heavy industry took place in the village of Carmel, there were a number of mining ventures that took place at various locations around Carmel Bay. Point Lobos was also the scene of several extractive industries. As early as 1854, granite was quarried from a nearby rock outcropping. About 35 men were employed in the extraction. The granite was shipped from the stone quay in Whalers Cove. The rock was used in the construction of the Old Monterey Jail, U. S. Mint in San Francisco, and in the Mare Island shipyard.

In 1863, the San Carlos Gold and Silver Mining Company was formed by local citizens. Several abandoned mine shafts have also been discovered on John Martin's ranch near Mission San Carlos.

In 1874, low-grade coal was discovered and brought from Malpaso Canyon in the Carmel Valley to Coal Chute Point by four horse wagon teams. A narrow gauge, horse-drawn railroad was built by the Chinese in the valley in 1878. The low-grade coal was never found in enough volume to be a very successful operation, and the mining efforts were abandoned in 1901. In an attempt to recoup losses, the Carmel Land and Coal Company subdivided property near Point Lobos, selling lots for $50 or less.

Sand and gravel from Carmel Bay beaches were also exploited. Surveyor George Tolman's 1872 field notes note that the "large drift of white sand" on Carmel Beach was "much used by painters and glass blowers." In 1888 sand deposits were mined at Pebble Beach. The sand brought $2.50 per cubic yard. Dr. Walton Saunders signed an agreement with the San Francisco and Pacific Glass Works for the purchase of 89 acres west of Monte Verde Street between the lands of Murphy on the north and Martin on the south. In 1899, Alexander

Allan laid narrow-gauge railroad tracks from San Jose Beach to the Coal Bunker at Point Lobos for transporting sand to ships. In 1901, Ann Murphy leased 37 acres of her Carmel Beach ranch to E. B. Lindauer of San Francisco. According to the terms of the lease, Lindauer could haul away at least 500 tons of "pure white sand" annually, paying Ann 20 cents per ton removed. Sand was to be removed by steamship or railway.[8] Point Lobos sand pits again went into operation during World War II when the Monterey Sand Company sent sand to the navy shipyards in the San Francisco area. In the 1920s, gravel was quarried at the "Pit" near Point Lobos and trucked to San Jose Beach and crushed for construction use.

After Carmel-by-the-Sea was established the only industrial activities within or near the village boundaries were associated with the building industry. The Plaza Fuel company produced brick and in 1925 Albert and Emma Otey became the owners of the Carmel Thermotite Company in partnership with Ella Maugh. Thermotite was a type of interlocking concrete building block invented by H. E. Clauser and Floyd Bohnett in Campbell in the early 1920s. Clauser and Bohnett produced the machines and molds for the blocks which they sold as franchises throughout the country.[9] In Carmel, Thermotite was distributed from a small factory building on Santa Fe and Third streets from 1922 to 1931. The structure still stands today. The Seven Arts Building at Lincoln and Ocean streets and the Flanders Mansion were built of the Thermotite hollow concrete block system.

3.2 Business and Tourism

3.2.1 Real Estate

In 1888, Santiago J. Duckworth purchased 324 acres of land from Honoré Escolle and filed a subdivision map for Carmel City.[10] Surveyed by W.C. Little and Davenport Bromfield, Carmel City was generally bounded by Monte Verde Street on the west, Monterey and Carpenter Streets on the east, Twelfth Avenue on the south, and First Avenue on the north. Ocean Avenue divided the area into north and south while Broadway (now Junipero) bisected it into east and west. Duckworth, already established in the real estate business in Monterey, planned to develop Carmel City as a summer resort for Catholics, akin to the Methodist retreat already established in Pacific Grove. Considering the number of tourists the mission had been attracting since its first restoration, the idea seemed to have merit. In July 1888 the sale of lots began. Corner lots were sold for $25, inside lots for $20 or more and business lots sold for $50. An advertising brochure highlighted the advantages of the lots for commercial purposes, access to the Southern Pacific train station in Pebble Beach, and the soon to be completed road to Monterey over Carmel Hill.

In the first few years, development of Carmel City seemed to be advancing as planned. Cottages were built and businesses established. Duckworth opened the Hotel Carmelo on the northeast corner of Ocean Avenue and Broadway (Junipero) in 1889.[11] Abbie Jane Hunter, with her uncle, Delos Goldsmith, as builder, was responsible for the creation of one of the first important businesses in Carmel, a bathhouse. Located at the foot of Ocean Avenue, the

Carmel Bathhouse also opened in 1889. It was eventually sold to the City of Carmel in 1921, which in turn sold it in 1929 to Mrs. W.C. Mann who dismantled it.

By the early 1890s, however, Duckworth's plans began to collapse as the boom of the 1880s quickly turned into the depression of the 1890s. He turned to Abbie Jane Hunter for assistance, and for a short time business seemed to regain its momentum. Hunter was an unusual woman for the era, having formed the Women's Real Estate and Investment Company in January 1892. In April of that year she sent William T. Dummage to Carmel as her resident agent. By 1895, the company had sold some three hundred lots in Carmel, mostly in what is now the business district. Sales soon declined, however, and Hunter was forced to disinvest as well.

In 1902 James F. Devendorf took over the unsold land from Duckworth with the financial backing of San Francisco lawyer Frank H. Powers and the two formed the Carmel Development Company with an office at the northwest corner of Ocean and San Carlos. Devendorf, who was the on-site manager, is generally credited with shaping the development of early Carmel. Originally from Michigan, he went to San Jose in 1874 to be with his mother who had relocated there some years earlier. With a love for the land and experience as a salesman, Devendorf joined in the booming California real estate market and came to own extensive property in San Jose, Morgan Hill, Gilroy, Alviso, and Stockton. Unlike other real estate developers, he was not interested in land speculation; his passion was for building communities. When Duckworth approached him about exchanging land in Carmel for part of his holdings elsewhere, Devendorf was intrigued by the idea, having visited Carmel on vacation with his family in the early 1890s. Envisioning the opportunity to build a community that enhanced the natural environment, he made the exchange and filed a map of Carmel-by-the-Sea with the County Recorder in 1902. The new tract was a re-subdivision of most of Carmel City west of Broadway, now renamed Junipero Avenue. Soon thereafter Devendorf built a cottage for himself at Lincoln and Sixth (now demolished). His family continued to live in Oakland where he would join them on weekends.

Frank Powers shared Devendorf's love for nature and commitment to the development of Carmel, but he had more of a financial stake in its success. Like Duckworth, Powers was certain that the Southern Pacific Railway extension from Pacific Grove would be built. The fact that the rail link to Carmel never came to fruition, of course, probably allowed the natural character of the town to be maintained. Powers and his wife remodeled the old Murphy ranch house as a home for his family and a studio for his socialite wife Jane Gallatin. Powers also maintained his social ties and legal practice in San Francisco.

Initially, lot sales in Carmel-by-the-Sea were slow. A $500 cottage was easily secured with a $5 or $10 deposit, or $6 per month to rent. By 1905 there were seventy-five residents, several stores, a restaurant, a school and hotel. After the 1906 San Francisco earthquake, however, lots sold more vigorously as displaced San Franciscans looked for a new place to live. By 1913 there were approximately 550 permanent residents and thousands of summer visitors.

3.2.2 Ocean Avenue Business District

Carmel's business district as it exists today began during the first decade of the twentieth century when the Hotel Carmelo was moved and as the Pine Inn was expanded. Commercial services which catered to residents and increasingly to tourists eventually lined both sides of Ocean Avenue between Junipero and Monte Verde and the blocks to either side between Fifth and Eighth Avenues. The commercial climate of the village was relaxed and informal, a characteristic that was also reflected in the architecture of the business district. In order to maintain the unique character of the downtown business district, in 1931 the city council passed an ordinance preventing the use of "neon" and other types of electric signage within the city.

One of the first entrepreneurial businessmen to settle in Carmel was Louis Slevin, who arrived with his mother in 1902. Slevin opened the first general merchandise store, served as the first official postmaster, first express agent, and first city treasurer. Slevin was also a avid photographer whose pictures document much of Monterey County during the early part of the century.

In the 1920s and 30s, art galleries became a focal point of the business district. While many artists had established studios in the village, the only gallery was the clubhouse of the Arts and Crafts Club on Casanova between Eighth and Ninth. In 1927 the Carmel Art Association was formed, and the somewhat exclusive membership paid dues of one dollar per month to the association which would provide exhibition space, hire a curator, and make sales. Their first gallery was rented space in the Seven Arts Building at Lincoln and Ocean. The association purchased the Ira Remsen Building on the west side of Dolores Street in 1934 which was expanded in 1939. Hazel Watrous and Dene Denny formed the Denny-Watrous Gallery in 1928 which sponsored concerts and art exhibitions in the Tudor building on the east side of Dolores between Ocean and Seventh. Through these and other galleries, the work of local artists found its way into the private and museum art collections all over the world.

3.2.3 Tourism

In 1902 when Carmel City was taken over by Frank H. Powers and John Franklin Devendorf, one of their first projects was to move the Hotel Carmelo, of which they had also taken possession, closer to the beach. The two-story, wood-frame structure was partially dismantled and rolled down Ocean Avenue on logs to Monte Verde where it became the core of the Pine Inn. Completed in 1903, the Pine Inn included a campground with tents to accommodate the overflow of customers during the summer months. With the depression over by this time, the two men began to promote the town, which they called Carmel-by-the-Sea, as a family-oriented community encouraging people with artistic temperament.

While Mission San Carlos continued to attract sightseers from around the country, Devendorf and Powers kept rates low at the Pine Inn in hopes of attracting visitors from San Francisco

or the inland valleys who might buy lots and build homes. While lots did sell, a significant number of early buyers were not interested in making Carmel their permanent home. Rather, many of the first lots in Carmel were developed as weekend cottages or summer homes by professors from Bay Area universities, particularly Stanford University and the University of California.

The emerging popularity of the automobile in the 1920s further enabled the public to indulge its zeal for travel. While the Pine Inn remained the *grande dame* of hotels in Carmel, several others soon joined it to keep up with the burgeoning tourist trade. The Carmel Development Company applied the same formula for success in the Carmel Highlands as it did in Carmel-by-the-Sea: they built a resort hotel as the hub for a housing development. Located south of Point Lobos, well outside of the city boundaries, the Highlands Inn became a favorite destination for honeymooners after it opened in 1917. The La Playa Hotel was also started in 1911.

3.3 Transportation

From the Spanish period, there were two routes between the mission and Monterey. The more direct main trail, described by surveyor George Tolman in 1872 as "the old road" from the mission to Monterey, passed over Carmel Hill and crossed the peninsula. By 1872, there was also a "wagon road" that roughly followed the route of the state highway. Another route was known as the beach trail. In 1888 Mexican and Chinese laborers were brought in to cut trees and clean the streets. Old ranch roads were the main routes through the wilderness in early Carmel, with Ocean Avenue serving as a secondary street to Broadway (now Junipero).

In 1888 the Southern Pacific Railroad surveyed a route west of the Monterey depot through Pacific Grove and around the point to the sand deposits, and for a time rumors flew that the line would be extended to the Carmel Valley and the coal deposits there. By July 1889 the SP line reached the sand deposits where it stopped, and despite periodic proposal to extend the line to Carmel, it never went farther, which dampened the prospects of Duckworth and other investors in Carmel City during the 1890s. Powers and Devendorf still had expectations the railroad would be extended to Carmel at the time they made their investment in Carmel-by-the-Sea.

During this period, the Monterey Development Company provided tours of the mission by horse and wagon. In the early 1900s, the Coffey brothers had a livery stable in Carmel and provided hired rigs for sightseers. They also ran stages to and from Monterey from the stage stop in front of the Hotel Carmelo. The Carmel Development Company also ran stages to pick up visitors and prospective buyers from Monterey and the Del Monte Lodge. Joseph Hitchcock worked for Devendorf as a surrey driver. From 1911 to 1916, he drove a four-horse stage from the train depot in Monterey to Carmel. In 1912 Charles Goold took delivery of two sixteen-passenger buses, eventually buying out the Coffey and Hitchcock operations. Additional bus services were provided by Fred Wermuth, who had a 12-passenger bus in

1919. These companies continued to expand until replaced by the Greyhound service and Joe's Taxi in 1930.

With the increased popularity of automobile travel, blacksmith shops, except for The Forge in the Forest which lasted until 1964, and livery stables gave way to gasoline stations and auto service facilities. Determined to maintain the rural appearance of the village, early residents and city fathers resisted paving city streets. The Carmel-Monterey Highway was paved in 1916, and Ocean Avenue was paved in 1922.

3.4 Associated Resource Types

3.4.1 Identification

Properties associated with the context of Economic Development (1846-1940) include:

1. Properties associated with agriculture and industry
   - Ranch houses and farm buildings
   - Fishing, Whaling, and Extractive Industries
2. Properties associated with business and tourism
   - Commercial Buildings
   - Hotels, Inns and Boarding Houses
   - Seasonal Homes
3. Properties associated with transportation

3.4.2 Description

Properties associatiedwith agriculture and industry

Ranch Houses and Farm Buildings. Few resources remain in Carmel that are associated with the area's early agricultural history. This resource type includes ranch houses, barns, other outbuildings, water towers and windmills. As the oldest remaining residential structures in Carmel and due to their association with the rancho period of Carmel's history as well as their connection with Frank and Jane Powers, the Murphy-Powers Residence and Barn/Studio have been designated as landmarks under Carmel's Historic Preservation Ordinance. Other ranches in Carmel's sphere of influence include the Martin's Mission Ranch, the Hatton Ranch, the Victorine Ranch behind the Bay School at San Jose Creek, and Palo Corona, today the Fish Ranch.

Fishing, Whaling and Extractive Industries. Although not located in the City of Carmel, there is a residence built by Chinese fishermen at Whalers Cove, which houses the Whaling Station museum. It is unlikely that any resources associated with the fishing industry in Carmel Bay are located in the City of Carmel.

Likewise, few if any resources associated with quarrying and mining activities in the area

would be located within the boundaries or the sphere of influence of Carmel. Little is known of the silver mining activities near Mission San Carlos. Evidence of mine shafts have been discovered. It is therefore possible that there may be some subsurface evidence of silver mining activities in the vicinity of the mission and in the Walker Tract near Junipero Avenue and Rio Road.[12]

The brick kilns of the Plaza Fuel Company and buildings associated with the Thermotite concrete block operation still exist near Santa Fe and Third, but are no longer in operation. If further research and study does reveal the existence of resources associated with local industrial activities, they might be considered as significant.

Properties Associated with Business and Tourism

Commercial buildings. Most of the historic commercial buildings (those built prior to 1940) are located on Ocean Avenue between Sixth and Seventh avenues and between Mission and Monte Verde. They consist of primarily of two story reinforced concrete and wood frame buildings in a variety of architectural styles with retail and/or gallery space on the ground floor and office space and artist's studios on the upper floors.

Hotels, Inns, and Boarding Houses. Tourist accommodations have played an important role in the economic development of Carmel since the days of the Hotel Carmelo and Carmel City. In fact, a business census of the community in 1956 listed forty-six such establishments. Built during all periods of Carmel's development, hotels, inns, and lodges reflect a wide range of architectural preferences.

Many times older structures were remodeled to serve as inns. Built in 1929, The Cypress Inn, formerly called La Ribera Hotel was built specifically for the purpose of lodging. Oakland architects Blain and Olsen were responsible for its Spanish Colonial Revival design, highlighted by a lavish stucco entry, tower, generous use of tile, and a flower-strewn patio.

On the other hand, the La Playa Hotel began in 1903 as the home and studio of Chris Jorgensen and was converted to hotel use after the tragic drowning of Mrs. Angela Ghiradelli Jorgensen in 1911. The house was designed around a two story stone tower with gable-roofed wings extending west and south. In 1921 more rooms were added, but in 1924 it was almost completely destroyed by a fire. The Godwins, who had also been associated with the Pine Inn, rebuilt the hotel, retaining some of the original stonework, and added 30 rooms in 1925. Subsequent additions increased the room count substantially. This hotel is now listed by the National Trust as a Historic Hotel of America.

Likewise, the Holiday House was originally the home of Stanford professor Guido Marx. Built in 1905, it was sold to Basilicio Jesena who converted it into the Holiday Inn in 1926. It was renamed the Holiday House in 1929 when it was taken over by Isabel and Mary Smith. The Sea View Inn at Camino Real and Twelfth, built in 1905, was owned and run by the Stout sisters.

Many of the local residents opened their homes during the summer season for boarders, such as Professor Vernon Kellogg on Casanova between Ninth and Tenth streets. Some residents added guest cottages to accommodate extended family and summer visitors. Many of these homes later were expanded to become full-time inns, as were Edgemere Cottages and the Green Lantern.

Seasonal Homes. Carmel's identity as a vacation or part-time destination originated in the Carmel City era and continued past World War II into the present. A substantial percentage of homes in Carmel are still only occupied or rented for part of the year. In most ways, these houses are indistinguishable from year-round homes, except perhaps for an increased tendency towards informality, simplicity and outdoor orientation leftover from the early days.

