



NOTE TO READER

As you review the Administrative Draft Carmel General Plan Update, please note the following:

Issues Table – this table is included for reference only and summarizes the main issues raised by the public during the workshops and from the Community Survey and provides conclusions and recommendations relative to the General Plan Update process. This table will be removed prior to publication of the General Plan Update.

Policies “Track Changes” – changes to the Goals, Objectives, and Policies section are shown as “track changes” (~~strike through~~ for deletions and underline for inserts) to allow the reader to see the specific policy changes and easily identify new policies.

Planning Commission Direction – the following policies were identified by City staff as needing the Planning Commission direction.

- Circulation Element
 - P2-16 – clarify the intent of the policy
 - P2-29 – provide direction for addressing the truck double parking issue
- Open Space and Conservation Element
 - P7-5 – clarify intent of the policy
 - P7-B – provide direction regarding the future of Rio Park

Supporting Information – Each of the five general plan elements contain a section entitled “Supporting Information” which provides the context of existing conditions in the City and key issues that are addressed in the policy section. Given the fact that these elements have not been updated in many years, RBF, working with City staff, made substantial revisions to these sections to reflect current conditions in the City and to be consistent with current state guidelines. Due to the volume of changes, these sections are not shown in “track changes” format.



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CIRCULATION ELEMENT



Issue	Majority	Split Opinion	Conclusions and Comments	Action
Congestion in Commercial District	S – Not perceived as an issue in daily lives		CONTINUE to implement congestion policies currently in place, adjusting for any changes in traffic (increased volumes, changes in speed limits, street layout, etc.)	No action required – continue to implement the following policies: P2-7, P2-10, P2-11
Pedestrian safety	S – Most neighborhoods are safe		CONTINUE to implement pedestrian safety policies.	Continue to implement P2-1.
	S – Improve safety at Ocean/Junipero Ave, near the beach, and Scenic Drive		SUPPORT for improving pedestrian safety in high traffic areas.	Establish policies addressing pedestrian safety in high traffic areas.
	W – improve pedestrian trails/walkways; consider permanent street closures downtown in favor of pedestrian movement		SUPPORT for improving pedestrian walkways.	
Traffic calming measures	W – support for various calming measures, with the exception of speed bumps	S – Equally divided (for and against) when it comes to introducing more traffic calming measures in the City.	MODERATE OPPOSITION to introducing traffic calming measures. CONTINUE current policies. Note: The City already has a lot of traffic calming measures due to the street layout and landscaping in ROW. There was no opposition to continuing these as they are perceived as part of the City's charm and/or part of the urban forest.	No action required – continue to implement policies P2-1 through P2-4, P2-6, P2-8.



Issue	Majority	Split Opinion	Conclusions and Comments	Action
Speeding cars	S/W – Excessive speeding through town and distracted drivers who drive through stop signs.		SUPPORT for addressing the speeding cars. Note: While residents perceive speeding cars and distracted drivers as one of the major traffic related issues, they oppose introducing traffic calming measures.	Continue to implement policies : P2-1, P2-7, P2-10.
Delivery trucks issues	S/W – Large vehicles, which either block an entire lane or obstruct clear views of the traffic at an intersection		SUPPORT for addressing delivery truck issues. Use loading zones, enforcement for double parking.	Review the reasons for failure of existing policies regarding the delivery truck issues (P2-21 – the loading portion has to be improved; P2-29 – doesn't work; P2-30 – not implemented). Explore methods for correcting these policies.
Parking	W – increase efficiency of existing parking utilization		SUPPORT for a program that will increase utilization of the existing City parking.	No action required – continue to implement policies : O2-3, O2-4, P2-21 to P2-23.
Parking in Commercial District	S – Parking in commercial district not a big frustration for locals	SN – need for employee parking and lack of parking overall in the commercial district	SUPPORT for a program addressing parking shortage in the commercial district especially for employees and visitors. Note: While most residents do not perceive parking in the CD as a problem, they identify an overall need for more parking in the CD. Employee parking is brought up as an issue. However, depending on solution proposed the support may vary (see Parking Structure below).	
	S – The City needs more parking serving the commercial			



Issue	Majority	Split Opinion	Conclusions and Comments	Action
	district			
	W – Employee parking in the commercial district is an issue that needs to be addressed			
Parking structure		S – no strong support for building a new parking structure.	OPPOSITION to constructing a new parking structure in the City.	Continue to implement policies P2-14, P2-16, when considering a parking structure.
		SN – equally divided between supporting and opposing a new parking structure.		
		W – divided between support and opposition to a new parking structure, leaning towards opposition		
Parking in residential areas	W – develop/maintain special permits for residents; resident-only parking in residential areas	SN – identified the shortage of parking in residential areas as a concern.	MODERATE SUPPORT to addressing residential parking issues. Note: There was no specific question related to residential parking, but it came up in the narrative responses and the workshops. Therefore the scale of the issue was not fully explored. It should be also noted that if the CD	P2-18 – revised, as already implemented.



Introduction and Purpose

The Circulation Element is a required element of the City’s General Plan. Government Code Section 65302(b) states that a circulation element shall consist of: “...the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element of the plan.”

The overall purpose of the Circulation Element, as outlined by the State of California General Plan Guidelines is to:

- coordinate the transportation and circulation system with planned land uses;
- promote the efficient transport of goods and the safe and effective movement of all segments of the population;
- make efficient use of existing transportation facilities;
- protect environmental quality; and
- promote the wise and equitable use of economic and natural resources.

This Element provides goals, objectives and policies that will help to control traffic volume and reduce traffic congestion in Carmel. Because the City is largely built-out, the focus of these policies is to maintain a safe environment for vehicle and non-motorized transportation (e.g. pedestrians and bikes) and encourage alternative modes of transportation to help minimize the adverse affects associated with single cars. Many of the policies in this Element are also part of the Local Coastal Land Use Plan and are noted as such (LUP).

This Element also includes supporting information that describes existing traffic volumes, traffic safety, parking, and alternate modes of transportation as well as findings gathered through the Community Survey (Survey). The Survey was prepared as part of the public outreach process to gain a broader response from the community, property owners, and businesses on issues facing Carmel. The complete Survey report can be found in Appendix A.

Issues of Local Significance

Traffic in the City of Carmel is unique in that it experiences heavy peak periods during weekends and over the summer when there are a high number of tourist. Many of the visitors can be considered short-term or “day visitors,” who travel by car from other bay areas to Carmel and the Monterey Peninsula for the day. This “day visitor” phenomenon often places a burden on Carmel’s circulation and parking facilities, particularly in the downtown area and the Del Mar parking lot located at the west end of Ocean Avenue.

This Element addresses the following issues of local significance.



- Traffic Congestion and Circulation Patterns:
 - Traffic congestion in the commercial district,
 - Delivery trucks double parking,
 - Tour buses,
 - Seasonal traffic patterns, and
 - Pedestrian safety and auto/pedestrian conflicts at many of the downtown intersections.
- Parking:
 - Parking for residents, employees and visitors, and
 - On- and off- street parking supply.
- Alternate Modes of Transportation:
 - Bus service,
 - Local shuttle service, and
 - Bike routes.



Goals, Objectives and Policies

G2-1 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, while~~ preserving the residential character and village atmosphere of Carmel. (LUP)

O2-1 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. (LUP)

P2-1 Maintain the current street configurations. Maintain or reduce paving widths in the residential areas, ~~in order~~ to maintain safe speeds compatible with pedestrian circulation and preserve the residential character. (LUP)

P2-2 Continue the City policy of not developing residential streets to full width.

P2-3 Prohibit the construction of formal sidewalks and concrete curbs in the R-1 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. (LUP)

P2-4 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). (LUP)

P2-5 Continue to restrict street signs and only permit those signs that are necessary and essential for public safety. (LUP)

P2-6 Maintain and encourage informal landscaped median strips and natural landscaped areas within public rights-of-way. (LUP)

P2-7 Discourage high volume through-traffic. (LUP)

P2-8 Prohibit the removal of significant trees within public rights-of-way except when required for health and safety. (LUP)

~~**P2-9** Review the traffic patterns on Scenic Road.~~

P2-A Continue to maintain the designated bus, truck, and bicycle routes as shown on Figure 2.2.



- [O2-A](#) [Ensure safety improvements are undertaken in response to the changing travel environment.](#)
- [P2-B](#) [Establish a program to collect and evaluate traffic collision data at critical collision locations for automobiles, bicycles, and pedestrians.](#)
- [P2-C](#) [Improve traffic safety by installing and maintaining traffic signs, pavement markings, traffic calming measures such as speed humps, pedestrian islands, and other pedestrian-friendly features, where necessary.](#)
- O2-2** 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. (LUP)
- P2-10** Design and construct where appropriate, roadway improvements which eliminate the adverse impacts of high volume through traffic. (LUP)
- P2-11** Recognize that the impact of a large number of non-resident 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. (LUP)
- P2-12** Limit the distribution, character and intensity of land uses that generate increased levels of traffic beyond the capacity of the existing street system.
- P2-13** ~~Review land use and transportation actions to determine air quality impacts and ensure that air quality is preserved. Consider ways to improve air quality as part of the review of land use and transportation projects.~~
- O2-3** Recognize ~~that Carmel is a limited resource and limited in size, and~~ that it is not practical to provide sufficient parking ~~for the~~ that meets total demand at every location; ~~but that~~ it is desirable, ~~however, to remove parking off congested streets and to~~ provide, where practical, alternate parking ~~where it could be removed from public view and~~ in a scale appropriate to Carmel. (LUP)
- P2-14** 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. (LUP)



- P2-15** Encourage mixed-use developments on City owned lots in the downtown area (e.g. parking and housing).
- P2-16** Investigate possible public parking locations in the commercial areas, in the R-4 area and existing sites devoted exclusively to parking in the R-1 district.