Properties associated with transportation

Resources associated with pre-automobile transportation activities would include early trails and roads, blacksmith shops, livery stables, stage stops. The Mission Trail exists in part from the Carmel Mission north, probably to old Highway 1. Oliver Road is the old road to Carmel Valley. This resource category would include the Forge in the Forest, and the stage stop at the Goold Building at San Carlos between Ocean and Sixth. Charles Goold also owned a garage at the southeast corner of Ocean and San Carlos which later became the Standard Oil Station and is now a clothing store.

With the advent of the automobile, associated resources would include early service stations, garages, car dealerships, taxi companies, and bus depots, such as the first depot built by Jon Konigshofer on the north west corner of Junipero and Sixth. Existing resources include the Texaco (now Shell) Station at the corner of San Carlos and Fifth, the Richfield station on the southwest corner of Seventh and San Carlos, and Miller Harris' Shell station. Levinson's Automobile Agency was located at Dick Bruhn's on the southeast corner of San Carlos and Ocean.

3.4.3 Significance

Due to their relative scarcity, any properties associated with the agricultural and industrial economy would be considered significant resources. Agricultural resources usually existed in complexes of several types of functionally related structures. Generally the more privotal buildings in the complex such as barns and farmhouse would have a greater significance than sheds and other ancillary resources.

Properties associated with business and tourism exist in abundance throughout Carmel. Significant examples should retain a high degree of integrity. Significance would be enhanced by association with prominent members of the business community and with specific businesses or business types that were privotal in the town's economic development.

Due to relative scarcity and the importance in respresenting the continuum of development within this context, pre-automobile transportation resources would have a high degree of significance. Due to the prevalence of adaptive reuse, there would be a lower level of integrity expected for these resources. Significance of resources within this context would be enhanced by association with individuals that played important roles in the development of the Carmel business community or promoted tourism in the area.

4.0 Government, Civic and Social Institutions (1903-1940)

4.1 Civic Development and Incorporation

In addition to assisting with the early formation of community and cultural institutions, James Devendorf also acted as the unofficial mayor, resolving disputes between residents. Ultimately, however, he could not create the kinds of ordinances or regulations necessary to control development or shape public improvements. A group in favor of cityhood circulated a petition for incorporation in October 1916. The County Board of Supervisors approved the petition and scheduled an election for October 26. There were 199 votes cast with 113 in favor and 86 against. At the same time, the first Board of Trustees was elected. There were five members in total with two holding two year terms and three holding four year terms. The board then elected a president to a two year term. The charter members included A. P. Fraser, president, Peter Taylor, G. F. Beardsley, E. K. DeSabla and D. W. Johnson. In addition, Louis Slevin was elected treasurer and J. E. Nichols was elected as clerk. In 1920 Saide Van Brower was elected City Clerk. Serving until 1942, she started and kept the only city building records. The position of City Clerk became elevated to City Administrator when Hugh Bayliss was promoted in 1968. In 1978 the system was slightly modified when the office of Mayor was changed to a publicly elected position. William Askew, Sr. was superintendent of Public Works for thirty years. Also employed by the city, William Askew, Jr. also served as the superintendent of Public Works for thirty years.

In 1917, the first official City Hall was located in the Philip Wilson Building on the northwest corner of Ocean and Dolores. In 1927, City Hall was located upstairs in the Oakes-Mitchell Buildings on the west side of Dolores between Ocean and Seventh. It moved again in 1846 1946 to the old All Saints Episcopal Church on the east side of Monte Verde between Ocean and Seventh. The Department of Public Works was located in the little green building on the southwest corner of Mission and Seventh with the Police Station. In 1966, the new Public Works/Police Station, located on the east side of Junipero between Fourth and Fifth, was dedicated.

From the beginning there has been general agreement among Carmel residents for slow growth and preservation of the residential character of the village. One of the first city ordinances prohibited the cutting down of trees on public land. Determined to keep the rural setting, residents also fought the introduction of paved streets, mail delivery, and electricity. Public improvements and development continued, but not without controversy. Even the

paving of Ocean Avenue, which did not occur until 1922, was so hotly debated that the issue had to be resolved in court. Another battle raged over the development of the Dunes, a stretch of beach at the foot of Ocean Avenue. A resort hotel planned for the site was defeated when a group of residents successfully persuaded Devendorf to sell the land to the city for $15,000. Citizens voted four to one in favor of its purchase.

Another hot issue was the bathhouse on Carmel beach. The bathhouse, constructed in 1889 for the Women's Real Estate Company by Delos Goldsmith, served Carmel with dressing rooms and towels, had a tea room, and served as meeting place and a site for wedding receptions. The City of Carmel purchased the building in the 1920s. However, the cost of upkeep and the potential for lawsuits should someone drown while using the life rope which extended from the bathhouse to the ocean, led many to question ownership of the property. The bathhouse was sold in 1929, and later demolished.

Battle lines over such issues were usually drawn between the art and business factions in the community. Perry Newberry became one of the central leaders of the art faction. Newberry had come to Carmel in 1910. Formerly on the art staff of the *San Francisco Examiner*, he became the assistant editor of the *Pine Cone* and later its owner until he sold it in 1935. He was first inspired to run for public office in response to a proposal to construct a city hall, an idea he opposed. He successfully ran for the Board of Trustees in 1922 and fought to preserve the unique and rural quality of Carmel. He promised the voters:

> Believing that what 9,999 towns out of 10,000 want is just what Carmel shouldn't have, I am a candidate for trustee on the platform, DON'T BOOST. I am making a spirited campaign to win by asking those who disagree to vote against me.

DON'T VOTE FOR PERRY NEWBERRY:

> If you hope to see Carmel become a city.
> If you want its growth boosted.
> If you desire its commercial success.
> If concrete street pavements represent your civic ambitions.
> If you think a glass factory is of greater importance than a sand dune, or a millionaire than an artist, or a mansion than a little brown cottage.
> If you truly want Carmel to become a boosting, hustling, wide-awake, lively metropolis,

DON'T VOTE FOR PERRY NEWBERRY.

4.2 Public Services

Carmel's early residents organized to provide themselves with local public services and utilities long before the community was incorporated. In addition to the more frequently recognized services discussed below, other important community infrastructure basics include sanitation and disposal services.

4.2.1 Communication

The history of postal service in Carmel began in 1889, when leather mail pouches were hauled over the hill from Monterey to a small building in Carmel Valley known as the White Oak Inn. This arrangement was discontinued in April 1890. This post office was re-established in 1893, and there was an abortive attempt to move it in September 1903. At this time, Frank Powers traveled to Washington, D.C., where he successfully lobbied to have Carmel made the official post office for the area. The Carmel post office was finally established in December 1903. The first mail carrier was A. F. Horn, who carried the mail between Carmel and Monterey on a one-horse wagon, along with baggage express and passengers. Charles Goold, who owned a local stage and hauling company, eventually earned the contract to bring Carmel mail from Monterey. Mail was distributed from Devendorf's office at the general store and Devendorf's brother-in-law, Mr. J. P. Staples, handed out the mail. Mr. Williams, proprietor, acted as post-master until Louis Slevin had been a resident of Carmel for one year. Beginning with eight boxes, Slevin was Carmel's first official postmaster, a position he held from 1904 to 1914. Slevin was followed by L. Payne, and Stella Vincent was postmaster from 1918 to 1929. Subsequent post office locations include Dolores near Seventh, where it moved in 1922; the southwest corner of Ocean and Mission in 1934; and the second from the northeast corner of Dolores and Sixth. Since there was never door-to-door delivery, the post office, now located at the southeast corner of Fifth and Dolores, was, and still is, a favorite spot to meet and chat with friends.

In the early days, Carmel residents devised a unique method of communication, described by Daisy Bostick and Dorothea Castelhun in *Carmel at Work and Play.* On an old board fence on Ocean Avenue, residents and visitors posted lost and found notices, announcements of meetings, help-wanted signs, advertisements, and bits of world news. One enterprising individual attached a pad of paper and a pencil with the command, "Leave your orders for wood here." As the village developed, the bulletin board found new sites. It remained a community institution until recent years.

It was often said, "If you don't hear about it on a trip to the bulletin board or the post office, you'll read it in the *Pine Cone.*" The *Pine Cone* was established in 1915 by William Overstreet. An ex-San Francisco news reporter, clerk and correspondent, he dreamed of owning his own newspaper. Beginning on a shoestring with a second hand press in the room behind the post office, the *Pine Cone* became the voice of the village. Although the newspaper has changed hands several times over the years, it continues today as Carmel's primary news organ. There have been numerous competitors and other local news publi-

cations; however, none outlasted the *Pine Cone*. Examples include the *Carmel News* from 1914-1917; the *Carmelite* co-founded by Lincoln Steffens, lasted from 1925-1931; the *Village Press* from 1926 to 1935; and the *Village Daily* published from 1930 to 1935, to name a few.

The first telephone service in Carmel was the Sunset Telephone Company, established in 1903. The Carmel Telephone Exchange was established in 1913 in a section of Blood's Grocery on the corner of Ocean and Lincoln, with 35 customers. On April 13, 1917, a two-party telephone line was ordered by Carmel's city government, one for the residence of the city marshal and one for the office of the clerk in City Hall. By 1928 there were 880 subscribers in the village.

4.2.2 Utilities

As in most frontier locations, water for domestic use was originally provided by individual wells. Windmills and tank houses were common components of rural settlements during the early American period. In 1888, Wesley Hunter and his uncle Delos Goldsmith carried water from the Carmel River until a good well was dug. The first well in the city was on Carpenter near Ocean, but was too alkaline. The second, "Mary's Well," was at Guadalupe and Fifth. Water was piped to a windmill on Ocean Avenue where a tank supplied the Hotel Carmelo.

The Pacific Improvement Company constructed the first unit of the water system when they piped the spring at the head of Laguna Grande, which proved unsuccessful. The first reliable water was supplied by a pipeline from Carmel Valley, built to supply water to the Del Monte Hotel in Monterey and Los Laureles Lodge, a spa in Carmel Valley. Water was supplied from the original San Clemente Dam built by 700 Chinese laborers in 1882-1883 under the supervision of William Hatton. After the dam was completed, a pipeline was constructed to a new reservoir in Pacific Grove. The Pacific Improvement Company laid a pipeline down Ocean Avenue. Those not connected to the pipeline drew water from the line and hauled it in barrels. The Carmel Water Works had a large holding tank during the early days, and there was a public water trough at Ocean and San Carlos.

In 1905, the Carmel Development Company installed its own water system, with a pump at the river to bring water into a large tank at Ocean Avenue and Mountain View. Horse drawn barrels allowed water to be brought to higher elevations. Later, the Monterey County Water Works took over water distribution. In 1935, the Monterey County Water System was owned and operated by the California Water and Telephone Company, a private corporation serving Monterey, East Monterey, Del Monte, Carmel, Pebble Beach, and various Carmel Valley locations. Cal-Am (California-American) now supplies water to Carmel.

Electricity may have come to the area as early as 1894. Monterey Electric Light and Development Company organized in 1891 and extended lines into Pacific Grove in 1894. However, Sharron Hale and other long time residents agree that electricity did not arrive in Carmel until 1914. In the early days, the merchants and developers in Carmel-by-the-Sea

agreed that the village should grow slowly and gas and electricity should be "forbidden." Gas service finally arrived in Carmel in 1930.

4.2.3 Health Care

Carmel's first health care institution was a sanitarium operated by Dr. Himmelsbach. Opened in 1902, the Pine Sanitarium was located in his parent's home on the northeast corner of Dolores and Ninth. A second facility, Carmel Hospital, was established in 1927, the brainchild of Edith Ballou Shuffelton, a graduate of the nursing school at Stanford. Shuffelton persuaded individuals to donate funds for a facility to meet the general medical needs of the community. Located in Carmel Woods, the hospital was designed by Robert Stanton and built by Michael J. Murphy. In a matter of a few years, however, the facility proved to be inadequate. The equipment was sold to the Monterey Peninsula Community Hospital and the building converted to the Forest Lodge apartments.

The Metabolic Clinic was founded in 1928 by Grace Deere Velie Harris. This clinic conducted research on the blood disease from which Harris suffered. Unfortunately, Harris died before the facility was completed in 1930. The Clinic was dissolved in 1934 and the structure became the Monterey Peninsula Community Hospital on Highway 68. Community Hospital had formed in 1934 and was located in the former Metabolic Clinic on Valley Way and Highway 1. When Community Hospital moved into its modern facility outside of the Carmel city limits, the building was transformed into a convalescent home (currently the Carmel Convalescent Hospital).

4.2.4 Fire Department

A group of twenty citizens, led by Robert Leidig, established a volunteer fire department in 1908. Equipment was stored in a tent on the southwest corner of San Carlos and Sixth and in a garage still standing at Santa Fe and Fourth streets. The Citizen's Fire Protection Committee organized to raise funds for a proper fire engine and a permanent fire company in 1915. The equipment was kept in a building contributed by the Carmel Development Company. When the city incorporated the following year, the fire protection service became the responsibility of the city. In January 1917, the Fire Protection Committee reported to the City Council that the Monterey County Water Works would lay six-inch drain pipes down Ocean Avenue to Monte Verde, then down Monte Verde to Twelfth with necessary fire hydrants. In 1920, John Jordon, owner of the Pine Inn, donated the shed which housed McDonald's Dairy on Sixth between San Carlos and Dolores. Moved in 1936, this building is now at the old Thermotite site on the west side of Santa Fe and Third. Through the approval of a bond and a federal Works Project Administration grant, money was raised for a new firehouse in 1936. Completed in 1937, the new firehouse designed by Milt Latham was constructed of poured-in-place concrete faced with Carmel stone.

4.3 Educational and Religious Institutions

The Carmelo School District was established in the 1850s and served all the families in the Carmel Valley and beach area. The Bay School was established in 1879 on Joseph Gregg's ranch at the mouth of San Jose Creek. The Sunset School, founded in 1904, was the first and only public school established in the village of Carmel.[13] Children first attended classes in Delos Goldsmith's shed with Mary Westphal as teacher. Increasing enrollment, however, created a need for larger quarters. Classes were temporarily moved to Michael J. Murphy's lumber yard while plans were drawn for a two-room school house on the southeast corner of Ninth and San Carlos. Completed in 1906, the Mission Revival style building held forty-eight students in eight grades during its first year. In late 1931, additional classrooms and an auditorium were built to accommodate the growing student body. During this time, older students attended high school in Monterey or Pacific Grove. In 1938, the Sunset School District seceded from the Monterey Union School District. That same year a bond was issued for the construction of Carmel High School. Designed by Hugh Comstock, the high school was completed in 1940.[14] The high school is located across Highway 1 outside of Carmel's city limits. Miss Emma Williams taught a private school at two sites from 1906 through the 1930s.

As was the case with many early community institutions in Carmel, the first libraries were located in private homes. Mrs. Helen Jaquith operated the first library in Carmel out of her cottage.[15] Beginning in 1904, she would receive books as gifts in exchange for lending privileges. The following year the Carmel Free Library Association was formed. The group, led by Frank Powers, dedicated itself to establishing a permanent public library by sponsoring fundraising events, expanding the collection of books, and attracting new members. In 1911 the group changed its name to the Carmel Library Association. Shortly thereafter, the Carmel Development Company donated a building for the library at Lincoln and Sixth. The box-like building resembled many of the small cottages built in Carmel during the period. Clad with shingles, it was capped by a hipped roof with flared and extended eaves. The facade featured a central door flanked by bay windows. As the books in the library began to exceed capacity, funds were raised to purchase the adjacent lot. In 1921, the existing building was relocated diagonally across Sixth Street, presumably to provide space to construct larger facilities. After the new library was completed, the old library building was remodeled for use by the Girl Scouts.

Ella Reid Harrison can be considered the most generous supporter of Carmel's library. Harrison bequeathed a large portion of her estate, including bonds, land, books and furniture, to the city on the condition that they be used to build a public library in memory of her late husband. Designed and built by Michael J. Murphy in consultation with Bay Area architect Bernard Maybeck, the Ralph Chandler Harrison Memorial Library was completed in 1928. Located at the northeast corner of Ocean Avenue and Lincoln, the building is designed in the Spanish Colonial Revival style. The L-shaped plan consists of two wings, one facing west and one facing south. Characteristic of the style, the cross-gabled roof is covered with red tile, and the exterior walls are finished with smooth stucco. Arched, multi-paned windows allow sunlight to flood into the reading room in the south wing. The building was modernized in 1949 and 1976.

As Carmel was originally envisioned as a religious retreat for Catholics, it is not surprising that churches were some of the first community institutions to form. After the mission was re-dedicated in 1884, Catholic services were once again held there. Other religious denominations in Carmel which can trace their roots back to the turn of the century include Christian Scientists, Methodists, and Episcopalians. These early congregations often held services in hotels, private homes, or out-of-doors.
In 1903, a group of Christian Scientists began to meet at the newly-built Pine Inn. That congregation eventually disbanded, but Christian Scientists continued to meet in each others' homes on a more informal basis. Organized meetings commenced again in July 1913 in the Arts and Crafts Hall on Casanova Street between Eighth and Ninth avenues. The First Christian Scientists Society of Carmel incorporated in 1917. The following year a church was dedicated. In 1936 a reading room was established on Ocean Avenue.[16] The congregation relocated to a new building at Monte Verde between Fifth and Sixth avenues in 1950.