Important discussion issue for the PC

- P2-17** Review and consider changes to the in-lieu parking regulations.
- P2-18** ~~Continue to maintain the residential parking permit system in designated residential areas and explore expanding the program to other impacted residential areas. Explore and define a residential parking permit system that would limit residential parking area to residents and their invitees.~~
- P2-D** Work with local businesses in establishing ways to reduce employee parking impacts on neighboring residential and commercial areas.
- ~~**P2-19** Investigate the possibilities of a commercial parking assessment district to finance parking facilities.~~
- ~~**P2-20** Explore as a long term solution the provision and designation of a parking area outside of town for tour bus parking.~~

O2-4 Require that all new developments provide sufficient off-street parking facilities. (LUP)

- P2-21** 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 demand. (LUP)
- P2-22** Avoid overbuilding parking capacity Use by using average demand factors instead of peak demand when establishing parking requirements. ~~Recognize and recognizing~~ that street parking resources are part of the supply. ~~Avoid overbuilding parking capacity.~~ (LUP)
- P2-23** Use off-site parking and fees in-lieu of parking, ~~in order~~ to meet parking ~~needs demand~~ generated by ~~core area~~ downtown commercial land uses. (LUP)



O2-5 Encourage and participate, ~~where appropriate,~~ in programs promoting alternative modes of transportation ~~for employees working~~ in Carmel.

~~**P2-24** Provide incentives for carpooling, particularly employee car pooling, and designate some parking spaces to be used for carpools only.~~

~~**P2-25** Encourage use of public transit by Carmel employees who reside outside the community. This could be accomplished through a joint effort of the City government, Carmel businesses and the Monterey-Salinas Transit through one or more of the following programs:~~

~~Employer/City subsidized passes~~

~~Informational materials made available to all businesses~~

~~Ride sharing or car/van pooling coordination program~~

~~With financial assistance from employers (where feasible), explore sites located along Highway 1 at Carmel Rancho, or on County property for the purpose of providing satellite parking lots with shuttle bus service to the downtown commercial area for employees. These parking lots could be combined with the areas needed for tour bus parking.~~

P2-E Implement pedestrian, bike, and local mass transit improvements through the Capital Improvement Program.

P2-F Work with appropriate agencies to seek funding for pedestrian and bicycle projects.

P2-G Explore alternative forms of transit services, such as a bus shuttle, for the downtown, beach, and Carmel Mission.

P2-H Establish an employee parking strategy that includes remote parking and shuttle services for the business district.

P2-I Encourage businesses and their employees to participate in ridesharing, bus pass, and shuttle programs.

P2-J Work with local business to provide information pamphlets on transit alternatives for distribution at local stores and hotels.



- O2-6** Maintain a sufficient supply of short-term parking with frequent turn over for the primary benefit of residents. (LUP)
- P2-26** Retain short-term parking spaces at the corner of each block to serve short-term parking needs. (LUP)
 - P2-27** 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. (LUP)
 - P2-28** Continue the City's strict enforcement of parking regulations.
- O2-7** Establish and maintain a smooth flow of traffic within the City and support efforts to establish smooth traffic flows within the City's Sphere of Influence.
- P2-29** Recognize that truck deliveries and double parking are a traffic circulation problem and evaluate legal methods for improving circulation patterns; evaluate establishing set delivery times and designating truck parking spaces as well as other methods; enforce the City's current policy which limits deliveries to one side of the street under certain conditions specified by law.

Important discussion issue for the PC

- P2-30** Explore removal of some on-street parking on ~~one side of~~ some narrow commercial and residential streets to ensure adequate emergency access. Removal of on-street parking in the commercial area shall be concurrent with the addition of new off-street parking and the creation of loading zones to improve traffic circulation.
- P2-31** Establish traffic volume counting and monitoring procedures on an annual and seasonal basis for the purpose of establishing an accurate local database.



Supporting Information

Historical Background

The first streets in Carmel were unpaved paths between scattered structures. For many years after incorporation in 1916 the streets of Carmel remained unpaved although streets were ultimately developed in accordance with the original City plat as proposed by S.J. Duckworth.

Early photographs of the village reveal Ocean Avenue as an unpaved road extending through what would become the center of the commercial area. At that time, there was little need for sophisticated management of a circulation system. Automobile, pedestrian and equestrian traffic was low in volume and generally meant to serve the residents and the few occasional and seasonal visitors. During those early years of the twentieth century, gradual growth was encouraged by local realtors and merchants, but in keeping with a truly village atmosphere; paved streets, gas and electric service and plumbing were nonexistent. The paving of streets was considered “destructive” (Orth, 1970).

Regional transportation accompanied settlement of the Monterey Peninsula and the Carmel Valley area. The original highways were wagon trails. In the 1920s, several years after Carmel's incorporation, the Monterey Highway (now State Highway 1) was constructed.

In 1931, Ocean Avenue was paved for the first time. Median parking was provided in the now planted median strip. During the late thirties and early forties, median parking was removed from Ocean Avenue and by 1968, diagonal parking along both sides of Ocean Avenue was replaced by parallel parking (Askew, Department of Public Works, 1981). This transition greatly altered the appearance of Ocean Avenue; its present paved condition is in sharp contrast to the original unpaved road bisecting the sparsely settled village.

The streets are narrow in width, 26 to 34 feet, with no gutters or sidewalks. This lack of formal development of streets throughout Carmel (with the exception of some of the downtown thoroughfares) has been a conscious effort on the part of residents to maintain a “village in a forest” atmosphere.

Traffic and Circulation Background

Carmel-by-the-Sea is a fully developed community with a distinct “village” character. The City's charm along with cultural and recreational amenities attract many visitors to Carmel. As a developed community with a centralized commercial core surrounded by residential land uses, Carmel experiences many unique situations relating to traffic, circulation, parking and pedestrian safety.

The City has approximately 30 miles of paved roadway, the majority of which are narrow and with the exception of some thoroughfares in the downtown commercial district, the streets have no gutters or sidewalks. This design was intentional, to preserve the small village character



desired by the residents and sought after by visitors. Contributing to the village character, streets are rarely paved to their full width and often meander around trees and landscaped areas.

However, this desirable characteristic of the community contributes to visitor traffic and congestion within the City. The limited parking resources in the commercial district and near the beach are also affected during the high use times. In addition, the absence of overhead street lights and paved sidewalks in residential areas influences pedestrian safety.

These traffic, circulation, and parking challenges are especially evident during the height of tourist season and special events, such as three day weekends, golf tournaments, and tour de elegance.

Traffic Congestion/Circulation Patterns

The City of Carmel-by-the-Sea traffic volumes are somewhat variable, depending upon the season, day of the week, or even time of the day. In summer and on most weekends throughout the year large numbers of tourists and smaller numbers of employees cause traffic volumes to increase on the major thoroughfares, particularly on Ocean Avenue.

Traffic Volumes

Table 2.1: Traffic Volumes on Selected Carmel Streets, provides traffic counts for various locations within the City, including areas within the commercial district, beach, and truck route. The traffic counts were performed during the months of June and July to record the highest traffic volumes experienced in the City.

As shown in Table 2.1: Traffic Volumes on Selected Carmel Streets and Figure 2.1: Traffic Counts, the highest volumes were recorded along the truck route (Carpenter Street, Junipero Avenue, and Rio Road) and Ocean Avenue. These roadways act as gateways into central Carmel and the Pebble Beach gate located on San Antonio Street and are the principal roadways within the City. In addition, traffic volumes on Ocean Avenue are partly due to motorists who make a scenic loop through Carmel by driving down Ocean Avenue to the beach, turning southbound onto Scenic Road and exiting on Santa Lucia Avenue/Rio Road back to Highway 1.



Table 2.1: Traffic Volumes on Selected Carmel Streets

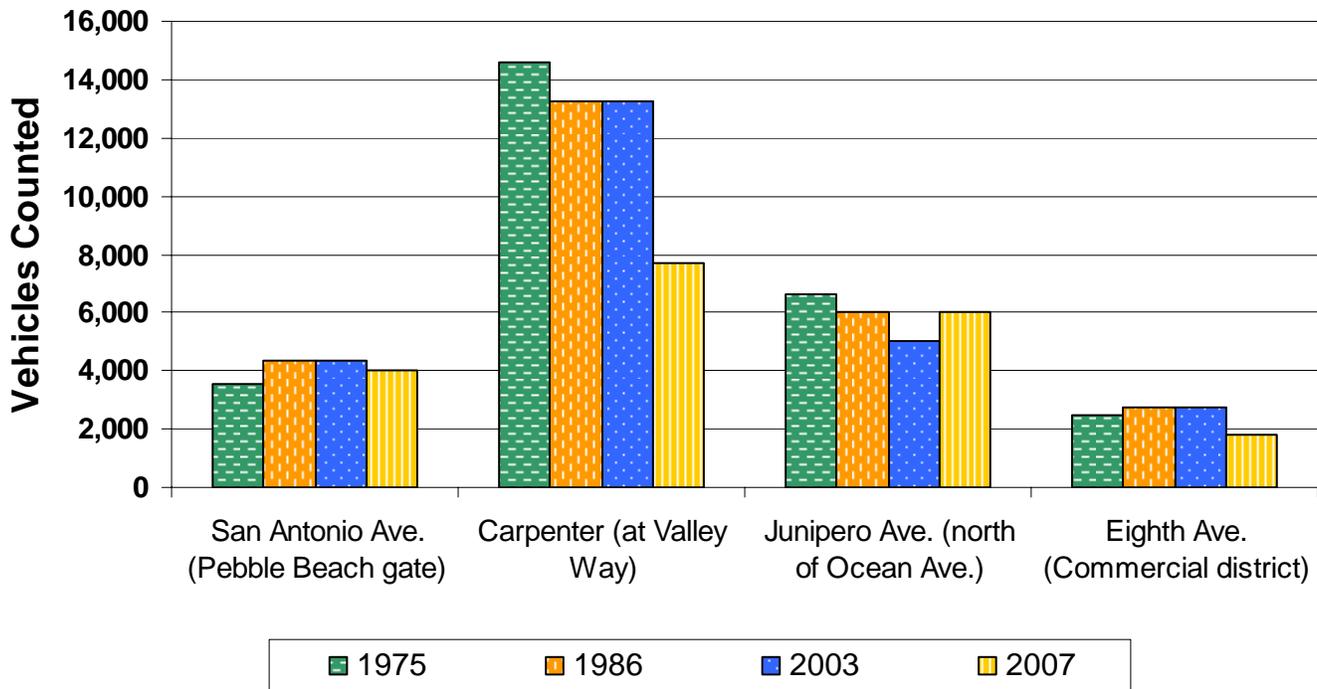
Key	Street	Segment	Volumes *
1	Camino Del Monte	At Junipero Avenue	4,552
2	Carpenter Street	North of First Avenue	7,731
3	Eighth Avenue	East of Lincoln Street	1,788
4	First Avenue	At Mission Street	410
5	Junipero Avenue	North of Sixth Avenue	6,002
6	Monte Verde Street	North of Fifth Avenue	1,781
7	Ocean Avenue	East of Carpenter Street	11,322
8	Ocean Avenue	West of Junipero Avenue	8,251
9	Ocean Avenue	East of San Antonio Avenue	5,500
10	Rio Road	At Ladera Drive	9,886
11	San Antonio Avenue	North of Fourth Avenue	3,985
12	San Antonio Avenue	North of Seventh Avenue	2,497
13	San Carlos Street	North of Sixth Avenue	3,659
14	Santa Lucia Avenue	West of Dolores Street	3,399
15	Scenic Road	South of Eighth Avenue	1,467
Notes:			
* The number represents total number of cars on the identified segment over 24-hour survey. The counts were performed in June and July of 2007.			
Source: RBF Consulting, 2007.			

Graph 2.1: Daily Traffic Volume Comparison, illustrates traffic volumes for four areas within the City over the period of approximately 30 years. The areas compared include San Antonio Avenue (at Pebble Beach gate), Carpenter Street (at Valley Way), Junipero Avenue (north of Ocean Avenue), and Eighth Avenue (within the commercial district).

With the exception of Carpenter Street, daily traffic volumes have remained fairly consistent over the 30 year period. The segment of Carpenter Street in the vicinity of Valley Way has experienced a reduction in daily traffic volumes, particularly between 2003 and 2007.



Graph 2.1: Daily Traffic Volume Comparison



Source: City of Carmel-by-the-Sea traffic volume counts (1975, 2003), RBF Consulting (2007).

Commercial District Traffic

As a result of externally generated traffic associated with visitors and tourists, many of the downtown streets and intersections in the commercial district carry traffic volumes that exceed their design capacity, especially during the peak season and peak hours of use in the downtown area. Most of the visitors have destinations in the central six square block area of the downtown business district. This extremely heavy volume of traffic traveling into Carmel's small central business district was never anticipated many years ago.

There are two aspects to the congestion problem downtown. One is congestion caused by too many cars; the other is the conflict between motorists and pedestrians. High vehicular travel counts are closely related to high pedestrian counts. The intersection most directly affected by vehicular/pedestrian conflicts is the San Carlos Street/Ocean Avenue intersection. Often, cars must wait for several pedestrians to cross before proceeding. This situation is compounded by the fact that there are no traffic signals in Carmel. The lack of traffic controls has been a specific directed action over the years in Carmel in order to preserve the residential character; although additional stop signs have been added in some locations to improve safety.



In addition, the flow of auto traffic is often impeded by the presence of trucks double parking on downtown commercial streets. On some streets two-way traffic is channeled into a single lane, resulting in traffic constrained by truck double parking. On Ocean Avenue, the problem of two-way traffic being channeled into a single lane is avoided due to the two-lane roadway in each direction. However, the higher traffic volume on Ocean Avenue, eliminates any benefits that the two lane layout provides.

Beach Traffic

During most of the year there is not enough vehicular traffic at the beach to cause congestion; but during the summer or on sunny weekends, there is congestion at the western terminus of Ocean Avenue at the Del Mar Parking lot. During peak periods the parking at the Del Mar parking lot and along Scenic Road is inadequate, and causes an intrusion of beach parking into nearby residential neighborhoods. However, much of the time there is more than adequate parking along Scenic Road, even when parking areas in the commercial districts are congested. In addition, the visual qualities of a drive on Scenic Road and the fact that it is one-way street encourage low speeds and keeps traffic moving at all times.

Bus and Truck Routes

The width constraints due to design and topography affect not only residential streets, but also the access routes into the commercial district that serve larger vehicles such as trucks and buses. The City-designated truck and bus route forms a circular route from Highway 1 via Carpenter Street, Second Avenue, Santa Fe Avenue, Junipero Avenue, Eighth Avenue, San Carlos Street, Thirteenth Avenue, and Rio Road back to Highway 1 (see [Figure 2.2: Bus, Truck, and Bike Routes](#)).

Vehicular Pedestrian Conflicts/Safety

Monterey Peninsula's unique location, history, and cultural and recreational events attract as many as 10 million visitors each year and Carmel is one of the most popular tourist destinations (Carmel 2003b). The popularity of Carmel's specialty shops, restaurants, and walkable downtown result in a significant number of pedestrians, particularly during the summer months. These large numbers of pedestrians, coupled with heavy traffic, often results in vehicle-pedestrian conflicts. A 2003 City-Wide Safety Study identified areas within the City which experienced accidents involving pedestrians. A majority of these incidents occurred within the commercial district area. Roadways in the vicinity of the ocean (Scenic Road, San Antonio Avenue, Ocean Avenue west of Carmelo Street) also experienced some accidents (Carmel 2003b).

As shown in [Table 2.2: Traffic Accident Record for Carmel \(2004 to 2008\)](#), the number of injury and non-injury accidents have been decreasing over the last five years. The highest number of incidents was recorded in 2004 and the lowest number of incidents was in 2007. The highest number of collisions with injury was recorded in 2004 and 2006, where 15 of the total incidents for each respective year resulted in an injury. The only fatality resulting from traffic



accidents over the past five years occurred in 2007 at the intersection of Junipero and Ocean Avenues.

Table 2.2: Traffic Accident Record for Carmel (2004 to 2008)

Type of Accident	Average 2004-2008	2004	2005	2006	2007	2008
Collision without injury	85.8	105	97	96	61	70
Collision with injury	12.4	15	11	15	13	8
Total	98.2	120	108	111	74	78
Note: The values provided in this table represent accidents that were reported to the police. In addition to the reported incidents, there are cases in which parties involved in an accident exchange insurance information and do not notify police.						
Source: City of Carmel Police Department, 2009.						

The Survey performed by the City as part of the General Plan update process (2008) revealed that most respondents perceived a majority of the City's neighborhoods as being safe for pedestrians. Areas identified as potentially unsafe included the intersections along Ocean Avenue within the commercial district (particularly Ocean and Junipero Avenues), as well as some areas around the beach and along Scenic Drive. Because these areas experience higher vehicular and pedestrian traffic, the chances of conflict increase.

Parking

Parking Supply Off-Street

Off-Street Parking Requirements

The City of Carmel-by-the-Sea Zoning Code defines parking requirements for each zoning district. Requirements for different land uses within residential and commercial zoning districts are listed below in [Table 2.3: Parking Standards](#). No on-site parking is required for residential apartments in the Central Commercial District.



Table 2.3: Parking Standards

Land Use	Basis for Requirement	R4	CC	SC	RC
Permanent Residential Use	Spaces per unit	1.5	1.0	1.0	1.5
Affordable Housing for Moderate, Low, or Very Low Income	Spaces per unit	0.5	0.5	0.5	0.5
Senior Housing, Cooperative Housing or Group Care Facilities	Spaces per unit	0.33	0.33	0.33	0.33
Nursing Home or Other Residential Care Facilities	Spaces per patient or resident	0.33	N/A	0.33	0.33
Transient Residential	Spaces per rental unit	1.0	1.0	1.0	1.0
Commercial Retail and Other Uses	Spaces per 600 square feet of commercial floor area or per business/shop space, whichever is greater	1.0	1.0	1.0	1.0
Hotels and Motels	Spaces per rental unit, including manager's unit	1.0	1.0	1.0	1.0

Source: City of Carmel-by-the-Sea Zoning Code, 2009.

Existing developments are exempt from these requirements. However, if a development proposes remodeling or expansion, the new development would be required to comply with the above defined parking standards. In cases when unique circumstances such as site topography, shape or size, prevent a development from meeting the parking standard, City regulations allow for some flexibility, such as parking at another location.

The City also allows for payment of in-lieu of parking fees, as long as a development is not a hotel or a motel. The money goes into the City's In-Lieu Parking Fund and is used only for the acquisition and development of off-street parking in or near the commercial district. The amount of the fee is determined based on current construction costs of a 400 square feet parking space, plus 50 percent to reflect the cost of land. This fee is required for each full in-lieu parking space.