Methodists in the area began to meet under the trees on the corner of Dolores and Sixth in 1904. James Devendorf hired the Reverend George Clifford as pastor of the congregation, and donated two lots on Lincoln near Ocean for a Mission Revival style church which was dedicated in 1905. As the congregation grew so did the need for larger quarters. In 1926 Michael J. Murphy constructed a new room for Sunday services, a kitchen, and a recreation hall. In 1940 the name of the church was changed to the Carmel Community Church, and a new building at Lincoln and Seventh was dedicated. Designed by Robert Stanton, the new church was a single stuccoed mass under a front-facing gabled roof. The name of the church changed again in 1947 to the Church of the Wayfarer.

An Episcopalian congregation had been meeting at various locations since 1907. In 1910 the Reverend E.H. Maloney, the rector of St. Mary's-by-the-Sea in Pacific Grove, began to hold services in the basement of the Pine Inn. Soon a committee was created to raise funds for a church. Devendorf donated two lots for the church that later were exchanged for ones on Monte Verde. Completed in 1913, All Saints Church was designed by Albert Cauldwell, a San Francisco architect, and built by Michael J. Murphy. Eventually, Reverend Darwell was hired as the full-time minister. In 1946 the congregation built a new church at the southwest corner of Dolores and Ninth, and the old church was purchased for use as City Hall.

"White Cedars," the home of Mrs. M. E. White on the corner of Ninth and Dolores was the site of the founding of the Carmel Missionary Society in 1907 by the auxiliary of the San Jose Presbyterian Society. The Missionary Society built a chapel in 1911, which it occupied until 1951. Located on the southeast corner of Dolores and Eighth, the chapel was also used by the local Chinese. White Cedars was purchased by All Saints Church in 1946, when it was moved to become the home of Rev. Seccombe, All Saints' new pastor.

4.4 Social and Recreational Institutions

From its earliest days, Carmelites took their playing very seriously. Undoubtedly, the informal atmosphere, the pleasant weather, and the beautiful scenery promoted the casual lifestyle and the enthusiastic participation of the residents in a wide variety of social and recreational activities. In 1911, James Devendorf in the Carmel Development Company brochure extolled the opportunities for swimming, fishing, hiking, and riding in the area. Local shopkeepers felt free to put up a "gone fishing" sign anytime the mood struck. In addition to fishing, swimming, and picnics on the beach there were also more organized opportunities for recreation. Many of the social and recreational activities were organized by the churches and schools. Also there were art associations and music and drama organizations that played important roles in the social life of Carmelites. Many of these organizations also contributed to the arts and cultural development of the community, and will be discussed in Chapter 6.

The Bathhouse, completed in 1889, was probably the first of the recreational institutions constructed in Carmel. Besides providing towel and suit rentals to sea bathers, it was the site for many club meetings, dances, and church outings. In 1906, James Machado opened the Carmel Bowling Alley on Ocean Avenue, which also offered "Pool, Cigars, and Tobacco." Formed in 1905, the Manzanita Club was responsible for bringing the first moving pictures to Carmel in 1916. The club was incorporated in 1925 and the club house was constructed in 1926. The Manzanita Club was responsible for many plays, outdoor athletic events, and a summer camp.

The Arts and Crafts Club sponsored festivals, parades, street fairs, and fund raisers such as the Dutch Market and Sir-Cuss Day. These events were enjoyed by all segments of the community—artists, writers, craftsmen, business owners, police and firemen, and their families.

Carmel's first and only golf course was located south of the village on Point Loeb (Carmel Point). Designed by Philip Wilson, who settled in Carmel in 1905, the golf course was abandoned during World War I. Wilson also kept a fleet of 20 rowboats that he rented to tourists during the spring and summer months. After the first World War, informal softball games were organized and played at a rough field on Carmel Point near Inspiration Avenue. The games led to the formation of the Abalone League in 1921, the first softball league in the western United States. Whole families joined in the Sunday double-headers. League rules required that at least one woman and one child be on each team. In time the league moved its games to Tortilla Flat in Carmel Woods at a triangular shaped area bordered by Camino del Monte, Serra, and Portola. The league lasted until 1938.

Clubs organized for young people included the Carmel Boys Club, the Boy Scouts, and the Girl Scouts. The Boy Scouts in Carmel began with a visit from Sir Baden-Powell in 1910. Baden-Powell stayed at the Presidio of Monterey and bivouacked with a group from the presidio and some of the members of the Boys Club of Carmel. All the boys and their leader,

John Neikirk, became official scouts, with the help of Douglas Greeley, Sr. and Fred Leidig. The Scouts raised funds to build a clubhouse at Mission and Eighth. The clubhouse was built M. J. Murphy. Organized by Mrs. Eva Douglass in 1922, Carmel's Girls Club specialized in cooking and other homemaking activities. In 1923, this group officially became Carmel's first Girl Scout Troop.

Nurtured for many years by artists Josephine Culbertson and Ida Johnson, the Boys Club provided opportunities for boys to learn parliamentary law, hear interesting talks from learned men who were visiting in the area, as well as hiking, camping, and picnics on the beach.

4.5 Associated Resource Types

4.5.1 Identification

The following property types have been identified with the context of Government, Civic and Social Institutions:

- Properties associated with civic and public services
- Schools and churches
- Social and recreational property types

4.5.2 Description

Properties associated with civic and public services

This property type includes buildings and other resources that have served public functions. Examples may include buildings that served as City Hall, post offices, library, police department and firehouses. Also included here would be other resources that represent public works and services. Resources associated with this theme also include the homes of individuals who played significant roles in civic affairs or were employed in positions that influenced the development of the city. Such individuals would include, for example, mayors and council members, city attorneys, the Chief of Police, Fire chief, postmaster or mistress.

Newspapers also played an important role in civic development. The *Pine Cone* has had a continuing role in reporting local events, as well as taking editorial stands on the development of community character. Competing, although shorter lived, newspapers were important in that they often presented views in opposition to the *Pine Cone's* editorial position on civic issues. Resources include not only buildings where newspapers had their offices and printing facilities, but also the homes of newspaper editors or publishers.

Utilities, whether private or public, are resources associated with this theme. Resources that represent the development of water management, electrical and gas service, and waste

management are important in the full understanding of a community's history. Resources associated with the development of communication include telephone and telegraph services, as well as post offices and newspapers.

Health care is also an important aspect of community development. Associated resources include hospitals, clinics, sanitariums. Resources also include the homes or offices of prominent local physicians, dentists, and other types of health care providers.

Schools and churches

A number of schools and churches were established in Carmel before 1940. Resources in this category include surviving residences or buildings that were used as schools, as well as buildings specifically constructed to serve as private and public schools. Also included are resources that represent particular developments in the history of local education, such as kindergartens, nursery schools, the Arts and Craft summer school programs. The Sunset School, opened in 1906 and now part of the Sunset Center, is a significant resource associated with this theme.

Churches and resources associated with religious institutions include Mission San Carlos, previously discussed in Chapter 2, as wells as churches established since 1903, such as the Christian Science Church, All Saints Episcopal Church, the Church of the Wayfarer and the Presbyterian Church. In addition to church structures, buildings that served other religious functions or served as residences for the pastor should be considered under this property type.

Social and recreational property types

The people of Carmel led active social lives and were involved in a variety of community activities. This property type would include buildings that served as club houses or that were associated with important social events that are not included under other contexts. This property type would also include resources associated with recreational and athletic activities. Certainly, this would include any extant resources associated with the Abalone softball league.

4.5.3 Significance

From its inception the residents of Carmel were active in the civic, educational and social life of the community. Property types associated with this theme are important in reflecting this aspect of the community's character. The significance of these resources would depend not only on the association with significant aspects of community life and its high degree of integrity, but also on the quality of the impact the activity had on the social life of Carmel residents.

5.0 Architectural Development in Carmel (1888-1940)

5.1 Environmental and Cultural Influences on Architecture

Carmel is located in the angle formed by two ranges of hills, one running in a generally east-west direction, forming the backbone of the Monterey peninsula, and the other at a right angle to it, forming the natural barrier between the Carmel Bay and the Carmel River (Rio Carmelo). In this angle a forest of pine trees has grown. East of the town along the Carmel River lies the Carmel Valley, a strip of rich alluvial soil thirty miles long and from one-half to two miles wide. West of the town is the Pacific Ocean, the water of which is rarely colder than fifty-five degrees nor warmer than sixty-five degrees. The Carmel Valley acts as an equalizing factor by furnishing currents of warmer or cooler air whenever the land and ocean temperatures differ. For that reason Carmel's temperature is moderated to a range of twenty degrees lower or higher than the ocean's temperature.

Carmel as viewed by Spanish explorers or even as observed later by European settlers differs significantly from today's landscape. The most obvious sign of human intervention, of course, is the town itself. Devendorf inherited Duckworth's county-approved map of Carmel City with its conventional grid pattern. He continued to use it, but did not hesitate to curve roads around trees or topographical features in later additions. His respect for the natural environment was in contrast to many developers who flattened hills and cleared trees. Devendorf also encouraged the planting of trees so much that an illusion has been created of an area more wooded than it was originally. A reporter for the *Oakland Tribune* described how Devendorf "drove up and down and crosswise in a buggy drawn by a white horse, planting trees as he went along. When he sold a lot, he threw in a few trees for good measure. If he actually got cash for the lot—which rarely happened—the buyer might have had a whole grove presented to him as a bonus."[17] Early photographs show open meadows or coastal scrub with few trees west of Monte Verde except in natural canyons or near water courses. The efforts of Devendorf and others who followed have created a more forested character for Carmel-by-the-Sea.

The other important influence in the development of Carmel was the Arts and Crafts Movement. A reaction against the impersonal production of the Industrial Revolution and the loss of pride of craftsmanship, the movement had its roots in England during the last half of the nineteenth century reaching its zenith in 1888 when the Arts and Crafts Exhibition Society was founded in London by the young members of the Royal Academy. These individuals were frustrated by the institutional definition of art in terms of the fine arts only, relegating the applied and decorative arts to a position of second place.

In the United States, the Arts and Crafts Movement gained momentum from the 1893 Colombian World's Exposition in Chicago, which preceded an expansion of trail-blazing developments in building techniques. After 1893 dozens of arts and crafts societies were formed across the nation. The years between the Pan-American Exposition and the outbreak of World War I, 1901-1916 are often referred to as the "Craftsman Movement." The

movement was named after the *Craftsman* magazine, which was the voice of a generation of designers who established a severe geometric style of furniture and ornamentation and the rise of the Prairie school of architecture. Architecture in California, moving away from the Queen Anne style of the late Victorian period, was seeing the influence of young eastern architects. Ernest Coxhead and his young protégé, Bernard Maybeck, were designing simple, shingle-clad houses in San Francisco and Berkeley. Dedicated to the work of Maybeck, Charles Keeler wrote in *The Simple Home* in 1904, "The ideal home is one in which the family may be most completely sheltered to develop love, graciousness and individuality, and which is at the same time most accessible to friends, toward whom hospitality is as unconscious and spontaneous as it is abundant."[18] This statement surely describes Carmel's architecture and society during this formative period.

5.2 Geographic Development and Expansion

As related in Chapter 3, Carmel City was the vision of Santiago Duckworth who purchased part of Las Manzanitas Rancho from Honoré Escolle in 1888. Located in the northeastern portion of Carmel-by-the-Sea, Duckworth subdivided 164 acres bounded by Monte Verde, Pescadero Canyon and First Street, Monterey Street, and Ocean Avenue. In 1902, Devendorf and Powers took over the unsold land from Duckworth and formed the Carmel Land Company, which re-subdivided the Carmel City tract. Powers also bought up a number of adjoining tracts owned by Honoré Escolle, V. D. Moody, portions of the Mission Ranch from the Martin heirs, the P.H. Sheridan property, 702 lots from Dr. Saunders, and land previously owned by the San Francisco Pacific Glass Works.

The early subdivision maps greatly influenced the later character of Carmel. The grid overlaid slope, canyons, and forests with the long axis of the blocks offering the small lots exposure to the sun which contributed to the popularity of residential patios and outdoor living. People often purchased multiple lots, and lot lines were adjusted to fit the topography and the trees. Drainage systems and street layout was all done in a non-urbanized, environmentally friendly way.

In the 1920s, many cities across the nation responded to the City Beautiful Movement by instituting city planning measures. Having formed a Planning Commission in 1922, Carmel was in the forefront of this movement. The original members of this commission were Dr. Alfred Burton, Susan Creighton, Tomas B. Reardon, Charles Sumner Green, and Jessie A. Botke. In 1923, the first rudimentary zoning ordinances were passed by the city. The city adopted its first comprehensive zoning ordinance on March 2, 1925, which was the first ordinance to prohibit most non-residential uses from the residential zone. At this time fewer than 500 cities in the county had adopted zoning ordinances and it was not until 1926 that zoning was upheld as constitutional by the U. S. Supreme Court. On June 5, 1929, a new simpler zoning plan was adopted that began with the now famous preamble by City Attorney Argyll Campbell: "The City of Carmel-by-the-Sea is hereby determined to be primarily, essentially, and predominantly a residential City wherein business and commerce have in the

past, are now, and are proposed to be in the future, subordinated to its residential character." This ordinance defined the commercial district and helped shape and sustain Carmel's unique character.

As the population of the town increased, the lands adjoining the original subdivisions were supplemented by a number of additions made between 1905 and 1922:

Addition #l, 1905, generally bounded by Monte Verde Street, Santa Lucia Avenue, San Antonio Avenue, and Ocean Avenue (formerly the Sheridan property)
Addition #2, 1916 (surveyed 1906), bounded by Mission Street, Santa Lucia Avenue, Casanova Street, and Twelfth Avenue (the northern portion of John Martin's Mission Ranch)
Addition #3, 1907, bounded by Monte Verde Street, Ocean Avenue, San Antonio Avenue, and Second Avenue (a portion of the Murphy ranch purchased by Powers in 1904)
Addition #4, 1908, generally bounded by Junipero Avenue, Third Avenue, Monte Verde Street, and a zig-zag line beginning at the intersection of Monte Verde and Second and continuing northeast in block increments to Alta Avenue
Addition #5, 1910, known as the Eighty Acres, generally bounded by Forest Road, Eleventh and Twelfth Avenues, Junipero Avenue, and Ocean Avenue
Addition #6, 1910, bounded by San Antonio Avenue, Santa Lucia Avenue, Scenic Road, and Eighth Avenue
Addition #7, about 1911, part of the Martin Ranch that included Point Loeb (Carmel Point), bounded by Carmelo, Santa Lucia, and Scenic Drive (outside Carmel's southern city limits)
Addition #8, 1922, generally bounded by San Antonio Avenue, Eighth Avenue, Del Mar Avenue, and Ocean Avenue

Other subdivisions included Paradise Park, between Forest Avenue and the City limits, which was subdivided in 1918 but remained undeveloped until the 1940s. Del Monte Properties opened the Carmel Woods area for development in the 1920s. The Walker Tract adjacent to the Eighty Acres was subdivided in the 1940s.

5.3 Builders and Architects

The tradition of designer-builders began with Delos Goldsmith, who was responsible for the construction of many of the buildings in Carmel before the turn of the century. However, M.J. Murphy and Hugh Comstock were responsible for giving Carmel its unique architectural character.

When Devendorf and Powers took over the development of Carmel, prefabricated cottages from San Francisco were offered as a low-cost housing alternative. After materials for one hundred cottages failed to show up in 1904, Devendorf hired Michael J. Murphy to take charge of the building for the Carmel Development Company. Murphy went on to become

the most prolific designer-builder in the history of Carmel, with the Pine Inn, Highlands Inn, La Playa Hotel, Sundial Lodge, Tor House, Harrison Memorial Library, several notable commercial buildings, and about 350 houses to his credit. It is estimated that about 80% of the homes in Carmel were designed or constructed by Murphy by the 1930s. Never a proponent of a particular style, Murphy designed buildings to suit his client's taste, often in currently popular styles. His earliest homes were late Victorian cottages and Craftsman bungalows. Born June 26, 1885, in Minden, Utah, Murphy first came to Carmel on visit in 1900. In 1914 he established M.J. Murphy Inc., an enterprise which sold building supplies, provided rock crushing services and concrete work, and operated a lumbermill and cabinet shop located between San Carlos and Mission. When Murphy retired in 1941, Carmel lost its first and most important master builder.

Hugh Comstock developed the "Fairy Tale" style with which Carmel has become closely identified. Born in Evanston, Illinois, in 1893, Comstock moved to Santa Rosa with his family in 1907. In 1924, he came to Carmel to visit his sister, artist Catherine Seideneck, where he met and married Mayotta Brown. The newlyweds decided to remain in Carmel where Mayotta had a successful doll-making business. Comstock's career as a designer-builder began when his wife asked him to build a cottage for her dolls. The "Doll's House" became the first of many Fairy Tale style cottages he would design and build. Several commercial buildings, including the Tuck Box on Dolores and the old Monterey County Trust on Dolores near Seventh (now the China Art building), remain as good examples of his work. Comstock also designed buildings in many of the traditional styles of the 1920s and 1930s. He also developed the post-adobe system of construction, which he described as "simplified adobe construction combining a rugged timber frame and modern stabilized adobe."[19]

Carmel's most famous resident architect, Charles Sumner Greene, who made significant contributions to California architecture in the early part of the century, moved to Carmel in 1916. Greene, along with his brother Henry Mather Greene, established the architectural firm of Greene and Greene in Pasadena in 1893. Together, the brothers developed and refined the Craftsman style of architecture into high art. When Daniel L. James engaged the Greenes in 1914 to design a home on a rocky bluff overlooking the Pacific Ocean south of Carmel, Charles Greene took charge of the commission. A year later he began a gradual withdrawal from the firm and eventually made Carmel his permanent residence. After building his own home and studio on Lincoln Street, Greene worked on commissions in Pebble Beach and the Fleishacker house in Woodside. He did the extensive remodeling of Spindrift, the Martin Flavin house in the Carmel Highlands, and on several homes in Carmel, since demolished. Greene also designed the War Memorial Arch on Ocean Avenue at San Carlos.

Robert Stanton was one of the few academically trained architects to practice in Carmel. A graduate of the University of California School of Architecture, he designed many notable buildings in the Monterey and Santa Cruz areas. He was born in Torrance, California, and worked for the architect Wallace Neff as a traveling superintendent until 1934. At that time,

he moved to Pebble Beach, having developed a liking for the area during his honeymoon at the Highland Inn twelve years earlier. Establishing his office in Carmel on the northeast corner of Lincoln and Ocean, his first local commission was the Salinas County Courthouse in 1935. He also designed sixteen hospitals and forty schools. His projects in Carmel include the Normandy Inn and All Saints Episcopal Church. His office later became Merle's Treasure Chest on the southeast corner of Lincoln and Ocean.

Other builders and contractors included Artie Bowen, George Mark Whitcomb, A.C. Stoney, Meese and Briggs, Percy Parkes, Fred Bigland, Lee Gottfried, and Donald Hale. Dene Denny and Hazel Watrous constructed seven houses in Carmel Woods. Most of the builder/designers lived in Carmel and were also active in other aspects of the village's development. Prominent architects who worked in Carmel include C.J. Ryland, who designed the Sunset Center, Milton Latham, Albert Farr, Mark Daniels, Guy O. Koepp, Bernard Maybeck, Willis Polk, and William Wurster.

5.4 Architectural styles

Carmel is essentially a residential community with single family homes as the most prevalent property type. Residential neighborhoods surround the business district and display a wide architectural variety due to age, aesthetic and architectural preferences, lot size, building siting, and the subordination of buildings to nature. No tracts of similar homes were constructed in Carmel, and no one block was constructed in a single period of time. A taste for simplicity, often articulated by the use of shingles or board-and-batten siding, transcends the divisions of time and architectural fashions. Other features which regularly appear regardless of architectural style include "Dutch" doors, which can be opened on the top and left closed on the bottom, and the use of the local chalkrock or Carmel stone for chimneys, paving, garden walls, and exteriors. An adjunct to many houses figuring prominently in the streetscapes of Carmel is a detached single or double garage, usually front-gabled, sided with board-and-batten, entered via an arched vehicular door, and set close to the street.

Many of the earliest homes built in Devendorf's and Powers' Carmel-by-the-Sea were one story cottages typical of turn of the century housing elsewhere in the country. A hipped roof and box-like proportions are the hallmarks of this genre. They could be sided with narrow or medium clapboard, shingles, or clear heart redwood board and batten. Typical features include bay windows on the front or sides, porches attached to the facade or tucked into one corner, and double-hung or fixed sash windows with decorative patterns of muntins in the smaller upper sash. Details of such cottages related them either to the Victorian era Queen Anne style, the Colonial Revival style (enclosed soffits, frieze and endboards) or the Craftsman style (exposed rafters in the eaves, tripartite windows). Turn of the century cottages of these types were built through the first decade of the twentieth century.

The Craftsman style was an expression of the philosophy of the Craftsman movement, the

American adaptation of the English Arts and Crafts Movement which had crystallized around William Morris in the second half of the nineteenth century. Popularized in this country by Gustav Stickley and his *Craftsman* magazine, and in California by the work of architects Greene and Greene, Craftsman homes were characterized by horizontality of proportions, seen in the spreading lines of low-pitched, overhanging gable roofs and informal building plans; reliance on the honest use of materials such as wood, brick, and stone and undisguised structural elements such as exposed beams, braces, and rafters for architectural beauty; and enjoyment of the natural setting through porches, outdoor spaces, and the clustering of windows into horizontal bands. The architectural precedents for Craftsman homes were the wood traditions of Japan and India, as well as past styles such as the American Colonial and the English Tudor. Typical features of Craftsman homes in Carmel include stucco or shingled siding, "L" or "U" shaped plans which enclose a patio, and windows—either sliding, hinged casement, or double-hung sash in operation—which are framed by extended lintels and sills. The heyday of Craftsman building in Carmel lasted from about 1905 into the early 1920s.

Both the aesthetic characteristics of the Craftsman style, and its philosophic underpinnings, which linked it to progressive political, social, and artistic movements in the early twentieth century, made it popular with Carmel's academic, literary, and artistic residents. The Craftsman style and the emerging popularity of architectural revivals, particularly those based on medieval England, set the stage for a burst of individualism and creativity in Carmel during the 1920s. Hugh Comstock, with his fanciful Tudor cottages, was the most visible manifestation of this period. Steep gables, decorative half-timbering set on stuccoed surfaces, and diamond-paned windows were some of the characteristics of this deliberately picturesque mode of design. Some builders expressed themselves through their choice of materials—clothing an entire building in bark or the local Carmel stone—while others whimsically combined features associated with several styles on a single home to create a unique and eclectic whole. For example, heavy wooden lintels that suggest adobe construction would be incorporated into a home whose other details were derived from an English manor.

In the 1920s and 1930s a taste for revivalism in architecture swept the country. The English, French, Spanish, Italian, and early American countryside were explored for architectural inspiration. This fashion coincided in Carmel with an increase in building of summer homes by the well-to-do, as well as with new demands for traditional amenities by year-round residents. Most of Carmel's larger homes date from this era. English homes were inspired by a variety of precedents. Tudor homes were usually stuccoed, half-timbered, and gabled. Cotswold houses mimicked thatched roofs with rolled eaves and shingled surfaces. English Revival homes could be sided with stucco, shakes, or even board and batten or Carmel stone and usually had at least one arched opening, often a front door. The French Revival could be distinguished from the English by the use of hipped roofs and the occasional incorporation of turreted bays. Spanish and Italian Revival houses adhered to the Mediterranean customs of stucco sheathing, tile roofs, and arched opening. American Colonial Revival homes could look to the Cape Cod tradition of New England, with side gabled volumes faced with

shingles and pierced by a symmetrical arrangement or neatly framed opening. Regionally popular styles such as the Monterey Revival, usually recognized by a second story balcony across the facade, or the Pueblo Revival, characterized by flat-roofed, cubic massing, were also occasionally attempted.

Like elsewhere in Carmel, commercial buildings in the business district also display wide architectural variations. Generally, buildings are one to two stories in height and form contiguous streetfaces, interrupted by frequent courtyards. Intercommunication between courtyards is possible in several places. Commercial uses occupy the ground levels, with upper stories used more frequently for office or residential space. Window boxes, decorative paving, and other urban design amenities are frequently employed.

The oldest buildings in the business district, although remodeled, retain features associated with the Italianate and commercial falsefront styles typical of late nineteenth and early twentieth century American "Main Street" vernacular. These include second story bay windows, double-hung sash windows, remnants of board-and-batten and tongue-and-groove siding, quoins, and paneled and glazed doors. The building housing the Carmel Bakery, located on the south side of Ocean Avenue, exhibits these characteristics. However, it was the construction which took place under the influence of the architectural revivals of the 1920s which left the most lasting imprint on the character of the business district. Both the Spanish Colonial Revival and the Tudor Revival were employed. Beyond the usual Spanish stylistic trademarks of stuccoed exteriors and tiled roofs, the Spanish styled buildings feature ornate wrought iron and carved wood detailing, generous use of colorful glazed tile for staircase risers, dados, fountains, planters, and backsplashes, patios and courtyards spaces, arcades, and towers.

5.5 Public and Domestic Landscaping

The garden was one of the most important contributions of the Arts and Crafts Movement to creating natural, unpretentious, and harmonious environments. According to the tenets of the movement, gardens were intended to express regional character, built from local materials and simple plants. There were meant to be used as outdoor rooms and places for growing productive plants. Ideally, the Arts and Crafts garden had an irregular path system through the landscape and conformed with the natural topography avoiding trees and natural rock outcrops. Bernard Maybeck and Charles Sumner Greene were important exponents of this type of garden.

The influence of the Arts and Crafts movement combined with the Carmelites' appreciation and enjoyment of the natural coastal environment is expressed in the prevalence of gardens, courtyards, and informally landscaped open space throughout the city. Most homes have some sort of outdoor living space, be it a paved terrace nestled between wings of the house or an area carpeted with pine needles set in amongst the trees. Pines, oaks, cypress, and other trees punctuate the lots, and flowers and vines grow, seemingly unchecked, on and around them. No front lawns or sidewalks separate the properties from the streets; rather, garden

fences of pickets, stakes, or stone blend in with the landscape. Since Carmel homes do not have addresses, signs with the owner's or the house's name are attached to fences, walls, or posts. Daisy F. Bostick and Dorothea Castelhun in their affectionate description of Carmel in 1925 state "The true Carmel garden knows no straight line nor conventional symmetry of arrangement."[20]

Public landscaping projects were promoted by Devendorf and Powers. Powers was a nature lover who took delight in planting trees in the village and often made gifts of seedlings to friends. Trees were not always planted in a random fashion, especially on commercial streets. In 1904, Devendorf had his Japanese work crew plant Monterey pine trees down the middle of Ocean Avenue and a boardwalk was built on both sides, affording some relief to shoppers from the dust in the summer and the mud in the winter. Two years later Scenic Road and San Antonio Avenue were planted with cypress trees. Devendorf also gave children a one-cent piece to plant seedlings.

In 1921, a group of prominent citizens lobbied the city to purchase 15 acres of dunes from James Devendorf to preserve it for the future. The price was set at $15,000 and the voters approved the purchase by the city. The purchase included the dunes and beach and Block 69, now Devendorf Park. For a considerable time Block 69 served a multitude of uses—polo field, horseshoe pit, campground, and fairground. Unfortunately, most of the time it was either a dust bowl in summer and a quagmire in winter. By 1928, it became apparent that beautification could be realized through the support of the clubs and organizations. The development of Devendorf Park was accomplished by the city in 1932.[21]

5.6 Associated Resource Types

5.6.1 Identification

Within the context of Architectural Development in Carmel the following resource types have been identified:

- Single family houses
- Commercial buildings
- Landscaping and public art

5.6.2 Description

Single family houses

Carmel has always been a residential community and has consciously resisted efforts to develop and urbanize in defiance of economic pressures. Therefore, a substantial percentage of Carmel's residential properties were developed prior to World War II and will constitute the bulk of the historically significant resources in the city. Described in detail in Section 5.4, architectural styles include the simple vernacular cottages from the earliest period,

Craftsman bungalows, and the revival styles popular during the 1920s and 1930s. Many Carmel residences also represent the work of notable architects and designer/builders.

Commercial buildings

Commercial construction which took place under the influence of the architectural revivals of the 1920s has left the most lasting imprint on the character of the business district; however, buildings that represent earlier building periods should also be considered for preservation. In 1903, the Carmel Development Company constructed the first "fireproof" commercial building of concrete blocks made to look like stone. Formerly the Carmel Development Company's office, the People's Market, and Holman's Hardware store, this building is still standing at the northwest corner of San Carlos and Ocean.

Both the Spanish Colonial Revival and the Tudor Revival styles are well represented in the business district. Beyond the usual Spanish stylistic trademarks of stuccoed exteriors and tiled roofs, the Spanish styled buildings feature ornate wrought iron and carved wood detailing, generous use of colorful patterned tile for staircase risers, dados, fountains, planters, and backsplashes, patios and courtyard spaces, arcades, and towers. Two courtyard complexes, Las Tiendas (1921) and El Paseo (1927), are among the best exponents of this genre of commercial construction which reached its acme in the 1920s in Santa Barbara. Other notable Spanish buildings include the China Art Center (1929) on Dolores and the Mediterranean Market (1932) on the corner of Ocean and Mission. Hugh Comstock's Tuck Box (1926-29) on Dolores symbolizes Carmel's love affair with the quaint and the picturesque to many visitors. Like his residential "doll houses," the Tuck Box employs steep gables with uneven rakes, rolled eaves, and a capricious combination of shingles, bricks, Carmel stone, stucco, and wooden half-timbering. Other Tudor Revival commercial buildings such as the southeast corner of Ocean and Monte Verde were more conventional in their use of half-timbering, vari-colored brick, and multi-paned casement windows.

Landscaping and public art

Regardless of building use, architectural style, or period of construction, Carmel's neighborhoods reflect a love of nature, expressed in terms of gardens, window boxes, and trees. In addition, civic improvements such as street trees, the island on Ocean Avenue, the street pattern which is especially noteworthy when it bends and curves to accommodate a tree, and stone-lined curbs and culverts are property types which do much to shape the character of the built environment. This property type would also include Picadilly Nursery/Park, the Wayfayer's Church Biblical Garden, the War Memorial arch designed by Charles Greene, and the Serra Memorial designed by sculptor Joseph Mora.

5.6.3 Significance

Significant single family residences would be those are those that are related to Carmel's architectural chronology as described in Section 5.4 above; that reflect Carmel's pronounced

taste for individualism; or that represent the work of a master builder or architect. Architectural integrity should be substantially intact, and should be considered for individual merit or contribution to potential historic districts on the basis of architecture (in addition to or in lieu of any historic associations with notable residents). Where there are many representatives of a particular style or examples of a architect or master builder's work, the property should retain a high degree of physical and architectural integrity.

Nearly every commercial building on Ocean and Dolores contributes to the character of the historic business district. Other commercial properties in the city may also be eligible for listing if they were constructed prior to 1940. Since it is the nature of commercial buildings that storefronts are frequently remodeled, such modifications do not necessarily compromise a building's integrity. Historic associations enrich the significance of most buildings in the business district as well, and may outweigh a lack of architectural integrity in the application of the criteria for listing.

Significant landscape and garden resources are those that characterize the Arts and Crafts ideal of integrating the natural environment into the overall ambiance of the building site, streetscape, neighborhood, or district.

6.0 Development of Art and Culture (1904-1940)

6.1 Arts and Crafts Movement

As previously discussed, the Arts and Crafts Movement was very influential in many aspects of Carmel's physical and cultural development. The movement promoted the pride of craftsmanship and had particular influence on the decorative arts and architecture of the period. However, Arts and Crafts ideals permeated all aspects of American society as can be seen in the changes in dress and fashion, home management and patterns of living, trends in education, and in social reform. The philosophy of Arts and Crafts Movement was spread through popular literature and periodicals, as well as through the establishment of clubs, societies, and schools.

The Arts and Crafts Club in Carmel was established in 1905 by Elsie Allen, former editor of *Harper's* magazine and faculty member of Wellesley College, Jane Powers, Louis Slevin, and a number of other like-minded citizens. Arts and Crafts were broadly defined to include all the visual and decorative arts, literature, music, domestic arts, and drama. The club also established a natural history museum, sponsored fund-raising events, mounted exhibitions of the members' artwork, and promoted civic improvements. In the following years a number of more specialized art, music, literature, and drama clubs and associations were formed. In 1910, the Arts and Crafts Club organized its first summer school, called Cedar Croft, offering classes in botany, drawing and painting, pottery, china painting, art needlework, dramatic reading, music, and art metal, in addition to tutoring in Latin, English, and mathematics. The school operated until the mid-1920s, giving students from around the

country the opportunity to work with nationally recognized artists as well as noted local artists.

6.2 Artist and Writer Colony

6.2.1 Artists

The Mission San Carlos and the breath-taking landscape of the surrounding area has made Carmel a popular destination for artists since the 1870s. Coupled with the discounted lots and agreeable terms offered by the Carmel Development Company, many artists decided to make Carmel their home. The remodeled barn of Jane Gallatin Powers, an accomplished artist and wife of Frank Powers, is considered to be the first art studio in Carmel. Mrs. Powers persuaded many San Francisco artists to relocate their studios to Carmel, after the 1906 earthquake. Other studios were soon established, including those of Mary DeNeale Morgan, Arthur Vachell, Laura Maxwell, Jessie Frances Short and William Silva.

By 1911, James Devendorf reported that over 60% of the residents of Carmel were devoting their lives to work connected with the "aesthetic arts." Although Carmel was a thriving artist's colony by the 1920s, there were no galleries except for the clubhouse of the Arts and Crafts Club, which was used for other functions as well. Even this limited gallery space disappeared when the Club ceased to hold its annual exhibition in 1922, and it sold the clubhouse to the Abalone League in 1927. Many artists displayed their work in their home studios. That strategy proved to be unsuccessful, however, as potential buyers, mainly tourists, often had a difficult time finding the studios, given the lack of addresses and street lighting. This problem was resolved in 1927 by the formation of the Carmel Art Association. Members paid dues of one dollar per month to the association which would provide exhibition space, hire a curator, and make sales. Twenty-five percent of sales went to the curator, five percent to the association, and the rest to the artists. Meetings were held at "Gray Gables," the home of Josephine Culbertson and Ida Johnson. The group first rented commercial space in the Seven Arts Building, designed by Herbert Heron, at Lincoln and Ocean. Through the assistance of Barnet Segal, the association purchased Ira Remsen's old studio on Dolores Street in 1934 and expanded it in 1937.