Public Off-Street Parking

The City of Carmel-by-the-Sea owns and maintains 14 public parking lots providing 423 parking spaces within and adjacent to the City's commercial district. [Figure 2.3: Public Off-Street Parking](#) and [Table 2.4: Off-Street Parking Facilities](#), provide the location and number of spaces provided in each facility.



Table 2.4: Off-Street Parking Facilities

Key	Lot Name	Street	Between/At	Total Spaces
1	Vista Lobos	Torres Street	3 rd and 4 th Avenues	63
2	Norton Court	Dolores Street	5 th Avenue	40
3	Post Office	Dolores Street	5 th Avenue	18
4	Harrison Library	6 th Avenue	Lincoln Street	5
5	Park Branch Library	6 th Avenue	Mission Street and Junipero Avenue	17
6	Ocean Avenue	Ocean Avenue	Camino Real and Casanova Street	10
7	Ocean Avenue	Ocean Avenue	Casanova and Monte Verde Streets	17
8	Ocean Avenue	Ocean Avenue	Camino Real and Casanova Street	14
9	Ocean Avenue	Ocean Avenue	Casanova and Monte Verde Streets	12
10	City Hall	Monte Verde Street	Ocean and 8 th Avenues	8
11	Sunset Center	8 th Avenue	Mission Street	137
12	Sunset Center	San Carlos Street	9 th and 10 th Avenue	34
13	Sunset Center	San Carlos Street	9 th and 10 th Avenue	18
14	Sunset Center	Mission Street	9 th and 10 th Avenue	30
TOTAL				423
Source: City of Carmel-by-the-Sea, 2007.				

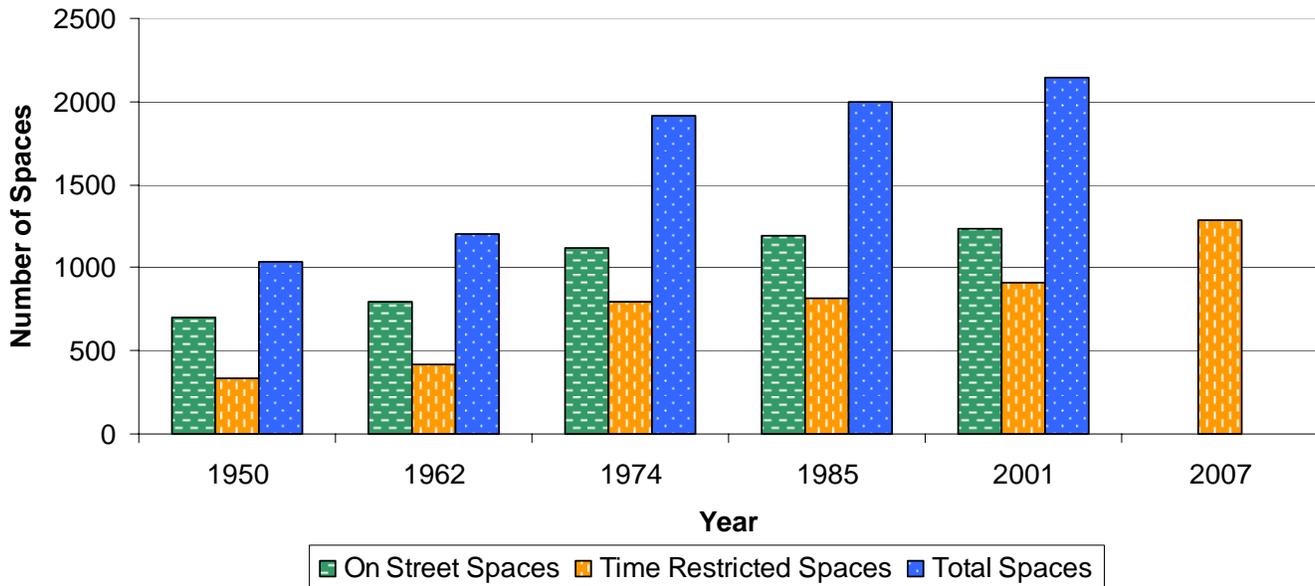
Parking Supply On-Street

In addition to off-street parking, the City also includes a substantial number of on-street parking. As shown in [Graph 2.2: Commercial District Area Parking Supply](#), the number of parking spaces provided within the City’s core has increased significantly over the years. As of 2007, about 1,790 parking spaces exist throughout the business district. 1,284 of these spaces are timed curbside stalls. The remaining spaces are scattered throughout the City including Sunset Center, Del Mar, Scenic Drive, Vista Lobos, Library, and City Hall. Of the 1,284 timed spaces in the business district there are 773 public curbside parking spaces designated as 2-hour timed zones. In addition, there are 113 thirty minute (green) zones, many of which are located on Ocean Avenue or on side streets that run north and south of Ocean Avenue.



Graph 2.2: Commercial District Area Parking Supply

Commercial District Area Parking Supply



Note: The 2007 parking survey focused on the time restricted spaces in the business area.
Source: City of Carmel by-the-Sea, 2009.

Residential Parking Permit

Two factors contribute to heavy use of the residential area surrounding the commercial district for parking by nonresidents. First is the minimal number of long-term parking spaces within the commercial district itself, which forces the all day parker into surrounding areas. Second, the consistent use of short-term spaces within the commercial district by all-day employee parkers perpetuates the practice of visitors being forced to park in the commercial periphery.

To limit tourist and visitor parking in the residential areas, the City established a residential parking permit program in the R-1 and R-4 residential zoning districts in 1981. The permit can be issued to persons residing in either of these zones, who can prove ownership of the residence and vehicle subject to the permit. The residential permit also allows residents to park in the downtown area for extended periods (three hours in parking spaces marked for 120-minute parking and double time in green parking spaces, with the exception of 10-minute timed zones).

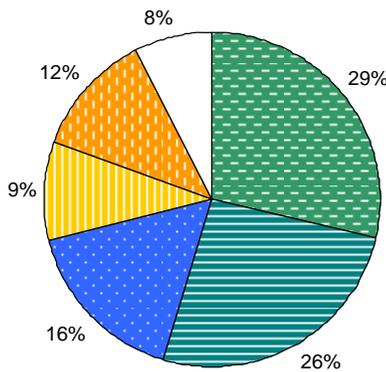


Community Opinion on Parking

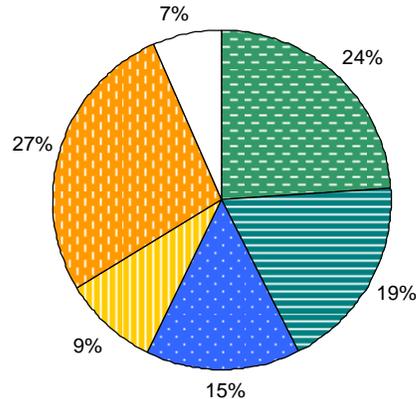
Based on the Survey, residents do not perceive parking in the commercial district as a problem in their daily lives. The respondents reported finding adequate parking in the commercial district without much frustration. However, the respondents recognize that this is not often the case for the tourist and visitors to the commercial district, who often have a hard time finding parking.

As illustrated in Graph 2.3: Commercial District Parking Needs, over 50 percent of respondents agreed that the City needs more parking serving the commercial district. However, only slightly over 40 percent agreed that the City should build a parking structure (see Graph 2.4: Parking Structure Opinion).

Graph 2.3: Commercial District Parking Need



Graph 2.4: Parking Structure Opinion



1 = strongly agree	2 = somewhat agree	3 = Neutral/ No opinion
4 = Somewhat Disagree	5 = Strongly disagree	□ No Response

Source: City of Carmel-by-the-Sea, 2008.

Most respondents felt that a parking structure built either at Sunset Center or Vista Lobos would primarily serve shoppers and visitors to Carmel’s commercial district, and therefore, those users should pay for the parking structure while residents and employees should park for free (see Appendix A).

Public Transit and Alternate Modes of Transportation in Carmel

Bus Service

The Monterey/Salinas Transit (MST) serves a 280 square-mile area of Monterey County and Southern Santa Cruz County, including Carmel-by-the-Sea. The MST has 37 bus routes, five of which travel through Carmel (Routes 4, 5, 7, 11, and 22). Three of the routes (Routes 5, 7, and 11) travel to Ocean Avenue and return north, to Highway 1 and other Peninsula cities. The remaining two bus routes (Route 4 and 22) service more extensive areas within the City, which



include the neighborhoods south of Ocean Avenue and west of Junipero Avenue. These two routes exit on Highway 1 south of the City and travel to the Crossroads Center (Route 4) and then further south down the coast (Route 22). [Figure 2.2: Bus, Truck, and Bike Routes](#), shows the location of the bus routes within the City of Carmel.

In cooperation with the American with Disabilities Act (ADA) of 1990, MST also offers the MST RIDES ADA program. The MST RIDES ADA program offers curbside-to-curbside transportation service to eligible passengers as a ride-share program.

Bike Route

The bike routes within the City of Carmel are designated Class III bike paths. Class III bike paths require signage identifying the bike route. However, no pavement markings are required. [Figure 2.2: Bus, Truck, and Bike Routes](#), shows the location of bike routes within the City (Carmel 2000).

Scenic Road is considered a prime bike route in the City. However, as cyclists cannot legally ride north on Scenic Road, riders in this direction are directed onto Carmelo Street. San Carlos Street provides a good north-south route in the uphill and downtown areas due to its convenience, good pavement and wide shoulders, medium levels of traffic, and visual quality (Carmel 2000).

Shuttle Service

The City continues to evaluate a possibility for a local shuttle, which would service the areas within the City limits. The most probable shuttle route would likely commence at the Vista Lobos parking lot, travel through the commercial district, west to the beach, then back east to the Sunset Center, ending at the Mission.