Three particularly active members of the Carmel Art Association were Mary DeNeale Morgan, William Ritschel, and Armin Carl Hansen. Born in San Francisco in 1868, DeNeale Morgan attended the California School of Design from 1888 to 1890. She later exhibited throughout the United States. She had previously come to Carmel in 1903 with her mother and brother Thomas and helped run the Pine Inn for a little more than a month for Frank Devendorf. Morgan returned the following year and occupied a cottage on Monte Verde near the Pine Inn. Six years later she established her permanent home and studio in the former Sidney Yard studio on Lincoln near Seventh. An avid painter in tempera and oils, DeNeale Morgan was also active in the Forest Theater Society and All Saints Church.

William Ritschel and Armin Carl Hansen were two of five members of the Carmel Art

Association to be admitted into the National Academy of Design, one of the highest forms of recognition for artists. Marine landscape artist Ritschel was born in Nuremberg, Bavaria in 1864. He came to the United States in 1895 and settled in New York City. Having later visited Carmel, he returned in 1918 to have his "Castle" built in the Highlands with the help of a Spanish stone mason. Born in San Francisco on October 23, 1886, Hansen studied art at the California School of Design and later in Stuttgart, Germany. He was a painter and etcher who was noted for his portrayals of the Spanish and Portuguese fisherman of Monterey Bay.

In 1937 Hansen and Paul Whitman, an etcher, founded the Carmel Art Institute as a school where all branches of art were taught. Their studios were in the Seven Arts Building on Lincoln. Two years later, however, Hansen became ill and asked another active member of the Carmel Art Association, John Cunningham to take over. Cunningham—and his wife Pat, an oil painter and muralist—moved the institute first to the Court of the Golden Bough and then to the city-owned Flanders Mansion. Closed after Cunningham's retirement, the Institute was a vital part of Carmel's art scene for decades; among its faculty were such internationally-famed artists as Fernand Leger and Alexander Archipenko.

Carmel also attracted a number of cartoonists. In the early years, Gene Byrnes, creator of "Reg'lar Fellers," was named by *Literary Digest* in 1923 as one of the seven big cartoonists of the United States. Other cartoonists that have made their homes in Carmel include Jimmy Hatlo, Hank Ketcham, Gus Arriola, Eldon Dedini, and Bill Bates.

The natural beauties of the area have also attracted photographers. Arnold Genthe, a native of Prussia with academic training, came to San Francisco in the early part of the century. Here he discovered photography and began specializing in informal portraits and landscapes. As a member of the Bohemian Club and a friend of poet George Sterling, he first visited Carmel in 1905. Attracted by the easy terms offered by the Carmel Development Company, he built a house and studio in Carmel on East Camino Real between Tenth and Eleventh, where he lived periodically for ten years. It was here that he took the first color photographs of "the cypresses and rocks of Point Lobos, the always varying sunsets, and the intriguing shadows of dunes offered a rich field for color experiments."[22] In 1911 he displayed one of the first exhibitions of color photographs in the United States. Other photographers included Edward Weston, Lewis Josselyn, Johann Hagemeyer and George Seideneck. Edward Weston maintained a second floor studio at the southeast corner of Ocean Avenue and Monte Verde between 1929 and 1937. This influential photographer helped establish the West Coast Tradition of fine art photography and was a prolific interpreter of the Carmel Valley, Point Lobos and Big Sur environments. One of the most important local photographers was Louis Slevin. A man of many facets, Slevin was a shopkeeper, postmaster, writer, and stamp collector, collector of rare books, and maritime historian. Ranging from 1899 to 1935, Slevin's photographs provide important documentation of the changes as the Monterey Bay area developed.

Craftsmen of every type found a home in Carmel. Ruth Kuster kept a weaving shop in her husband's Court of the Golden Bough. Catherine Seideneck specialized in hammered brass

and copper, leather work, and hand-made jewelry. Mayotta Brown Comstock fashioned handmade dolls, and Ida Johnson produced fine pottery. J. J. Wright established the Press in the Forest where he wrote, set the type, printed and bound each volume by hand. Also notable were artist/blacksmith Francis Whitaker and Charles Sayers, a master woodcarver.

6.2.2 Literature

Arriving from 1901 to 1907, the earliest writers to come as full or part-time residents were David Starr Jordan, Hal Lewis (later Sinclair Lewis), and Frederick Bechdolt. The author of *Blood of the Nation, The Higher Sacrifice* and *The Strength of Being Clean,* Jordan first visited the Carmel area in 1880 while taking the U. S. Census. Short story writer Jimmy Hopper, editor of *Commonweal* Michael Williams and his wife Peggy, and Grace MacGowan Cooke and her sister Alice MacGowan also settled in Carmel in the early years of the century.

Jimmy Hopper moved to Carmel permanently after the San Francisco earthquake in 1906. First renting a cottage on Dolores and Ninth, he later took over George Sterling's house at Torres and Eleventh, which was destroyed by fire in 1924 and rebuilt on the same site. Hopper wrote more than four hundred short stories and several novels for popular magazines such as *Collier's* and *The Saturday Evening Post.*

Born on July 27, 1874, in Mercersburg, Pennsylvania, Frederick Ritchie Bechdolt went from placer mining in the Klondike, to cow punching, to rubbing shoulders with criminals at San Quentin and Folsom. When he first arrived in Carmel in 1907, he rented a cottage in the Eighty Acres until he met and married Adele Hale. His novels include *When the West Was Won, The Hard Rock Man, Tales of Old timers* and *9009* in collaboration with Jimmy Hopper. He also wrote for various newspapers including the *Seattle Star* and *Los Angeles Times*. In addition to being a prolific writer, Bechdolt served as postmaster, city council member and police commissioner. He died in 1950.

Alice MacGowan and Grace MacGowan Cooke moved to Carmel in 1908 to join the literary colony. They had already achieved wide popular success with their novels, short stories, essays, and poems, a success that began as early as 1888 with the publication of Grace's first magazine stories. They bought a two-story, shingled house located on a cliff above the beach at what came to be known as "Cooke's Cove." They were also active in the Forest Theater Society from its founding in the spring of 1910.

Soon after the MacGowan sisters arrived in Carmel, they wired twenty-three year old Sinclair "Hal" Lewis to join them as their secretary and collaborator. The three had met at Helicon Hall, a utopian writers colony in New Jersey established by Upton Sinclair. For a little over a year Lewis lived in the house of Josephine Foster on the beach near the MacGowan house; that spring he shared his modest quarters with friend William Rose Benet. During the summer, the two young men were hosts to *The Nautilus* editor Elizabeth Towne and her husband, William E. Towne.

The cut-rate prices for building lots offered by Devendorf made Carmel a magnet for the Bohemian writers of San Francisco. George Sterling had moved to California in 1890 from Sag Harbor, Long Island. He studied for the priesthood for three years, then left to work for his uncle, Frank Havens, as a realtor. He married Carrie Rand and settled in Piedmont. During his fifteen years as a businessman he made a point of meeting most of the literary figures of San Francisco, and he gradually came to think of himself as a poet instead of a realtor. Eventually Sterling became the center of a group of artists and writers that met at Coppa's, a San Francisco restaurant. About the same time Sterling joined the Bohemian Club, San Francisco's refuge for playful businessmen, and received the title "King of Bohemia." His friend, writer Ambrose Bierce, helped him publish his first collection of poems in 1903. In 1905, Sterling and author Mary Austin visited Mission San Carlos Borromeo. Soon thereafter, each decided to make Carmel their permanent residence. The Sterlings built a house in the Eighty Acres, on Torres Street between Tenth and Eleventh. Jack and Charmian London were frequent guests.

Born on September 9, 1868, in Carlinville, Illinois, Mary Austin was a prolific writer who published some thirty-two books and approximately two hundred periodical articles. Austin had moved to a ranch near Bakersfield with her family when her father died in 1888. Married to Stafford Wallace Austin in 1891, Austin eventually left her husband to devote herself to her intellectual interests. After a prolonged visit to Italy, Austin returned to Carmel in 1912. Always unconventional, Austin had San Francisco architect Louis Mulgardt design a quaint redwood cabin and a studio platform around the limbs of an oak on her North Lincoln property. Austin called the studio her "wick-i-up" and spent many hours there writing about nature and women's rights. By 1924 she had established herself in Santa Fe where she fought for the preservation and rehabilitation of Native American and Spanish art and handicrafts.[23]

The circle of writers and artists around Sterling began to crumble in 1910 when he made the first of what came to be regular summer trips back to his family home on Long Island. His marriage to Carrie Rand, which had been shaken many times by his infidelity, broke up in 1914 as the result of a particularly flagrant affair. He left Carmel for good the following year, settling in Greenwich Village where he hoped to begin a new and more successful career. Despondent over the death of his friend Jack London and the estrangement with his wife, Sterling committed suicide in 1926.

Robinson Jeffers was Carmel's most original poet. Sterling's enthusiastic, lyrically descriptive letters describing Carmel and its isolated inhabitants, struck a chord with Jeffers. He rented a house on Monte Verde near Ocean in 1914. After his marriage to Una Call Kuster, the Jeffers purchased land on Carmel Point and hired Michael J. Murphy to build a house in 1918. Constructed of native granite, they called it "Tor House" because the treeless, wind swept lot facing the ocean reminded them of the tors in England. Observing the stone masons' techniques during the construction "Tor House," Jeffers later built "Hawk Tower" himself. Although Jeffers did not replace Sterling as the center of Carmel's bohemian

society, he was not the hermit many have made him out to be. Indeed, he attracted many friends and visitors to his home including Lincoln Steffens and his young wife, Ella Winter.

Son of a wealthy Sacramento dry goods merchant, Lincoln Steffens became a "muckraking" reporter, holding several editorial positions with magazines that included *McClure's Magazine* and *American Magazine* before he wrote *The Shame of Cities.* Steffens and Winter moved into a cottage on San Antonio near Ocean Avenue in 1927, where Steffens wrote his autobiography. Steffens also took an active interest in the affairs of the town, in its politics and schools. He also edited the *Pacific Weekly* and wrote a regular column for the local weekly, *The Carmelite,* edited by his wife. During this period, Steffens was host to most of the world's *literati* and politically important people. In 1929, Ella sued Steffens for divorce amid much gossip. After the divorce was final in 1931, Steffens remained in Carmel until his death in 1936.

6.3.3 Drama and Theater

Drama in Carmel was pursued in close conjunction with the other arts. The first theater in Carmel was created by Herbert Heron, a professional actor with the Belasco and Morasco Stock Company in Los Angeles. He first visited Carmel in July 1908 and returned a year later to build a home at Guadalupe and Mountain View. He selected a site for an open air theater in the Eighty Acres which Devendorf gave to him on a long term lease without rent to build a stage and seats. Devendorf was so excited about the idea that he tossed in the remainder of the block and two workmen to help clear the grounds. By 1910 there were enough interested individuals living in Carmel to form the Forest Theater Society. Its motto was "to produce plays by local writers, and to give local writers the opportunity and experience of writing, producing, acting and directing as well as stage and costume design." The first production was the play *David*, written by Constance L. Skinner and directed by Garnet Holmes, which took place on July 9, 1910. Most of the town's residents played a role in this and following productions or were part of the audience.

Perry Newberry and a group broke away from the Forest Theater for a time and formed the Western Drama Society in 1912. Later, in 1919, the two groups were reunited and merged with the Carmel Arts and Crafts Club, the Forest Theater Society becoming its theater wing. The Arts and Crafts Club constructed an indoor theater on Monte Verde near Ninth Avenue in 1924. During the Depression Era productions at the Forest Theater were halted, and the facility was deeded to the city of Carmel so that the Public Works Administration could rebuild the stage and continue its upkeep. During this renovation, rock was used to re-face the concrete dressing rooms and original stage, the plain wood benches were replaced with redwood plank seating, and a new fence was built around the property. Productions resumed in 1942.

A prominent figure in the development of theater in Carmel, Edward J. Kuster came to the village in 1919 from Los Angeles where he had been a lawyer for twenty years. He gave up the legal profession to study theater arts with a former client, Ruth St. Denis. He was first

cellist with the Los Angeles Philharmonic, and an amateur bicyclist. He then spent two seasons in Berlin and Munich, moving to Carmel in 1920 to work with the Forest Theater Society as its president and director. Next he went to New York to study classical and medieval architecture and later enrolled in the San Francisco School of Theatre. Again he returned to Carmel, and decided to build a state-of-the-art indoor theater. He opened the Theatre of the Golden Bough on Ocean Avenue at Monte Verde on June 3, 1924. Constructed for experimental drama, the Golden Bough featured a projecting semicircular platform connected to the main stage by a flight of wide shallow steps, indirect lighting and small balconies. Costing $100,000, the theater resembled an old pagan temple and was praised nationwide by critics, not only for the quality of the production, but for its comfort and beauty.

The Theatre of the Golden Bough opened with a summer session in 1924 with Maurice Brown's original play, *The Mother of Gregory*, based on an old Scot legend of Annie of Lochroyan. Theater productions in Carmel had usually been plays involving almost the entire community from small children to elders in every aspect of its production. While great community involvement, fun, and satisfaction was evidenced, Kuster felt a more disciplined professional product was necessary.

During the Depression, Kuster leased the theater as a movie house. He also took over the old Arts and Crafts Theater from the Abalone League, which he renamed The Studio Theater of the Theatre of the Golden Bough, and leased it out as well. In 1935, he began bringing back live theater. On May 17, the play *By Candlelight* opened and two days later the theater burned, leaving only a portion of the lobby in tact. After the fire, the theater was moved to the old Arts and Crafts Theater (near Monte Verde and Ninth) and renamed the Golden Bough Playhouse. It became Carmel's first art movie house—Carmel Filmarte.

Kuster continued to present theater productions and summer workshops. He was called "The Starmaker" because Hollywood scouts would attend his productions to find promising young actors. Some of the actors he nurtured include Rosemary de Camp, Ruth Warshawsky, Robert Ryan, Nanette Fabray, and Donnon Jeffers, son of Robinson Jeffers.

The Golden Bough Playhouse was damaged by fire in 1949 while again running *By Candlelight.* A new Golden Bough Theater was built at this site on the Monte Verde side, and The Circle Theater of the Golden Bough was built behind it on the Casanova side. When rebuilding was completed by a newly organized corporation, Kuster was hired as manager. He retired in 1956 and moved to Switzerland in 1961, where he died an untimely death. The Circle Theater continued to offer productions until 1969 when it was purchased by United Artists.

The team of Watrous and Denny were active participants in the cultural life of Carmel Hazel Watrous was a supervisor for the Alameda school system, and also had experience as a stage designer. She moved to Carmel in 1924 with her companion, Dene Denny, whom she had met at Berkeley. During 1927 and 1928 they leased the Golden Bough Playhouse from

Kuster and presented eighteen plays.

6.2.4 Music

From the early days of Carmel, informal groups of music lovers gathered in homes to hear resident or visiting artists play or sing. Sally and Teresa Ehrman, Mrs. Lawrence Strauss, and Mabel Gray Young formed the nucleus of the musical colony. Young is believed to have been the first trained musician to settle in Carmel. She often gave concerts in San Francisco and was said to be teaching piano to most adults in Carmel.

The Norwood Music Colony established in 1917 had eleven cottages where many eminent musical artists lived. A large number of notable musicians spent some time in Carmel. Cellist Frederic Preston Search taught and worked with local organizations. Concert pianist Katherine Vander Roest Clarke held informal Sunday afternoon musicales in her Carmel home. Others included Thomas Vincent Cator, Henry Cowell, Antonio DeGrassi, Edward Johnson, Betty Lawrence, Nathan Firestone, Marina Ralston, Evadna Lapham, Louis Persinger, George H. Richardson and his wife, and David Alberto.

Denny and Watrous were responsible for organizing the most important musical events and venues in Carmel. They founded the Carmel Music Society in 1926 which hosted chamber music concerts. Later the two became professionally involved in music management and promotion. They opened the Denny-Watrous Gallery on Dolores which hosted informal recitals and exhibitions. They also sponsored concerts in other cities as well. In 1935 they organized the Carmel Bach Festival. Although envisioned as a venue for local talent, it achieved national recognition, featuring noted professional musicians. Presented in the Sunset School Auditorium and at the mission, the festival originally consisted of five concerts, two organ recitals, and a series of lectures on related musical subjects. Each series was concluded by the *Mass in B Minor*, sung in the Carmel Mission by the full chorus accompanied by a full orchestra. The conductors were Ernst Bacon, followed by Michael Penha until 1939, and then Gatson Usigli from 1939 to 1956. The company was made up of approximately 60 musicians and a chorus of 50 singers. One of the more important supporters of music and especially the Bach Festival was Noel Sullivan, the nephew of James D. Phelan, mayor of San Francisco, state senator, and builder of Saratoga's Villa Montalvo.

6.3 Academia and Science

Dr. David Starr Jordan was the first of the college professors to settle in Carmel. He first visited the area while taking the U. S. Census in 1880. In 1904, Jordan, then president of Stanford, purchased three lots on the northeast corner of Camino Real and Seventh where he built a "comfortable and stately" house in 1905. Soon after, many professors, no doubt responding to a brochure they received from Devendorf inviting "school teachers of California and other brain workers at indoor employment," began to populate Carmel-by-the-Sea. Starr's colleagues from Palo Alto such as Vernon Kellogg, George Pierce, Karl Rendtorff, and Guido Marx soon followed. Since most of them bought lots on Camino Real

south of Ocean, that section of town became known as "Professors' Row." Professors from the University of California at Berkeley tended to build homes in other parts of Carmel. For example, John Galen Howard, Dean of the School of Architecture, purchased lots on Monte Verde between Thirteenth Avenue and Santa Lucia while George Boke, Dean of the School of Law, settled on the northwest corner of San Carlos and Santa Lucia.

Among the professors and scientists who had permanent or vacation homes in Carmel were included plant ecologist William S. Cooper; Professor James Worthington, a fellow of the Royal Astronomical Society of Great Britain and conductor of eclipse expeditions; Dr. Alfred E. Burton, former dean of Massachusetts Institute of Technology, and Drs. Fenner and Stillman, early experimenters with vitamins; zoologist Professor Vernon Kellogg; Dr. J. L. Fish engineering expert. Dr. and Mrs. Karl G. Rendtorff, a professor of Germanic languages, came with his family and built a house in 1910 and subsequently became very active in village life. Dr. O. V. Lange was a professor at the University of California. The home of Professor Guido Marx at Ninth and Camino Real became the Holiday House.

The Department of Botanical Research of the Carnegie Institute, locally known as the Coastal Institute, was located at the east end of Twelfth Street at Junipero. The Lab brought many members of the scientific community to Carmel. Institute staff included Dr. Daniel T. MacDougal, director of botanical research, who was its director for thirty years; Dr. Beverly Clark, authority on photosynthesis; Professor Benjamin M. Duggar, physiological pathologist; Dr. Forest Shreve, known for his map of North America; and Professor Francis E. Lloyd, a botanist who specialized in the study of carnivorous plants.

6.4 Influence of Women

From its earliest years, Carmel has attracted intelligent, creative and independent women from all walks of life. Whether artists, writers, community activists, health care advocates, politicians, philanthropists, or builders, women were unusually visible and dynamic participants in the creation and development of Carmel. The early social structure of the village allowed women to challenge typical gender roles and lifestyles and to fully exercise their talents in business, art, and politics while in other localities women were still engaged in the struggle for recognition and autonomy.

The organization and activities of the Arts and Crafts Club was dominated by women. Elsie Allen served as the first president. She was followed in office by Josephine Foster and Mary E. Hand. Hand led the group for sixteen years, organizing fund raisers and overseeing the construction of the Arts and Crafts Theater in 1922. Fannie Yard (Mrs. Sidney Yard) was the director of the Cedarcroft School, a position she held for many years.

Many female artists who made Carmel their home took an active role in the community. A good friend of James Devendorf, Mary DeNeale Morgan first came to Carmel in 1903 with her family. A painter in oil and tempera, she had graduated form the California School of Design in 1890 and exhibited her work throughout the United States. She was a founding

member of the Arts and Crafts Club, the Forest Theater, All Saints Church, and the Carmel Art Association. She also taught drawing and painting in the Cedarcroft school, and led the 1921 campaign for the city purchase of the Sand Dunes and Block 69.

Morgan's good friends, artists Josephine Culbertson and Ida Johnson, were also active in the development the community. They had come to Carmel in 1906. Both gifted artists, Culbertson painted in oils and Johnson was a potter. Culbertson was also a talented organist who played in the Arts and Crafts orchestra as well as at the Community Church. They organized "The Dickens Club" for the young men of the village. Miss Culbertson also had a hand in the organization of the Carmel Art Association in 1927. Ida Johnson was the chairwomen and curator of the "Museum of Yesteryear," sponsored by the Arts and Crafts Club. Both ladies were active in the Carmel Library Association, founded in 1904. Miss Johnson served as the Association's president in 1911-1912.

The contributions of Dene Denny and Hazel Watrous have already been discussed. Both were very influential in the development of art, music, and drama in Carmel. Daisy Bostick, co-author of *Carmel at Work and Play* with Dorothea Castelhun, wrote for many years on the *Pine Cone.*

Women were involved in local politics from the date of city incorporation in 1916. Eva K. DeSabla was a charter member of the city's board of trustees. She was reelected to a second term on April 12, 1920 and appointed president of the board. Saidee Van Brower was first elected city clerk in 1920 and won every bid for reelection thereafter. A dance instructor in Berkeley, Van Brower was one of the many artistic-minded people who moved to Carmel in 1907. She performed in the Forest Theater productions as well as directed the corps de ballet, as did her niece Jeanette Hoagland Parkes, who married Percy Parkes.

The contributions of other influential women have been discussed in the forgoing sections, i.e., Abbie Jane Hunter, Jane Powers , and Mrs. E. A. Foster (Section 1.5); Mrs. Dominga Doni de Atherton, Ann Murphy, Emma Otey and Emma Maugh (Section 3.1); Dene Denny and Hazel Watrous (Section 3.2, 5.3 and 6.2); Grace Deere Velie Harris (Section 4.2); Emma Williams, Helen Jaquith and Ella Reid Harrison (Section 4.3); Josephine Culbertson and Ida Price (Section 4.4 and 6.2); Elsie Allen and Jane Powers (Section 6.1 and 6.2); and Mary DeNeale Morgan, Ruth Kuster, Catherine Seideneck, Mayotta Brown Comstock, Mary Austin, Alice MacGowan, Grace MacGowan Cooke, Mabel Gray Young, Sally Ehrman and Katherine Vander Roest Clarke (Section 6.2). Other women who were active in community life or made significant contributions in their fields of endeavor include Laura Maxwell, Ivy Basham, Agnes Signor, Daisy Bostick, Mary Goold, Josephine Foster, Marie Gordon, Nora May French, and Eunice Gray.

6.5 Associated Resource Types

6.5.1 Identification

Properties associated with context of Development of Art and Culture include:

- Homes and studios
- Art galleries
- Theaters

6.5.2 Description

Homes and studios

The homes of artists, writers, dramatists, photographers, musicians and others who shaped Carmel's identity as an art and cultural center between 1905 and 1940 are easily distinguishable from their neighbors, perhaps due to the strong individualism of their inhabitants and their expression of personal creativity. Studios and other types of work spaces would also be important resources associated with this context.

Art galleries and shops

The Carmel Art Association building and numerous art galleries are focal points of this context throughout the business district. Many craftsmen kept retail shops where they sold the products of their art.

Theaters

Historic theaters in Carmel include the open-air Forest Theater and the Arts and Crafts Community Theater, now the Pacific Repertory Theater. In addition, remnants of the Kuster's Theatre of the Golden Bough on Ocean at Monte Verde exist in the Court of the Golden Bough. The Sunset Center is significant within this context for the role it played in the community as an auditorium for cultural events since 1934. Designed by C. J. Ryland, the Sunset Center has been the venue of many cultural activities and performances, including pottery classes, dance recitals, painting studios, and lecture and meeting rooms. Other resources include the American Legion Hall and the Woman's Club at Ninth and San Carlos.

6.5.3 Significance

The registration requirement for a property associated with this context would be the role the resource played in the development of art or culture, and its integrity to the period of significance, i.e., the occupation of the person in question and his or her productive years, or with the period of significant activity. Commercial buildings significant under this context include those constructed prior to 1940 which were associated with notable artists and craftsmen or promoters of art and culture.

7.0 ENDNOTES

1. Cabrillo was actually of Portuguese descent, but acting on the orders of the Spanish viceroy of Mexico.

2. The word "mission" applies not only to a church, but the entire individual settlement. The Franciscans followed, in general, the routine of deciding upon a likely spot for a settlement (good land, fresh water, native population, and strategic position), blessing the site, planting a cross, and erection of an open air structure for services. A small chapel, house for the missionaries, house for the female natives, soldier's dwellings, guard house and kitchen were then built. These early buildings were usually constructed of adobe with tule roofs. Later, a larger church, larger living quarters and store houses were built of brick or stone.

3. James Ladd Delkin, *Monterey Peninsula*, p. 156-157.

4. With the establishment of a mission in Sonoma in 1823, the chain totaled twenty one and was linked by the El Camino Real.

5. Harold and Ann Gilliam, *Creating Carmel: The Enduring Vision,* p. 46.

6. Sandy Lydon, *Chinese Gold: The Chinese in the Monterey Bay Region*, pp. 138-139.

7. Pt. Lobos State Reserve, *The Whaler Cabin and Whaling State Museum.*

8. Kirstie Wilde, *History of the Murphy-Powers-Comstock Barn/Studio*, p.9.

9. Eugene Sawyer, *History of Santa Clara County, California*, p.1403.

10. Gilliam and Gilliam state on page 61 of their book, *Creating Carmel*, that Duckworth purchased 324 acres from Escolle, a prosperous Frenchman.

11. There is some disagreement as to whether Duckworth or Hunter built the Hotel Carmelo. Sharron Lee Hale states on page 11 of her book, *A Tribute to Yesterday,* that Hotel Carmelo was established by Hunter with Goldsmith as builder. Apparently Duckworth and Hunter were partners, and Goldsmith was the builder.

12. Sharron Lee Hale, *A Tribute to Yesterday,* p. 119.

13. State law at the turn of the century apparently required that a school be formed when as many as seven children lived in a town. Sharron Lee Hale states on page 10 of her book, *Tribute to Yesterday,* that "Devendorf, who was in favor of beginning a school in Carmel, begged the Nortons to stay so that Mabel [their daughter] would make the seventh pupil the law required and he could have his school."

14. The twenty-two acre campus of Carmel High School is actually located outside the city

limits.

15. Dora Hagemeyer, a poet, operated the Woodside Library out of a cottage on San Carlos Street north of Fourth. It moved to Monte Verde in 1927 and eventually closed when the Harrison Memorial Library took root.

16. The Christian Science Reading Room is now located at the church on Lincoln near Sixth.

17. Harold and Ann Gilliam, *Creating Carmel: The Enduring Vision,* p. 69.

18. Keeler is quoted in Robert Judson Clark's *The Arts and Crafts Movement in America 1876-1916,* p. 81.

19. Hugh W. Comstock, *Post-Adobe.*

20. Daisy F. Bostick and Dorothea Castelhun, *Carmel at Work and Play,* p. 30.

21. Sharron Hale, *A Tribute to Yesterday,* p.55.

22. Franklin Walker, *The Seacoast of Bohemia,* p.24.

23. Austin's place of residence during this time alternated between Europe, New York, Carmel and Santa Fe with various sources contradicting the actual time periods. One source has her moving back and forth between Europe and New York from 1903 until she moved to Santa Fe in 1918. Another source has her living in either Carmel or New York between 1911 and 1918 until she moved permanently to Santa Fe in 1924.

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9. 0 APPENDICES

9.1 Elected Officials of Carmel-by-the-Sea

Charter Members of the Board of Trustees and Elected Officials. 1916

A. P. Fraser, President
Peter Taylor
G. F. Beardsley
Eva K. DeSabla
D. W. Johnson
L. S. Slevin, Treasurer
J. E. Nichols, Clerk

Presidents of the Board of Trustees. 1916-1928

A. P. Fraser, President, 1916-1920
Eva K. DeSabla, President, 1920 (resigned)
William Kibbler, President, 1920-1922 (appointed to replace DeSabla)
William Maxwell, President, 1922 (resigned)
Perry Newberry, President, 1922-1924 (appointed to replace Maxwell)
William Kibbler, President, 1924-26
John B. Jordan, President, 1926-1928

Mayors, 1916-1992

A.P. Fraser, 1916-1920
Eva DeSabla, 4/12-9/29/1920
William T. Kibbler, 1920-1922
William L Maxwell, 4/10-5/29/1922
Perry Newberry, 1922-1924
William Kibbler, 1924-1926
John B. Jordan, 1926-1928
Ross E. Bonham, 1928-1932
Herbert Heron, 1930-1932 and 1938-1940
John C. Catlin, 1932-1934
James H. Thoburn, 1934-1936
Everett Smith, 1936-1938
Keith B. Evans, 1940- 1942 (resigned)
Percy McCreery, 1942- 1946
Frederick M. Godwin, 1946-1950
Allen Knight, 1950-1952
Horace D. Lyon, 1952-1958
John S. Chitwood, 1958-1960Frank Putnam, 1960-1962

Eben Whittlesey, 1962-1964
Herbert B. Blanks, 1964-1966
Steve Grant, 1966-1968
Bernard Laiolo, 1968-1972
Bernard Anderson, 1972-1976
Eugene Hammond, 3/2-9/7/1976
Gunnar Norberg, 1976-1980
Bernard Laiolo, 1980-1982
Charlotte Townsend, 1982-1986
Clint Eastwood, 1986-1988
Jean Grace, 1988-1992
Kennedy White, 1992-

Members of the Board of Trustees, 1916-1950

A. P. Fraser, 1916-1920
Peter Taylor, 1916-1920
G. F. Beardsley, 1916-1918
Eva K. DeSabla, 1916-1920 (resigned)
D. W. Johnson, 1916-1918
William T. Kibbler, 1918-1926
Courtland J. Arne, 1918-1922
T. B. Reardon, 1920-1924
Fred Bechdolt, 1920 (resigned)
Michael J. Murphy, 1920-1922 (appointed to replace Bechdolt)
George M. Dorwart, 1920-1922 (appointed to replace DeSabla)
William Maxwell, 1922-1924
Helen Parkes, 1922-1926
Perry Newberry, 1922-1924
John Dennis, 1924-1928
Henry Larouette, 1924- 1928
C. O. Goold, 1924-1926
John B Jordan, 1926-1934
George Wood, 1926-1930
Alfred K. Miller, 1926 (resigned)
Fenton P. Foster, 1926-1928 (appointed to replace Miller)
Ross E. Bonham, 1928-1932
Vassamine Rockwell. 1928-1932
Lavon E. Gottfried, 1928-1930
Herbert Heron, 1930-1934 & 1938-1941 (resigned)
Clara Kellogg, 1930-1934
John Catlin, 1932-1936
Robert A. Norton, 1932-1936
Bernard Rowntree 1934-1938 & 1944 (died)

James H. Thoburn. 1934-1938
Joseph A. Burge, 1934-1938
Everett Smith, 1936-1938
Gordon Campbell, 1938 (resigned)
Hazel Watrous, 1938-1940 (appointed to replace Campbell)
Keith Evans. 1940- 1942 (resigned)
Frederick M. Godwin, 1940-1942 & 1946-1950
Arthur Hill. 1941-1942 (appointed to replace Heron)
Fred U. McIndoe, 1942-1943 (died)
L. L. Dewar, 1942-1944 (appointed to replace Evans)
Fred J. Mylar, 1943-1944 (appointed to replace McIndoe) & 1945 (appointed to replace Rowntree) (Resigned)
H. E. Hefling, 1944-1948
Allen Knight, 1944-1952
Charles M. Childers, 1945-1946 (appointed to replace Mylar) & 1946- 1948
Donald M. Craig, 1946-1954
Andrew Martin, 1948-1952
Gene A. Ricketts, 1948-1952

9.2 Members of the Arts and Crafts Club of Carmel

Founding Board, 1905

Elsie Allen, President
Mary Braley, Recording and Responding Secretary
Mrs. Frank Powers, Vice President
Louis Slevin, Treasurer

Second President. 1906

Josephine Foster

Fundraising Committee, 1906

Mary E. Hand
Fannie Yard
Dr. J. E. Beck
Carrie R. Sterling
Sidney Yard
William E. Wood
Arthur Vachell

Cedar Croft Staff. 1910

Sidney Yard, Director and dramatic reading
Helen Parkes, botany
Mary DeNeale Morgan, drawing and painting
Etta Tilton, pottery, china painting and art needlework
Carrie Carrington, music

Museum of Yesteryear

Ida Johnson, Chairwoman and Curator

Civic Committee

Thomas Reardon
Dr. Alfred E. Burton
Jessie Arms Botke
Susan Creighton Porter
Charles Sumner Greene

9.3 Founding Members of the Forest Theater Society

Joseph and Mary Hand
Helen Parkes
George and Carrie Sterling
Lucia Lane
Maud Lyons
Stella Vincent
Jessie Francis Short
George Boke
Virginia Smiley
Mary DeNeale Morgan
Fred and Clara Leidig
Saidee Van Bower
J. E. Beck
Thomas Reardon
Nellie Murphy
Ferdinand Burgdorff
Frederick Bechdolt
Helen Cooke
Alice MacGowan
Perry and Bertha Newberry
Herbert Heron

9.4 Charter Members of the Carmel Free Library Association

Edmund Arne
George Beardsley
Annie Gray
Mrs. F. H. Gray
Helen Jaquith
Annie Miller
Miss Parmele
Mrs. Franklin Powers
Franklin Powers

9.5 Founding Board Members of the Carmel Art Association

Pedro Lemos, President
Henry F. Dickenson, First Vice President
Josephine Culbertson, Second Vice President
Ida Maynard Curtis, Secretary
W. Seivert Smit, Treasurer
Sarah Deming
Homer Emmons
Jo Mora
George Seideneck
Edgar Alwyn Payne

9.6 Architects and Builders in Carmel

Architects

Frank Ashley
Albert Farr
Charles Sumner Greene
Guy Koepp
Jon Konigshofer
Milt Latham
Bernard Maybeck
Julia Morgan
Louis Mulgardt
Willis Polk
C.J. Ryland
Robert Stanton
William Wurster

Designer/Builders

Miles Bain

Frederick Bigland
Ernest Bixler
Daisy Bostick
Artie Bowen
Hugh Comstock
Delos Goldsmith
Lee Gottfried
Donald Hale
C. H. Lawrence
Meese & Briggs
M.J. Murphy
Percy Parkes
Frank Ruhl
A. C. Stoney
Hazel Watrous
George Whitcomb

9.7 Historical Chronology of Carmel

1542 Juan Rodriguez Cabrillo sails by Monterey Bay.

1595 California coast mapped by Sebastian Rodriguez Cermeno, who calls Monterey Bay "Bahia de San Pedro."

1602 Sebastian Vizcaino also maps coast and names Monterey Bay after the viceroy of New Spain, names Point Pinos and "El Rio Carmelo."