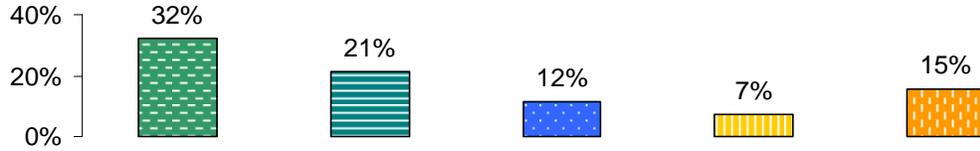
Community Opinion on Public Transportation

Based on the findings of the Survey, most of Carmel residents do not currently use public transportation and would not use a bus, even it becomes more convenient. While most of the residents don't see themselves using public transportation, there is support for introducing a local shuttle that would serve visitors, tourists, and shoppers in the City (see [Graph 2.5: Carmel-by-the-Sea Local Shuttle](#)).

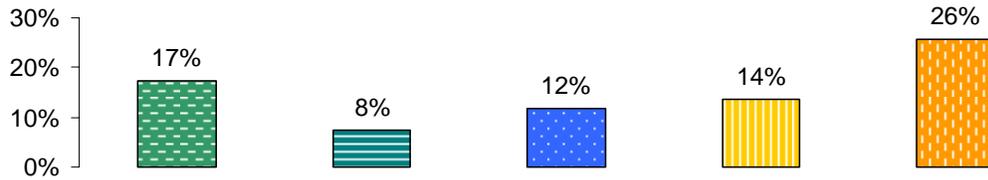


Graph 2.5: Carmel-by-the-Sea Local Shuttle

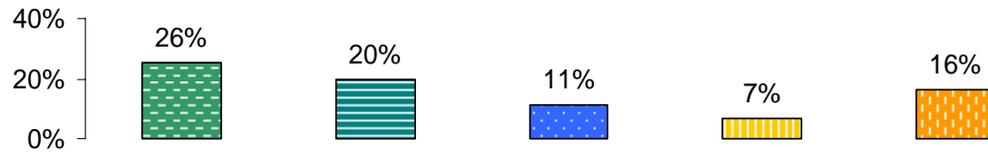
Provide Local Shuttle in Carmel-by-the-Sea



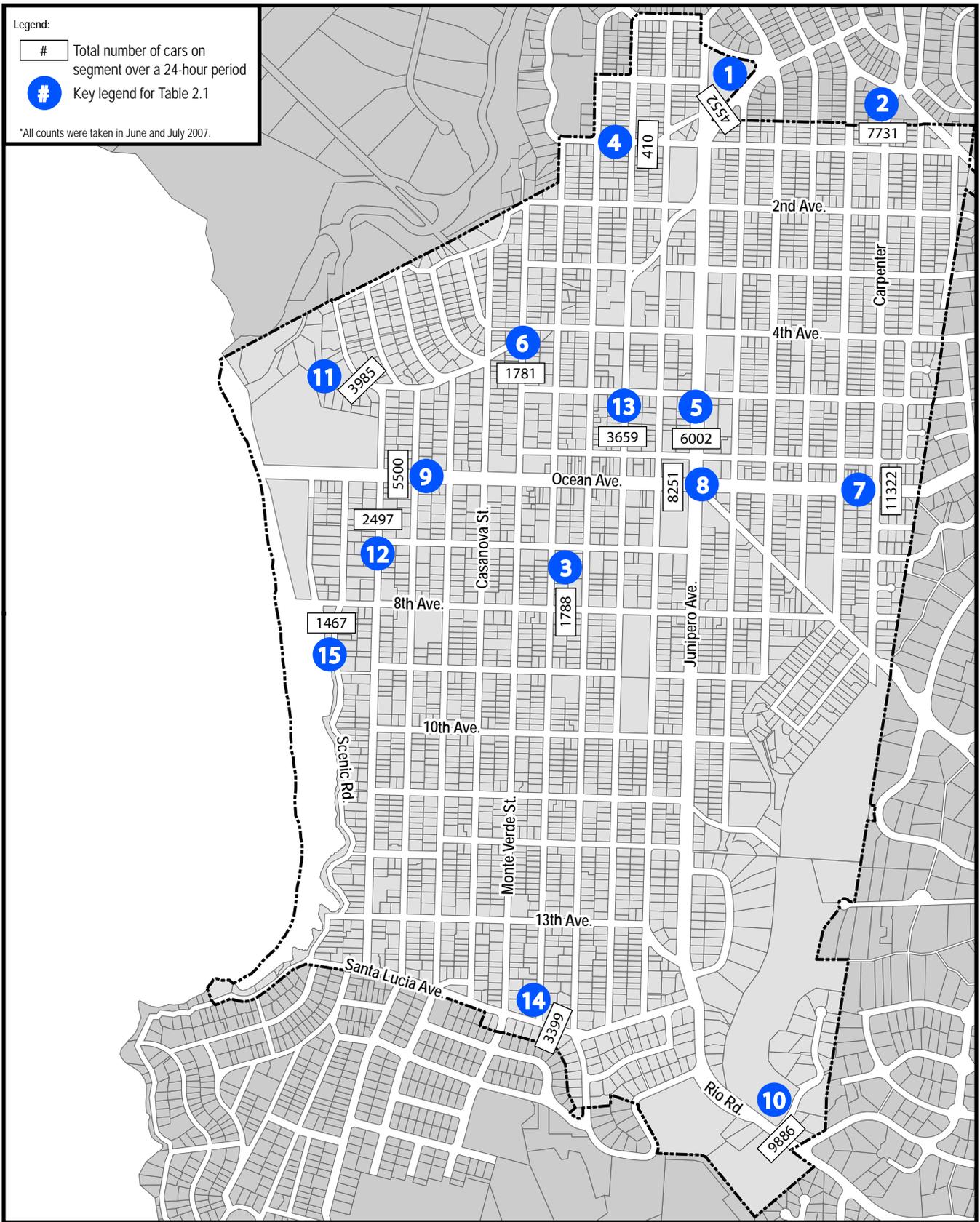
Shuttle Not Appropriate for Carmel-by-the-Sea



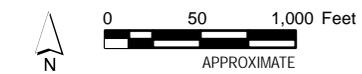
Provide Local Shuttle for Visitors



1 = strongly agree
 2 = somewhat agree
 3 = Neutral/ No opinion
 4 = Somewhat Disagree
 5 = Strongly disagree



Source: RBF Consulting (2007)

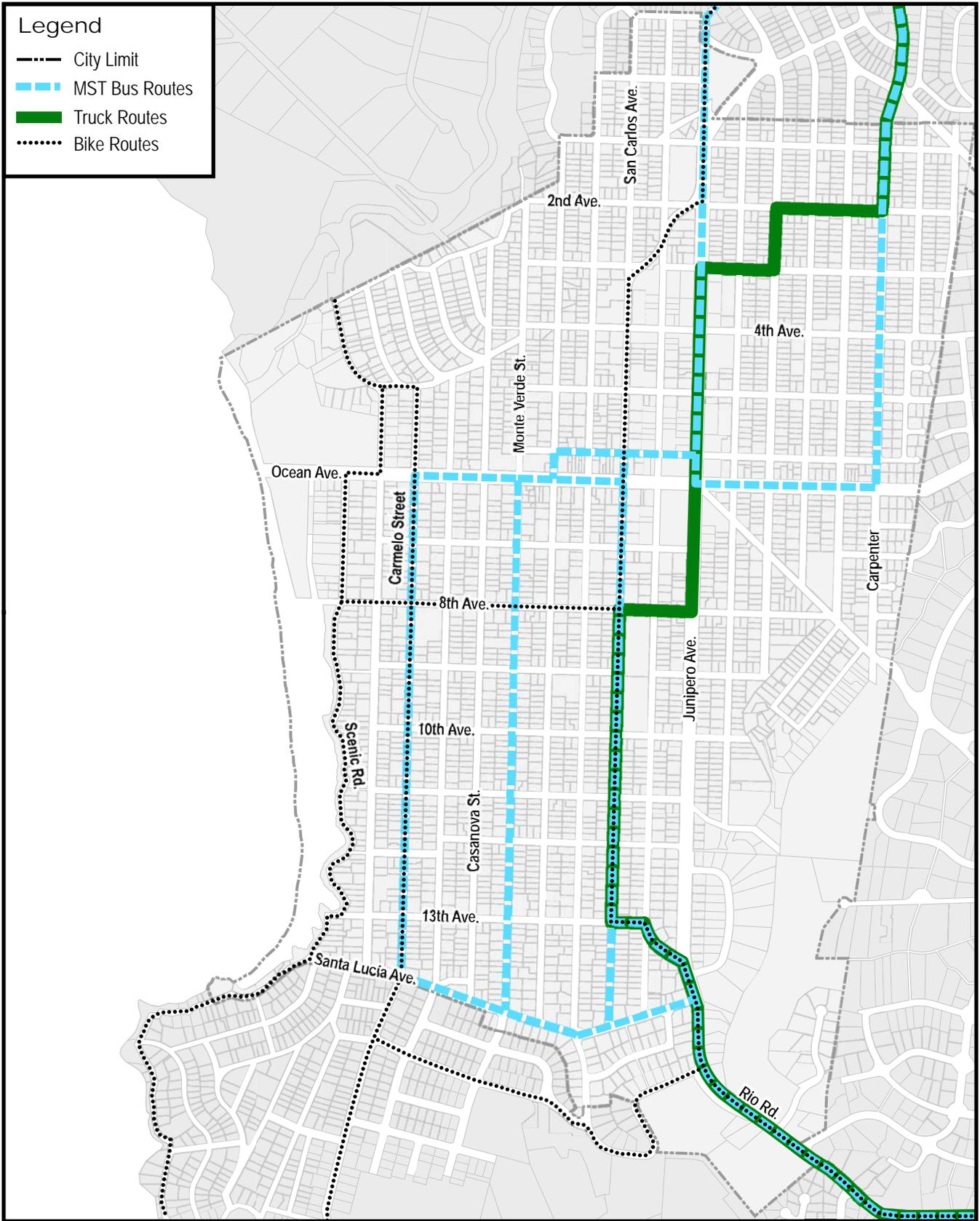


5/11/09JN 70-100077

CARMEL-BY-THE-SEA GENERAL PLAN UPDATE

Traffic Counts

Figure 2.1



Source: City of Carmel (2009), MST (2009), Carmel Bike Plan (1997)