1769 Captain Gaspar de Portola and Franciscan padre Junipero Serra set out to establish a chain of missions and presidios in Alta California.

1770 On June 3rd Mass is celebrated by Father Sierra on the shores of Monterey Bay and Carmel Mission is founded.

1771 Father Sierra plants cross to designate site of Mission San Carlos Borromeo, the second of the missions. In August work begins on the first buildings, log structures with thatch roofs surrounded by a stockade.

1773 Father Francisco Palou joins Serra and begins building a larger church at Carmel Mission .

1784 Father Serra dies and is buried at the Carmel mission.

1793 Construction begins on new stone church which is completed in 1797. Manuel Estevan Ruiz, a Mexican stonemason, is the designer.

1803 Father Fermin Francisco de Lasuen, who had taken over from Father Serra as the head of the missions, dies. Decline of missions begins.

1822 Control of Alta California passes from Spain to Mexico.

1833 Secularization of the missions.

1835 Richard Henry Dana visits Monterey and records his impressions in *Two Years Before the Mast.*

1848 California ceded to the United States by Mexico by the Treaty of Guadalupe Hidalgo.

1849 The first Constitutional Convention is held in Monterey.

1850 California becomes the thirty-first state in the Union. Its first capital is San Jose.

1861 Mission San Carlos Borromeo described as a complete ruin.

1880 Southern Pacific Railroad opens resort hotel in Monterey, later called the Del Monte, and a mission restoration fund begun. Actual restoration not completed until fifty years later by Harry Downie, a San Francisco cabinetmaker.

1888 Development rights of 324 acres of the Las Manzanitas Ranch, owned by Honoré Escolle, pass to Santiago Duckworth.

Santiago Duckworth files map of "Carmel City" at county seat in Salinas. Plans resort development and builds Hotel Carmel at the intersection of Junipero (then Broadway) and Ocean. Two hundred lots sold and some cottages built before the 1890s depression.

1892 Duckworth is joined in his venture by Mrs. Abbie J. Hunter founder of the Women's Real Investment Company of San Francisco. Mrs. Hunter's uncle-in-law, Delos Goldsmith, builds bath house in 1889 at the foot of Ocean Ave.

1902 James Franklin Devendorf purchases land in Carmel from agent Santiago Duckworth. Frank Powers becomes his partner and the two form the Carmel Development Company with Devendorf as the on-site manager. Hotel Carmelo moved four blocks down Ocean to present location and re-named the Pine Inn.

1903 Brochure, addressed to "the School Teachers of California and other Brain Workers at Indoor Employment" distributed by Devendorf in May. Pine Inn officially opens on July 4th.

1904 Stanford president David Starr Jordan builds at the northeast corner of Camino Real and 7th. His assistant Vernon Kellogg also builds cottage. Camino Real just south of Ocean becomes known as "Professor's Row."

1905 Poet George Sterling moves to Carmel. His house becomes the nucleus of a literary colony.

Arts and Crafts Society organized.

1910 Forest Theater founded by Herbert Heron and Forest Theater Society formed. Open air facility opens July 9, 1910, with a production of "David."

1912 Forest Theater improved with larger stage with dressing rooms beneath. Electricity installed a year later. Western Drama Society breaks away from the Forest Theater Society and also begins producing plays. Arts and Crafts Society becomes third producer.

1913 Permanent population 550 by unofficial count with several thousand summer visitors. Devendorf issues another promotional brochure.

1914 Robinson and Una Jeffers arrive in Carmel from Monterey and begin building Tor House on Carmel Point.

1915 Carmel Highlands subdivided by Devendorf and Highlands Inn completed in 1917.

1916 Carmel incorporates.

1919 Three societies producing plays at the Forest Theater reunite.

1921 Bath house torn down.

1922 City purchases Devendorf Park and the Sand Dunes from James Devendorf.

1927 Carmel Art Association organized.

1929 Residential character of Carmel-by-the-Sea proclaimed by ordinance.

1937 Highway 1 opened down the coast of California.

1956 Robinson Jeffers sells a portion of his property for subdivision. More is sold after his death in 1962.

9.8 Who's Who in Carmel*

Elsie Allen - Founding president of the Arts and Crafts Club of Carmel, Allen was a former editor of *Harper's* magazine and retired faculty member of Wellesley College.

Mary Austin - Born on September 9, 1868 in Carlinville, Illinois, Austin was a prolific writer who published some thirty-two volumes in addition to approximately two hundred articles in periodicals. Austin moved to a ranch near Bakersfield with her family when her father died in 1888. Married to Stafford Wallace Austin in 189, she gave birth to a daughter the following year who was later found to be mentally retarded. She separated from her husband and moved to Carmel in 1906. Unable to afford the construction of a house on the lot she had purchased, she rented a cottage and latter stayed in the Pine Inn. San Francisco architect Louis Mulgardt designed a studio platform around the limbs of an oak on her North Lincoln property. Austin called it her wick-i-up and spent many hours there writing about nature and women's rights. In 1908, thinking herself hopelessly ill, she went to Italy to study prayer and mysticism with the Blue Nuns. Her book *Christ in Italy* was a product of her experience there. In 1912 she returned to Carmel and finally built a cottage beside her tree house. In 1924 she established herself in Santa Fe where she fought for the preservation and rehabilitation of Indian and Spanish arts and handicrafts.

Leonard Bacon - Bacon moved to Carmel in the 1920s. He wrote the satirical verse "Guinea Fowl", "Lost Buffalo" and others for *Harper's Weekly*.

Raymond Stannard Baker (AKA David Grayson) - Journalist, Pulitzer Prize winning biographer and essayist, Baker was born in Lansing, Michigan on April 17, 1870. From 1892 to 1897 he was a reporter for the *Chicago Record*. He moved to New York with his wife and children in 1898 to work for *McClure s Magazine* of which he served as associate editor until 1906. Baker then joined in the purchase of *American Magazine*, of which he was one of the editors until 1915. He was asked by Woodrow Wilson to edit his papers. Baker received the Pulitzer Prize for biography in 1940 for *Woodrow Wilson: Life and Letters*. He died in 1946.

Frederick Ritchie Bechdolt - Born on July 27, 1874 in Mercersburg, Pennsylvania where he received his formal education, Bechdolt later went from placer mining in the Klondike, to cow punching, to rubbing shoulders with criminals at San Quentin and Folsom. When he first arrived in Carmel in 1907, he rented a cottage in the Eighty Acres until he met and married Adele Hale. His novels include *When the West Was Won, The Hard Rock Man, Tales of Oldtimers* and *9009* in collaboration with James Hopper. He also wrote for various newspapers including the *Seattle Star* and *Los Angeles Times*. In addition to being a prolific writer, Bechdolt served as postmaster, city council member and police commissioner. He died in 1950.

William Rose Benet - Poet and novelist, Benet was born on February 2, 1886. He was on the staff of *Century Magazine* from 1911 to 1918. From 1919 and 1920 Benet was assistant

editor of the *Nation's Business*, and went from there to the *Literary Review of the*

* **NOTE:** The purpose of this appendix is to provide biographical information on historic figures in Carmel's history, especially the creative people from all disciplines who shaped Carmel's character. It is in no way intended as a complete list, but rather a synopsis of information collected during the preparation of this report. Exclusion from this appendix does not diminish the significance of any individual historic person.

New York Evening Post, from which the *Saturday Review of Literature* grew. In 1942, he received the Pulitzer Prize for poetry for *The Dust Which Is God*, an autobiographical verse narrative. Benet shared a cottage in Carmel with his former Yale classmate Sinclair Lewis.

Geraldine Bonner - Bonner moved to Carmel after the San Francisco earthquake. She was a writer for the *San Francisco Argonaut* and author of *The Pioneer* and *The Emigrant Trail.*

Daisy Bostick - Daisy Fox Desmond Bostick first came to Carmel from San Jose as a guest of the Newberrys in 1910. She moved to the village permanently in 1918, pursuing a variety of activities including managing the Hotel Carmel with her husband Lou Desmond and writing a column for the *Pine Cone*. An acute observer of life in Carmel, she co-authored *Carmel at Work and Play* with Dorothea Castelhun in 1925.

Arthur (Artie) Bowen - Born in Sotoville in January 1887, Bowen moved to Carmel from San Jose. He built a cottage for himself on the east side of Casanova between Ninth and Tenth where he resided until his marriage in 1906. He worked for Devendorf for six years and later went into contracting and remodeling. He died in 1969.

Van Wyck Brooks - Literary historian and novelist, Brooks arrived in Carmel for a short period in 1911. He was the author of *The World of H.G. Wells* and *America's Coming of Age*. Although he was critical of the lifestyle of the bohemians in Carmel, he returned for extended visits during the 1930s and 1940s.

Davenport Bromfield - In April of 1888 W.C. Little and Bromfield were commissioned to survey Carmel City for Santiago Duckworth. Bromfield, Little's apprentice, ended up doing most of the work while living in a small cottage he built for himself on the east side of Carpenter Street between Second and Third.

Ferdinand Burgdorff - Born on November 7, 1881 in Cleveland, Ohio. Burgdorff first came to Carmel in 1908 to visit his friend and fellow Bohemian Club member, Charles Rollo Peters. He soon returned and rented a small portion of the kitchen belonging to the Arts and Crafts Club, which he used as his first studio while often swapping notes with Sidney Yard. He later built a home on Boronda Road in Pebble Beach. Burgdorff died in 1975.

Argyll Campbell - Born on December 2, 1892 in San Jose, Campbell was the city attorney

and responsible for drawing many of Carmel's first zoning laws and ordinances. He is best remembered for writing Carmel's "Magna Carta": The City of Carmel-by-the-Sea is hereby determined to be primarily, essentially, and predominately a residential city wherein business and commerce have in the past, are now, and are proposed in the future to be subordinated to its residential character.

Dorothea Castelhun - Castelhun moved to Carmel from Massachusetts during the 1920s. She published a the series of stories for girls, *The Penelope Books*, and co-authored *Carmel at Work and Play* with Daisy Bostick.

Father Angelo Casanova - Casanova, a priest at San Carlos Church, was responsible for the partial restoration of the Carmel Mission in 1882.

Lena Cherry - Cherry was a poet and artist who moved to Carmel in 1920 with her first husband M.I.T. professor, Dr. Alfred E. Burton. Six years later she left him and their three children for inventor Carl Cherry. They purchased Delos Goldsmith's house which was constructed between 1892 and 1894. After her husband died, Cherry created the Carl Cherry Foundation and remodeled their house into a gallery and theater.

Hugh Comstock - Hugh Comstock developed the Fairy Tale style of architecture with which Carmel has become closely identified. Born in Evanston, Illinois in 1893, Comstock moved to Santa Rosa with his family in 1907. In 1924, he came to Carmel to visit his sister and met and married Mayotta Brown. The two decided to remain in Carmel as Mayotta had a successful doll making business. Comstock's career as a designer-builder began when his wife asked him to build a cottage for her dolls. The "Doll's House" became the first of many Fairy Tale style cottages he would design and build. Comstock's interest in architecture eventually changed, however, to the development of the post-adobe system of construction.

Josephine Culbertson - Culbertson came to Carmel in 1906 with her friend and companion, Ida Johnson. Soon they opened a studio to display their art and built a home at Lincoln and Seventh, known as "Gray Gables." They helped organize the Carmel Art Association, of which Culbertson was the founding vice-president. In addition to their artistic endeavors, they established The Dickens Club, a local boys club.

John Cunningham - Cunningham originally appeared in Carmel in 1926 with a cast of amateur actors from Berkeley. He stayed on for a few months painting sets for the Forest Theater. A decade later he returned with his wife, Pat, and set up permanent residence. In 1939, the Cunninghams bought the Carmel Art Institute from Armin Hansen and Paul and Kit Whitman.

Pat Cunningham - Cunningham, an oil painter and muralist, was the first woman president of the California Art Association. She and her husband, John, bought the Carmel Art Institute from Armin Hansen and Paul and Kit Whitman in 1939.

Dene Denny - born in Callahan, California, Denny acquired a degree from the University of

California at Berkeley. She moved to Carmel in 1924 with her companion, Hazel Watrous. They first built a studio on Dolores near First, which Watrous also designed. From 1927 and 1928 they leased the Golden Bough Playhouse from Edward Kuster and presented eighteen plays. They formed the Denny-Watrous Gallery in 1928 which sponsored concerts and art exhibitions. They also co-founded the Bach Festival in 1935.

Eva K. DeSabla - DeSabla was first elected to public office as a City Trustee October 31, 1916 when Carmel-by-the Sea incorporated. She was reelected April 12, 1920 and appointed president, but resigned from office September 29, 1920. She came to Carmel from Marysville, where she was known as Eva K. Couvileau.

Franklin Devendorf - Born April 6, 1856, Devendorf left his native town of Lowell, Michigan at sixteen to join his mother who lived in San Jose. He later established himself in the real estate business there and in Stockton. In 1902 he acquired Carmel City from Santiago Duckworth and the following year established the Carmel Development Company with Frank Powers. He set the stage for the development of Carmel-by-the-Sea and became its unofficial mayor. He and his wife Lillian had four daughters Edwina, Marion, Myrtle and Lillian.

Paul Dougherty - An artist who achieved fame as a seascapist, Dougherty was a National Academician who settled in Carmel Highlands in 1928. He served as president of the Carmel Art Association in 1940.

Harry Downie - Downie was a cabinetmaker from San Francisco. He was commissioned by Monsignor Philip G. Scher of San Carlos Church to restore the Carmel Mission in 1931. He died March 10, 1980 and was buried along side the mission.

Santiago Duckworth - In 1888, Santiago J. Duckworth purchased 324 acres of land from Honoré Escolle and filed a subdivision map for Carmel City. The area was surveyed by W.C. Little and generally bounded by Monte Verde on the west, Forest Road on the east, Twelfth Avenue on the south and First Avenue on the north. Duckworth, already established in the real estate business in Monterey, planned on developing Carmel City as a summer resort for Catholics, akin to the Methodist retreat already established in Pacific Grove. He opened the Hotel Carmelo on the northeast corner of Ocean Avenue and Broadway (Junipero) in 1889.

Louise Norton Drummage - A native of Illinois, Louise came to California in 1897 to work at the Agnew State Hospital in San Jose. While taking a holiday in Pacific Grove in 1899, she met and later married Melvin Norton, proprietor of the Cash Package Grocery. The couple first visited nearby Carmel in June 1903 where they bought property and established the village's first restaurant. They built a house at Seventh and San Carlos, which was later moved to Ninth and San Carlos. In 1906, Louise opened a baker, and later built the Tel and Tel Building, constructed by Percy Parkes, which was razed in 1957. She later married William T. Drummage.

William T. Drummage - Drummage was sent to Carmel in 1892 as the resident agent for Abbie Jane Hunter. He and his mother moved from San Jose to Carmel in 1898 to a house he built on the lot bounded by San Carlos, Mission, and Fourth streets. In 1899, Abbie Jane Hunter sold Drummage a portion of her Carmel holdings. He was Carmel's first plumber. He later married the widow Louise Norton.

Amos Engle - A landscape artist, Engle moved to Carmel during the 1920s.

Nora May French - A gifted poet and protégé of George Sterling, French came to Carmel in 1907. Sterling built a cabin for her in the Eighty Acres so she would have a place to write. She later committed suicide.

Delos Goldsmith - Born in Painsville, Ohio on September 3, 1828, Goldsmith moved to San Francisco at nineteen where he worked as a carpenter. He moved to Carmel in 1888 and began constructing homes. He was the uncle of Wesley Hunter, husband of Abbie Jane Hunter.

Lee Gottfried - A builder responsible for numerous homes and commercial buildings, alone and as half of the partnership of Gottfried and Hale, Lee Gottfried was active in village life, helping to organize the Abalone League of softball teams and the building and loan society.