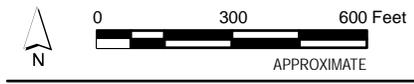
CARMEL-BY-THE-SEA GENERAL PLAN UPDATE

Bus, Truck, and Bike Routes

Figure 2.2



Source: RBF Consulting (2007)



CARMEL-BY-THE-SEA GENERAL PLAN UPDATE

Public Off-Street Parking

Figure 2.3

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PUBLIC FACILITIES AND SERVICES ELEMENT



Issue	Majority	Split Opinion	Conclusions and Comments	Action
City parks, open space, amenities	S – Overall high level of satisfaction with the City’s parks, open space, and amenities.		CONTINUE to implement current policies for parks/open space maintenance. Note	No action required – continue to implement the current policies related to parks.
	S/W – Room for improvement with bicycle trails, Forest Hill Park, and First Murphy Park		SUPPORT for improvement of bicycle trails in the City. SUPPORT for improvement of maintenance of existing parks/amenities.	Establish policies that improve the maintenance of existing parks and open space. Ensure that there is no contradiction with the Coastal Resource Management Element G5-6 and Objectives and Policies falling within it.
	W – Improve maintenance of existing City parks			See above.
	W – Identified need for larger, passive use parks that meet needs of aging population.		SUPPORT for large-scale, passive use parks/open space.	See next item.
Rio Park	S – develop and restore to provide habitat and recreational park acreage W – Develop Rio park for passive and active use.		SUPPORT to develop Rio Park as a recreational area (active use), with portions preserved as habitat/open space (passive use)	Establish a policy to develop Rio Park as both a recreational and habitat (passive) open area park. Seek funding for necessary funding. Assure that the policy is consistent with the Coastal Resource Management Element G5-6, specifically P5-98, P5-99, O5-20, P5-103, O5-21, P5-107, P5-108.



Issue	Majority	Split Opinion	Conclusions and Comments	Action
City services	S – Generally satisfied with a majority of services provided by the City		CONTINUE to implement current policies related to services provided by the City.	No action required – Continue to implement the existing policies contained within the Public Facilities and Services Element
	S – Room for improvement with building and planning permit process, code enforcement, and wi-fi coverage		SUPPORT to improve and streamline building and planning permitting process and improve code enforcement.	
	W – improve recycling programs		SUPPORT to improve city’s recycling program. Note: There might be some programs that the City can introduce as part of the effort to become more sustainable.	
	SN – maintenance of the City amenities		SUPPORT for policies that improve maintenance of existing City amenities.	
	W – keep service in-house, no outsourcing		OPPOSITION to outsourcing City services. Note: There is perception that when services are outsourced or combined with a different jurisdiction, the quality of that service is reduced. To avoid this perception the City should ensure that a particular service being outsourced improves or, at minimum, remains at the same level.	



Introduction and Purpose

The Public Facilities and Services Element of the General Plan addresses those components of community life important to the education, culture, recreation and social well-being of the residents of Carmel-by-the-Sea and its Sphere of Influence. This aspect of Carmel-by-the-Sea is distinguished by a number of public and semi-public structures and facilities and by the existence of various public and private agencies and commissions with responsibility for programs and operations. This Element sets out the goals, objectives and operational policies that govern these facilities and agencies.

Issues of Local Significance

The following issues were identified as relevant to the City of Carmel-by-the-Sea and will be discussed in the Goals, Policies and Implementations and Supporting Information sections.

- Maintenance of the City's parks, open space and amenities including bicycle and walking trails;
- Need for larger passive use parks that meet the needs of an aging population;
- Development of Rio Park for both active and passive recreation;
- Proactive efforts to expand existing recycling programs;
- Ensuring adequate levels of service for out-sourced services and operations; and
- Prioritization of infrastructure maintenance and improvements with City streets, underground utilities, drainage and stormwater facilities, and tree planting and maintenance being the top four.

This element also includes some of the findings gathered through the Community Survey (Survey). The Survey was prepared as part of the public outreach process to gain a broader response from the community, property owners, and businesses on issues facing Carmel. The complete Survey report can be found in Appendix A.



Goals, Objectives and Policies

G 6-1 To recognize the unique social, cultural and recreational aspirations and activities which contribute to the vitality of Carmel-by-the-Sea; to provide a range of public and semi-public facilities and programs responsive to those aspirations; to provide public services to ensure each resident a safe, healthful and attractive living environment; to maintain both facilities and programs so as to exemplify the highest standards for the community.

O6-1 Cooperate with other governmental and private agencies in providing needed local facilities for fulfillment of the public safety, cultural and recreational needs of the community at a level of service commensurate with community expectations.

P6-A Plan public facilities in cooperation with service providers to minimize short- and long-term construction, operation, and maintenance costs.

P6-1 Support ~~Maintain and enhance the~~ cooperation between Harrison Memorial Library and other library systems in Monterey County ~~to benefit levels of service.~~

P6-2 Maintain ~~the written a~~ mutual response agreement between the Carmel Fire Department and surrounding agencies and strive to improve the department's ISO Insurance rating through available manpower and resources.

P6-3 Coordinate with the Carmel Unified School District in using its facilities for recreation, adult education, and other community programs when necessary, in conformance with State guidelines. Expand available opportunities as a cooperative effort.

P6-4 Cooperate with senior care organizations such as the Carmel Foundation in ~~the support of~~ cultural, recreational, educational services and low cost housing program ~~it offers.~~

P6-5 Recognize the significance of the Carmel Mission in various matters of a non-religious nature, e.g., cultural and historical heritage, visitor attraction and Larson Athletic Field.

P6-6 Recognize and support youth programs, such as the Carmel Youth Center, as a positive force in youth guidance and programs.



- O6-2** Support adequate levels of public services and facilities to serve the needs of the community, including police and fire protection, refuse and sanitary disposal services, building safety and public utility services.
- P6-7** Support the services provided by relief organizations such as the Carmel Chapter of the American Red Cross.
- P6-8** Maintain the City's beach, park and open space in a manner ~~to that~~ encourages use and enjoyment by residents and visitors. (See also the Open Space Element)
- ~~**P6-9** Maintain and enhance Harrison Memorial Library's service to the residents of Carmel-by-the-Sea and surrounding areas.~~
- P6-B** Reduce per capita and total demand for water and wastewater treatment, and enhance storm water management through integrated and cost-effective design, technology, and demand reduction standards for new development and redevelopment.
- P6-C** Encourage and implement upstream water-saving technologies to reduce storm water volumes and increase percolation. Increase permeable surfaces and encourage on-site percolation to reduce storm water volume.
- P6-D** Manage water resources to ensure equitable amounts of clean water for all users, to support wildlife habitat, and to preserve natural resources within the sustainable limits of water supplies.
- P6-E** Work with the Monterey Peninsula Water Management District and Cal-Am, and other organizations to ensure adequate water supply, particularly during periods of prolonged drought and warm weather conditions.
- P6-F** Support retrofitting of public buildings with water conservation features.
- P6-G** Regularly update guidelines and standards for new landscaping that emphasizes xeriscaping, climate-appropriate landscape design, and other water-conserving practices.
- P6-H** Encourage and assist hospitality related business to actively pursue and promote water conservation programs.



P6-I Work with service providers, commercial businesses and residents to minimize the amount of waste going to landfills through improved recycling efforts and programs.

P6-J Evaluate the development of impacts fees that would require new development to pay for the infrastructure it requires and the public services it receives.

P6-10 Provide paramedic-ambulance service to Carmel-by-the-Sea residents through participation in the Carmel Area Joint Powers Agency.

~~O6-3~~ Maintain public services and facilities in an efficient and economical manner.

P6-11 Continue the maintenance and improvement of public protection by the Police and Fire Departments; enhance community awareness of matters concerning personal safety and protection of property.

~~O6-4~~ Determine which of the facilities identified as needed should be accommodated at Sunset Center. Establish guidelines for the design and intensity of future development at Sunset Center.

P6-12 Maintain and improve Sunset Community and Cultural Center to provide facilities for cultural, social, recreational and governmental activities.

~~O6-5~~ Establish and maintain a five-year Capital Improvement Program as required by State law.

P6-13 Maintain the City's five-year Capital Improvement Program and conduct Establish a yearly review by the Planning Commission of the Capital Improvement Program ~~affecting consistency with~~ this Element.

P6-14 Based on identified housing, parking, recreation public and cultural facilities, parks and open space needs, ~~consistent with the General Plan,~~ develop, maintain and periodically review a list of property within the City and its Sphere of Influence suitable for acquisition and disposition by the City. ~~E~~ and establish priorities for potential actions.

P6-15 Provide a procedure of land acquisition, including methods of funding and public participation.

~~P6-16~~ Establish priorities as needed for sale or trade of City property to implement this Element.