Eunice Gray - Gray moved to Carmel during the 1920s and lived in one of the first beach cottages, "The Barnacle." She wrote *Cross Trails* and *Chaparral.*

Charles Sumner Greene - Greene, along with his brother Henry Mather Greene, established the architectural firm of Greene and Greene in Pasadena. Together the brothers developed the Craftsman style of architecture into a high art. When D.L. James engaged Greene in 1914 to design a home on a rocky bluff overlooking the Pacific Ocean, Charles Greene left Pasadena and settled in Carmel. Retiring in Carmel about 1916, he built his own home and studio on Lincoln Street. Greene was a member of the Civic Committee of the Arts and Crafts Club and in 1921 designed the War Memorial Arch at San Carlos and Ocean Avenue. His daughter Bettie built stables on Junipero and Fifth streets which were razed in 1958.

Arnold Genthe - Prussian Arnold Genthe had originally intended to become a teacher in his homeland. He came to Carmel via San Francisco, where he became a member of the Bohemian Club and a fledgling photographer, not long after his friend George Sterling. He built a redwood home on Camino Real near Eleventh and continued to develop his skill and his reputation as a portrait and landscape photographer. While living in Carmel, he took his first color photographs. In San Francisco in 1911, he displayed one of the first exhibitions of color photographs in the United States.

Armin Carl Hansen - Born in San Francisco on October 23, 1886, Hansen studied art at the California School of Design and later in Stuttgart, Germany. He was a painter and etcher who was noted for his portraits of Spanish and Portuguese fisherman of the Monterey Bay.

A National Academician, he was an organizer of the Carmel Art Association—of which he was later president—and the Carmel Art Institute. He died April 23, 1957.

Ella Reid Harrison - Ella Reid Harrison can be considered the most generous supporter of Carmel's library. Harrison bequeathed a large portion of her estate including bonds, land, books and furniture to the city on the condition that they be used to build a public library in memory of her late husband.

Herbert Heron - Heron was born in 1883 in New Jersey. He had been a professional actor with the Belasco and Morasco Stock Company in Los Angeles and first visited Carmel in July of 1908. Returned one year later, Heron built a home at Guadalupe and Mountain View. The following year he formed the Forest Theater Society. Heron also opened the first genuine book shop in 1918 in the Eighty Acres. It was later moved to the Seven Arts Building on the corner of Lincoln and Ocean which he built in 1925, and sold in 1940. In later years he served on the city council and as mayor from 1930 to 1934.

James Hopper - Hopper was born in Paris on July 23, 1876. His first book, *Caybigan,* was published in 1906. He taught school in the Philippines for a while, but returned to the United States to dedicate himself to writing. He wrote more than four hundred short stories and several novels for popular magazines such as *Collier's* and *The Saturday Evening Post.* He moved to Carmel permanently after the San Francisco earthquake in 1906. First renting a cottage on Dolores and Ninth, he later moved into George Sterling's house. After it burnt down, he built a new home on the same site. His first wife, Mattie, was particularly active in raising funds for the development of Devendorf Park. In 1938, Hopper married Elayne Lawson of Monterey, and died in 1956. His daughter Janie married actor Richard Boone and Herb Vial.

Abbie Jane Hunter - Hunter founded the Women's Real Estate and Investment Company in 1892. She acquired partial interest in the development of Carmel City and built the Carmel Bathhouse. She is credited with coining the name Carmel-by-the-Sea.

Robinson Jeffers - Jeffers was born in Pittsburgh, Pennsylvania. He studied various fields including forestry and medicine before deciding to become a poet. Initially considered to have an unpromising career, his genius blossomed during the 1920s. His principal work, *Roan Stallion, Tamar and Other Poems,* was published in 1925. Jeffers and his wife, Una, began renting a house on Monte Verde near Ocean in 1914. Several years later they purchased land on Carmel Point and hired Michael J. Murphy to build a house. Constructed of native granite, they called it "Tor House" because the treeless, wind swept lot facing the ocean reminded them of the tors in England. Observing the stone masons during construction, Jeffers later built "Hawk Tower."

David Starr Jordan - The first president of Stanford University, Jordan built a house at the northeast corner of Camino Real and Seventh in 1905. That section of the street later became known as "Professor's Row." Jordan was also the author of *Blood of the Nation, The Higher*

Sacrifice and *The Strength of Being Clean..*

William Keith - California's best known landscape artist, Keith was born in Aberdeenshire, Scotland on November 21, 1838. He was a prolific artist, however, 2,000 of his paintings, sketches and studies were destroyed in the San Francisco fire of 1906. He died April 13, 1911.

Harry Lafler - Literary editor of the *Argonaut*, Lafler moved to the Carmel area after the San Francisco earthquake. He actually lived down the coast most of the time and wrote for local papers. He also worked on the publication of poems by Nora May French after her death.

Father Fermin Francisco de Lasuen - The building at Mission San Carlos de Borromeo was begun in 1793 under the direction of Father Lasuen.

Sinclair Lewis - The first American to win the Nobel Prize for literature in 1930, twenty-three year old Lewis joined the MacGowan sisters in Carmel in 1908 to act as their secretary and collaborator. The three had met at Helicon Hall, a utopian writer's colony in New Jersey established by Upton Sinclair. For a little over a year Lewis lived in a house on the beach near the MacGowan house; that spring he shared his modest quarters with friend William Rose Benet. He worked off and on as a reporter before becoming a novelist. He won the Pulitzer Prize in 1926 but refused it saying he did not believe in prizes. His principal works include: *Elmer Gantry, Main Street*, *Babbit* and *Arrowsmith.*

W.C. Little - In April of 1888 W.C. Little and Davenport Bromfield were commissioned to survey Carmel City for Santiago Duckworth.

Grace and Alice MacGowan - The MacGowan sisters moved to Carmel in 1908 to join the literary colony. They had already achieved wide popular success with their novels, short stories, essays and poems. They bought a two-story, shingled house located on a cliff above the beach at what came to be known as "Cooke's Cove." They were active in the Forest Theater Society from its founding in the spring of 1910.

Xavier Martinez - Martinez was born in Guadalajara, Mexico on February 7, 1874. He moved to San Francisco in 1893 to study art and in 1895 went to Europe for six more years of study. Martinez returned to San Francisco where he taught at the California School of Arts and Crafts. Most of his impressionist paintings are of the Piedmont hills where he lived; however, he spent summers teaching at the Arts and Crafts Club School and made frequent trips to Carmel to visit friends and sketch. He died January 13, 1943. His house at Carmelo and Sixteenth was occupied by his wife and daughter until 1989.

Laura Maxwell - Maxwell was born in Carson City. Nevada on October 13, 1887. She moved to Carmel permanently in 1918 and opened her first studio at Carmelo and Santa Lucia. She died August 7, 1967 .

Joseph Mora - Sculptor, painter, and writer, Mora was born in Uruguay and came to the United States as a child. He studied art in New York and Boston. After World War I, he moved to Carmel, purchasing a full block at San Carlos and First where he built his home and studio. Soon after his arrival he was commissioned to do the Serra Sarcophagus for the Carmel mission which was completed and dedicated in 1924. Shortly afterward he sold his property in town and moved to Sunridge Road in Pebble Beach. Other notable works by Mora include a monument to Cervantes at Golden Gate Park, the Bret Harte Memorial at the Bohemian Club, and the Memorial Fountain at the Salinas County Courthouse.

Mary DeNeale Morgan - Born in San Francisco in 1868, DeNeale Morgan attended the California School of Design from 1888 to 1890. She later exhibited her art throughout the United States. She visited Carmel briefly in 1903 with her family who helped run the Pine Inn for a little more than a month for Frank Devendorf. Morgan returned the following year and occupied a cottage on Monte Verde near the Pine Inn. Six years later she established her permanent home and studio in the former Sidney Yard studio on Lincoln near Seventh. An avid painter in tempera and oils, active in the support of the Forest Theater and All Saints Church, and one of the founders of the Carmel Art Association, she died in October 1948.

Michael J. Murphy - Born June 26, 1885 in Minden, Utah, Murphy first came to Carmel in 1902. Two years later Frank Devendorf hired him to do the building for the Carmel Development Company. Murphy went on to become the most prolific designer-builder in the history of Carmel, with the Pine Inn, Highlands Inn, La Playa Hotel, Sundial Lodge, Tor House, Harrison Memorial Library, and numerous houses to his credit. In 1924 he established M.J. Murphy Inc., which sold building supplies, did rock crushing and concrete work and operated a lumber mill and cabinet shop located between San Carlos and Mission.

M. M. Murphy - Murphy moved to Carmel during the 1920s and lived at Twelfth and Casanova. He was an author, paleontologist and Navajo Indian Reservation official.

Perry Newberry - Perry Newberry came to Carmel with his wife, Bertha, in 1910. He was formerly on the art staff of the *San Francisco Examiner*. He became the assistant editor of the *Pine Cone* and later its owner until he sold it in 1935. He successfully ran for the Board of Trustees in 1938 and fought to preserve the unique and rural quality of Carmel.

Helen Parkes - Helen Parkes was one of the multi-faceted women who pepper the early history of Carmel. Her accomplishments include stints on the city council and the first planning commission, service as assistant postmistress, botany instructor at Cedar Croft, and reader of the Christian Science Church. She was one of the first members of the Forest Theater Society, and wrote and produced one of its plays, *The Columbine*. In many of her activities she was joined by her life long friend, Stella Vincent.

Earl Percy Parkes - One of the early builders of Carmel, Parkes counted among his commissions the Seven Arts Building erected for Herbert Heron, the Corner Cupboard or Drummage's Drive-in Market, and Monte Verde Inn.

Ralph Pearson - Pearson, a noted etcher, moved to Carmel from New Mexico during the 1920s.

Charles Rollo Peters - Born in San Francisco on April 10, 1862, Peters left the insurance business to become an artist in 1885. Following five years of study in San Francisco and Paris, he settled on the Monterey Peninsula. Peter's home was a gathering place for other artists when he was not working. He died in 1928.

Frank Powers - Generally credited as one of the founders of Carmel, Powers and James Franklin Devendorf became partners in the Carmel Development Company in 1903. An attorney, Powers loved nature and the arts. He maintained the old Murphy property on San Antonio as a vacation home for his family.

Jane Gallatin Powers - Married to Frank Powers, Jane Powers was a painter and a founding member of the Arts and Crafts Club. She was the daughter of one of California's wealthiest industrialists, Albert Gallatin, and the sister-in-law of Ernest Seton Thompson.

Ira Remsen - An artist, Ira Remsen was a New Yorker who had studied painting in Paris. His studio on Dolores Street became the permanent home of the Carmel Art Association in 1933, five years after the artist himself had committed suicide. During his residency in Carmel (on the Highlands), Remsen was active in the Arts and Crafts Club, the Carmel Art Association, and the Forest Theater.

William Ritschel - Marine landscape artist Ritschel was born in Nuremberg, Bavaria in 1864. He came to United States in 1895 and settled in New York City. Having later visited Carmel, he returned in 1918 to build his "Castle" in the Highlands with the help of a Spanish stone mason. Ritschel was a founder the Carmel Art Association and a National Academician. His second wife was Elanora Havel.
Dan Rudhyar - Musician and philosopher, Rudhyar move to Carmel during the 1920s.

Frederick Preston Search - An accomplished cellist and composer, Search and his wife established their home on the corner of Thirteenth and Monte Verde in 1914. From 1920 to 1933 he directed the orchestra at the Del Monte Hotel. Later he lived on Jamesburg Road in the Carmel Valley.

Catherine Comstock Seideneck - Seideneck was the daughter of Nellie Comstock, the patron of the Carmel Art Institute, and the sister of Hugh Comstock. She taught leather work at the School of Fine Arts at the University of California at Berkeley and later at the Carmel Arts and Crafts Summer School.

George Seideneck - Seideneck was born in Czechoslovakia in 1885. He moved to Chicago as a young man where he studied at the Art Institute and later became a commercial illustrator. Upon moving to California, Seideneck was a long time staff artist with the

coastal laboratories of the Carnage Institute as well as a photographer and artist of landscapes and portraits. He belonged to the group which formed the Carmel Art Association and became its first president. His other cultural activities included the Carmel Music Society. Seideneck designed the walls and corners of Devendorf Park. He and his wife Catherine opened their studio in the Studio Building on Ocean Avenue August 17, 1922 and built their home in the Carmel Valley.

Father Junipero Serra - Serra was born in Petra on the Isle of Mallorca on November 24, 1713. He entered the Order of Saint Francis at a young age. At thirty-six, he was sent to Mexico where he was a missionary for nineteen years before being sent to California to establish a chain of missions. He arrived on the shores of the Monterey Bay in 1770 with the Portola exhibition and established the Carmel Mission. Serra went on to establish the seven more missions and died on August 28, 1784.

William Posey Silva - An artist, Silva built the Carmelita Gallery on San Antonio north of Ocean Avenue.

Louis Slevin - An avid photographer, Slevin held the first of many posts in Carmel. A man of many facets, Slevin was a shopkeeper, postmaster, city treasurer, writer, and stamp collector, collector of rare books, and maritime historian. Ranging from 1899 to 1935, Slevin's photographs provide important documentation of the changes in the Monterey Bay area.

Robert Stanton - Carmel architect Robert Stanton was the designer of many notable buildings in the Monterey and Santa Cruz area. A native of Torrance, California, Stanton worked for the architect Wallace Neff as a traveling superintendent during the early 1930s. In 1934, he moved to Carmel which he had developed a liking for during his honeymoon at the Highland Inn twelve years earlier. His first commission in the area was the Salinas County Courthouse in 1935. He also designed some sixteen hospitals and forty schools.

Lincoln Steffens - Political writer and social critic, Steffens was born on April 6, 1866 in San Francisco. He received a Ph.D. from the University of California. He became a "muckraking" reporter and held several editorial positions with magazines including *McClure's Magazine* and *American Magazine.* He and his wife, Ella Winter, moved into a cottage on San Antonio near Ocean during the 1920s where he wrote his autobiography and edited the *Pacific Weekly.*

George Sterling - Poet George Sterling came to California in 1890 from Sag Harbor Long Island. He studied for the priesthood for three years, then left to work for his uncle, Frank Havens, as an insurance agent. He married Carrie Rand and settled in Piedmont. His friend, Ambrose Bierce, helped him publish his first collection of poems in 1903. Jack London introduced him to Mary Austin who in turn introduced him to Carmel in the summer of 1905. He built a house in the Eighty Acres on Torres between Tenth and Eleventh. Sterling committed suicide in 1926.

Saidee Van Brower - Saidee Van Brower was first elected city clerk in 1920 and won every bid for reelection thereafter. A dance instructor in Berkeley, Van Brower was one of the many artistic-minded people who moved to Carmel in 1907. She performed in the Forest Theater productions as well as directed the corps de ballet.

Stella Vincent - Like her close friend Helen Parkes, Stella Vincent was prominent in several aspects of village life. Librarian from 1911 until 1915, she was assistant postmistress during the tenure of I. E. Payne and assumed the principal post in 1918, serving until 1929. She was one of the founding members of the Forest Theater Society, was an officer of the Bank of Carmel established in 1923, and was an early member of the Christian Science Church.

Grace Wallace - Wallace moved to Carmel during the 1920s and lived at "Wee Gables" on Camino Real near Thirteenth. She was known for her plays *Sun Gazers* and *Poorest of the Poor.*

Hazel Watrous - Watrous was a supervisor for the Alameda school system. She moved to Carmel in 1924 with her companions Dene Denny, who she met at Berkeley. They first built a studio on North Dolores, which Watrous also designed. From 1927 and 1928 they leased the Golden Bough Playhouse from Edward Kuster and presented eighteen plays. They formed the Denny Watrous Gallery in 1928 which sponsored concerts and art exhibitions. They also co-founded the Bach Festival in 1935. In addition to being active in drama, music and art, they designed thirty-six houses in Carmel. Watrous also served on the city council.

Florence Wells - Wells came to Carmel in 1908. She was one time president of the San Francisco Women's Press Club. Wells owned and built the first house on the Point, "The Driftwood."

Edward Weston - Nationally recognized photographer. Weston moved to Carmel in 1929 and established a small studio to support his children. In 1932 Weston, along with Ansel Adams, was one of the seven founding members of the F/64 Club which promoted straight photohraphy as a true art form. Weston is best known for his interpretations of the natural environment (Point Lobos, Big Sur, Carmel Valley and the Southwest) and for his insightfull portraiture. In 1937 he relocated to a small caabin built by his son above Wild Cat Creek in Big Sur.

George W. Whitcomb - Born in 1898, George Whitcomb was one of the builders who shaped early Carmel. Like many of his contemporaries in Carmel, he was not formally trained as an architect; rather, he had been an instructor in mechanical drawing and manual training in Minnesota before coming to Carmel. His first local project was the Hagemeyer studio and home, now the Forest Lodge on Mountain View, in the 1920s.

Paul and Kit Whitman - The Whitmans helped found the Carmel Art Institute in 1937.

Michael Williams - One time city editor of the *San Francisco Examiner,* Williams moved to Carmel after the San Francisco earthquake. He was noted for his collaboration with Upton Sinclair on two books in 1908 as well as his own books, *The Little Flower of Carmel* and The *Little Brother Francis of Assisi.*

Harry Leon Wilson - Author of *The Spenders* and *The Lions of the Lord* and contributing editor of the *Puck* in New York, Wilson was one of the first writers to move to Carmel along with George Sterling. His home, known as "Ocean Home," was located near Sterling's in the Eighty Acres.

Fannie Yard - The wife of artist Sidney Yard, she was the director of Cedar Croft, the Arts and Crafts Club Summer School.