~~**P6-17** Determine the need for additional public facilities such as Post Office, concert hall, meeting rooms and parking.~~

~~**P6-K** Pursue roadside improvements funds and other available sources to develop bicycle paths and pedestrian trails.~~



Supporting Information

Social, Cultural and Other Public Facilities

Carmel's primary social and cultural facilities are the Sunset Community and Cultural Center, Harrison Memorial Library, and the Forest Theatre. Two other facilities, City Hall and the Post Office, have both functional and social significance in the community and represent important meeting places. Public recreational facilities include the beach, Forest Hill Park, Mission Trail Park, Vista Lobos, and, in Carmel's Sphere of Influence, facilities of the Carmel Unified School District and Rio Park. The Carmel Youth Center is a meeting place for young people. The Carmel Foundation offers a variety of services, both cultural and recreational, to older people; The Carmel Mission, an active church and a visitor attraction, owns the Larson Athletic Field.

Each of the major facilities is described below, mapped on [Figure 6.1: Recreational and Service Facilities in Carmel-by-the-Sea](#), and included in [Table 6.1: Location of Recreational and Service Facilities in Carmel-by-the-Sea](#). Key numbers next to each facility (e.g. # 1) reference location on the map of each respective facility.

Sunset Center (# 1)

Sunset Center is a community gathering place, where many of the region's performing arts, visual-arts exhibits, organization meetings and educational events are held. The Center is also home to some of the region's leading performing-arts organizations, visual and arts service organizations, and volunteer groups (Sunset 2009).

Sunset Cultural Center, Inc. is a non-profit corporation that assumed management of the city-owned theater in 2004. Sunset Center is located on the east side of San Carlos Street past Ninth Avenue, three blocks from Ocean Avenue in Carmel. Facilities include a 718-seat auditorium, several rooms for classes and meetings, gymnasium, art gallery and offices for several cultural organizations. The north end of Sunset Center consists of a parking lot (Sunset 2009).

For nearly forty years, the Sunset Center was home to symphonies, chamber musicians, singers, actors, and dancers. To address the problem of a facility that was ill-equipped for the 21st century, a nonprofit corporation, Sunset Center for the Arts, private foundations, individuals, and the City of Carmel-by-the-Sea raised all the money needed for renovation (Sunset 2009).

The construction project began in September 2001 and in July 2003, less than two years later, the Sunset Center reopened with the Carmel Bach Festival, a long-standing annual music event in Carmel. The renovation focused on improving the acoustics, enlarged stage area and proscenium to accommodate a full orchestra and chorus (Sunset 2009).

Sunset Center is the home of four historic Presenting Partners: Carmel Bach Festival, Carmel Music Society, Chamber Music Monterey Bay, and the Monterey Symphony. Together, these four nonprofit organizations offer more than 50 classical music events each year (Sunset 2009).



The Scout House (# 2)

The Scout House is a multi-use facility located at the northeast corner of Mission Street and Eighth Avenue. This building has a large room, working fireplace, and a full kitchen and is a completely contained unit. It has been the site for holiday parties, receptions, dinners, dances, weddings, religious services and conferences as well as for Scout activities. In 1986, 438 events occurred here.

Harrison Memorial Library (# 3)

The Carmel's library services are provided via the Harrison Memorial Library (Main Library) and its Park Branch (# 3a). The Main Library is located on Ocean Avenue at Lincoln Street. The Park Branch is located on Mission Street at Sixth Avenue. The Harrison Memorial Library opened in 1928 and services were expanded with the addition of its Park Branch facility in 1989 (HML 2009).

Between the Main Library building and the Park Branch, the library provides services to 13,000 cardholders who are residents of Carmel-by-the-Sea and the surrounding unincorporated areas of Monterey County (HML 2009).

The library's personnel and facility maintenance budget is funded by the city of Carmel-by-the-Sea. All library books, magazines, electronic resources and computer equipment are funded with donations to the Carmel Public Library Foundation and Friends of Harrison Memorial Library, as no tax dollars are available for these purchases (HML 2009).

The library is administered by a five member citizen's board of trustees appointed by the Mayor of Carmel-by-the-Sea and confirmed by the City Council. The Board of Trustees formulates library policy, administers funds and plans library services for the community (HML 2009).

The Harrison Memorial Library is an important cultural landmark in Carmel. The current Main Library building was designed by the renowned California architect Bernard Maybeck and financed by a bequest from Ella Reid Harrison as a memorial to her husband, California Supreme Court Justice Ralph Chandler Harrison (HML 2009).

Forest Theatre (# 4)

The Forest Theater is located in east central portion of the City, north of the Mission Trails Nature Preserve. California's first outdoor theatre, the Forest Theatre was founded in 1910 and includes 600 outdoor seats and a 60 indoor-seat theatre. The main stage is used by the Forest Theatre Guild for a summer program of Shakespeare and other playwrights, while the smaller indoor stage is used by the Children's Experimental Theatre for instruction and drama. This site was deeded to the City by gift in 1937 with the stipulation that it always remain a park (Forest Theater 2009).



The Forest Theater is currently going through preliminary stages of major renovation, which would improve this park and its facilities. The preliminary plans for redesign focus on preserving the Forest Theater as a natural habitat and a park, improving parking accommodations, restrooms, ticket and concession sales, and theater production capabilities and features (Forest Theater 2009).

In keeping with the Theater's history as a park, the design calls for revitalized landscape, which would emphasize trees, as well as all man-made portions of the designs to be reflective and respecting of the natural environment. The proposed new audience and visitor center will accommodate patrons during events as well as host visitors to the park on non-performance related occasions. The seating will be reduced to 550 persons, but will provide ADA access, step aisles rather than slopes, and incremental rise of rows. The stage will also be improved to better accommodate production needs (Forest Theater 2009).

City Hall (# 5)

City Hall is located on the east side of Monte Verde Street between Ocean and Seventh Avenues. Originally a church built in 1921, it has been extensively altered in 1950 and 1985 for use as a City Hall. Much tradition attaches to this facility that is under the jurisdiction of the City Administrator. It now houses the City Administrator's office, the Department of Administrative Services and the Department of Community Planning and Building.

Post Office (# 6)

As Carmel does not have street number addressed, the mail is not delivered to individual homeowners or businesses, but rather to post office boxes. The Carmel-by-the-Sea Post Office is located at Dolores Street and 5th Avenue. The Post Office is under the jurisdiction of the U.S. Postal Service. The Postmaster's office is in the facility at the mouth of Carmel Valley.

As residents take daily visit to the Post Office its function often goes beyond the original purpose of delivering mail and becomes a social activity for Carmel residents. The post office is often used to reach out to the community about important local happenings and events.

Carmel Foundation (# 7)

The Carmel Foundation was incorporated as a non-profit organization on April 21, 1950. The Foundation is housed in three buildings located at 8th and Lincoln Streets. A fourth building opened in the fall of 1999 at 8th and Dolores Streets, which has been named the Ruth Blanchard House. The Foundation is supported entirely by donations with no government funding (Carmel Foundation 2009).

The Foundation's purpose is to provide services to our older population, both in Carmel and in the surrounding area, such as adult education classes, hobbies, social gatherings, Homebound Meal Program, which provides four meals a week for a nominal fee, to those members who may be homebound or have other special circumstances, assistance in solving problems, and many



others. Its members consist of approximately 4,000 people over 55 years of age (Carmel Foundation 2009).

One of the most prominent Foundation's support services is the provision of housing to members 65 years of age and over who have limited financial resources. The housing, consisting of 45 apartments available for seniors, is located in three separate buildings; Haseltine Court, Trevvett Court, and Norton Court, all in Carmel-by-the Sea (Carmel Foundation 2009).

Carmel Youth Center (# 8)

The Carmel Youth Center was established in October of 1949. The center is located on the southwest corner of 4th and Torres in Carmel-by-the-Sea. The purpose of this center is to maintain a youth-oriented facility and programs for the use of our youth who reside within the boundaries of the Carmel Unified School District (CYC 2009).

The Carmel Youth Center includes a variety of kid-friendly environments in one place. These facilities include Checker's Grill is a 50's style snack bar, a computer center with 8 Macintosh computers, internet access and laser jet printer is available for homework or internet access, and a Multi-Purpose room, where members are able to play half court basketball, ping-pong, and football. The center also houses a state-of-the-art music studio housed with opportunities to take private music lessons on drums, bass and guitar and the Jeffrey Raymond Sutton Movie Theater (CYC 2009).

Carmel Unified School District (# 9)

There are no public schools located within the city limits of Carmel-by-the-Sea. The nearest school district is that of the Carmel Unified School District (CUSD) (CUSD 2009).

The CUSD jurisdiction encompasses approximately 594 square miles with four distinctive population centers within their boundaries: Carmel-by-the-Sea, Carmel Valley, Pebble Beach, and Big Sur (CUSD 2009).

CUSD is a unified school district grades pre K-12 with a current enrollment of approximately 2,160. The District is comprised of three K-5 schools, one 6-8 middle school, one 9-12 high school, a continuation high school, an adult school, and a NAEYC-accredited Child Development Center serving children aged 6 weeks to 11 years. These schools offer recreational facilities in the form of playgrounds, tennis courts, gymnasiums and a swimming pool (CUSD 2009).

Carmel Mission (# 10)

The Carmel Mission established in 1771, is located in the most southeastern portion of the City of Carmel, along Rio Road. The Carmel Mission is under the jurisdiction of the Diocese of Monterey (Mission 2009).



The Mission is a home to a parish, which continues to function since the Mission's establishment, museums, and a parochial school, with playground and athletic field. Junipero Serra School includes an elementary and junior high school that services students from many different parishes and cities from within the local area (Mission 2009).

Through its five museums, the Carmel Mission addresses the history of one of California's most important heritage sites. The Basilica Church, a registered National Historic Landmark, is the centerpiece of the Mission, which displays a fine collection of Spanish Colonial Liturgical Art and Artifacts through the church (Mission 2009).

The Harry Downie Museum, located in the forecourt to the Basilica, houses interpretive displays and artifacts devoted to telling the restoration story of the Mission and the significance of Harry Downie's efforts in the restoration (Mission 2009).

Behind the Basilica, in the Munrás courtyard, is located the Munrás Family Heritage Museum, which displays the treasured keepsakes of this prominent Monterey family (Mission 2009).

Adjacent to the Basilica, the Jo Mora Chapel Gallery houses the elaborate Serra Memorial Cenotaph, sculpted in 1924 by Jo Mora, of travertine marble and bronze. This museum is also the home to a periodically changed art exhibit (Mission 2009).

In Convento Museum, through which one exits the Mission complex, is found the cell used by Junipero Serra and where he died in 1784. Other rooms in the museum present interpretive displays for further understanding the history of this heritage site (Mission 2009).

Carl Cherry Center For The Arts (# 11)

The Carl Cherry Center for the Arts is located on the corner of 4th Avenue and Guadalupe Street in Carmel. The non-profit institution was established in 1948 as a cultural center to support experimental fine arts and help artists and scientists cross the standard borders of their disciplines. The mission of the Carl Cherry Center for the Arts is to enhance the quality and diversity of artistic, educational, and cultural programs in Monterey County by encouraging public programs and interactions between artists and the community. Dedicated to fostering curiosity and artistry in young people, the Cherry Center hosts an annual High School Art Exhibit, celebrating the talent of area high school student, and sponsors the annual Monterey County High School Poetry Awards (Cherry 2009).

The Center provides an environment for contemporary theater, art exhibits, concerts, solo dramatic performances, and poetry readings. Emphasis is placed on emerging and experimental artists from the Monterey Bay area, with regional group exhibits and exhibits generated by theme. Additionally, the Cherry Center annually hosts community-wide group exhibitions, student exhibits, and other special art events (Cherry 2009).



Vista Lobos Community Room (# 12)

The Vista Lobos community room is part of the Vista Lobos Park, located in the north-central area of the City. The community room is used on weekly basis for various programs. These include an Alcoholics Anonymous class, various art classes sponsored by the City and other organizations, meetings for the Carmel Residents Association, and others. The community room is also used for various City sponsored workshops and public meetings throughout the year.

City Services

In addition to the facilities already discussed, the Police Station, the Fire Station, the Public Works Department and corporation yard are the main public service facilities in Carmel.

Police Station/Public Works/Corporation Yard (# 13)

The Carmel-by-the-Sea Police Department and the Public Works Department are located at Junipero and 4th Avenues in a facility constructed in 1967. The facilities were upgraded in 2008 to include automated target system and additional four lanes to firing range.

The Police Department is responsible for law enforcement and crime prevention within the City of Carmel-by-the-Sea. The Department consists of 14 sworn officers, eight non-sworn staff, one part-time staff, two reserves, and four volunteers. The Department's vehicle fleet consists of 11 vehicles, including three parking coders and one motorcycle. On average, the Department responds to approximately 16,000 incident calls a year. The Departments response time goal is three minutes or less.

In addition to the core services the Department provides animal services, traffic and parking enforcement, Drug Abuse Resistance Education (D.A.R.E.) school program, and Seniors Helping Seniors program.

The Carmel-by-the-Sea Police Department Animal Services is provides responsive animal care and control services to the residents of Carmel. Due to Carmel's unique geography, forested areas, ocean fronting, and wild land many domesticated, wildlife, and marine animals interact. The goal of the Animal Services is to provide services for the health and well being of all animals and people through enforcement of the City ordinances, and state laws governing the keeping of animals in the City, and increased public awareness of those laws.

The primary purpose of traffic enforcement is to ensure the safety of others. Traffic enforcement is a priority due to the narrow streets, abundant pedestrians, and high volumes of traffic relating to tourism in Carmel-by-the-Sea. The Department is also responsible for the enforcement of all parking violations within the city. The department currently utilizes three Community Services Officers to enforce parking violations, the vast majority of which are for overtime parking.

The D.A.R.E. program was created in 1983 as a joint venture of the Los Angeles Police and the Los Angeles Unified School District due to the increasing negative impact drugs and violence



were having on youth. In Carmel the program was established in conjunction with the Department in 1988. The Department teaches D.A.R.E. at the Junipero Serra School. Presentations are also given to support groups, businesses, parent-teachers organizations, local service groups, and private citizens.

The Seniors Helping Seniors program was developed and implemented by the Department in 1997. The primary purpose of the program is to make daily calls and welfare checks to the many senior citizens in Carmel's community who live alone. In addition, this program also provides volunteer opportunities for seniors who enjoy helping other seniors. The program consists of volunteer senior callers who come to the police department each morning and make phone calls to our list of senior recipients.

Fire Station (# 14)

The Carmel Fire Department, located on the south side of 6th Avenue between Mission and San Carlos Streets, was constructed in 1937. The City performed a seismic retrofit of these facilities in 2006, along with a bathroom addition and other interior remodels.

The fire station is staffed with nine full-time and 18 part-time fire fighters. The Department's equipment consists of two type one engines and one rescue unit. The Department provides fire fighting as well as medical response services.

The Department's response time goal is eight minutes. The actual response times for the Department are four minutes or less. Carmel-by-the-Sea is also part of a regional coordination effort with other Monterey County cities, including Pacific Grove and Monterey. These neighboring agencies provide aid to each other on as needed basis.

Other Services Provided in the City

Wastewater Treatment and Disposal Facilities

The Carmel Area Wastewater District is located approximately a quarter mile west of Highway 1, south of the Carmel River. In addition to Carmel-by-the-Sea, the District serves Pebble Beach, portions of Carmel Valley and Carmel Highlands, as well as Carmel Meadows and Mission Fields.

The District's facilities consist of approximately 80 miles of gravity sewers, interceptors, and force mains, six remote sewage pump stations, and a wastewater treatment plant with secondary treatment for ocean discharge and tertiary (microfiltration and reverse osmosis) treatment to reclaim water for irrigation of golf courses in the Del Monte Forest. The District's permitted capacity is 3.0 million gallons per day (MGD) and their current average daily dry weather flow is 1.8 MGD (CAWD 2008). The District has adequate capacity to fully meet current and future needs of the areas within its jurisdiction.



The District operates a full tertiary treatment plant near the mouth of the Carmel River. A tertiary treatment, also referred to as "effluent polishing," provides a final treatment stage, which raises the effluent quality before it is discharged into the ocean. The treatment plant's outfall is located south of the Carmel River Lagoon, approximately 650 feet off-shore, into the Carmel Bay Area of Special Biological Significance (ASBS).

Since 1983, the State Water Resources Control Board (SWRCB) has prohibited waste discharges to ASBS. In CAWD's case, the SWRCB has issued an exemption (Resolution No. 84-78), which required the CAWD to develop a comprehensive study evaluating the effects of the discharge on both the Carmel Bay ASBS and the Point Lobos ASBS. Consequently, the plant has a permitted flow limit of 3.0 MGD, which is conditional upon results of ongoing receiving water studies proving that the discharge is not causing alteration within the ASBS.

Following the 1994/1995 fiscal year upgrade of the treatment facility from secondary to full tertiary treatment, the District's facility discharge is in full compliance of the SWRCB issued National Pollutant Discharge Elimination System (NPDES) and no improvements are needed or scheduled with respect to ocean discharge quality.

Water Service

Carmel is under the jurisdiction of the Monterey Peninsula Water Management District (MPWMD) and receives its water from the California-American Water Company (Cal-Am).

The MPWMD has permit authority over the production and distribution of all water supplies within the Monterey Peninsula region. The District allocates water supplies to cities and the County areas within its jurisdiction. Water service by Cal-Am is constrained by SWRCB Order WR 95-10, which determined that approximately 70 percent of Cal-Am supply is based on unlawful diversion from the Carmel River. Order 95-10 requires any new water supply be used to reduce diversions from the Carmel River prior to allowing new users. Furthermore, SWRCB has issued to Cal-Am a Cease and Desist order in January 2008 to further restrict water use, up to an additional 50 percent, if upheld.

Since 1993, MPWMD has been given a single, lump-sum supply of Cal-Am water to allocate proportionately to the jurisdictions within its boundaries (see [Figure 6.2: Water Service Areas](#)). As of February 2008, 121 of the 342 acre feet of water remain. Some jurisdictions, like the City of Del Rey Oaks, have used up its allocated amount of water, while Carmel-by-the-Sea is very close to expending its respective allocation.

There are seven projects currently being discussed as options for providing a new water supply, including a few desalination proposals, groundwater replenishment, and aquifer storage and recovery in the Seaside Basin, to meet the existing as well as future water needs of North Monterey county. However, these water projects are not expected to be implemented in the near future due to the technical studies, environmental review, and financing issues that would need resolution.



Although water scarcity and provision of new supply is ultimately beyond the control of the City, the City supports efforts by the MPWMD and other agencies to expand the water supply and has a representative on both the Technical Advisory Committee and the Policy Advisory Committee. The City also cooperated with the District in developing projected water demand needs at build-out for use in the planning of future water projects.

In February of 2009, the City Council passed a resolution which states Carmel's support for the Water for Monterey County Coalition and a continued collaboration of political and quasi-political entities in Monterey. Based on the understanding that Monterey Peninsula's water supply projects require a focused technical and political effort to be resolved, the Coalition is set to provide regional projects and water management programs that sustainable and cost effective water supply solutions.

State law mandates the prioritizing of water for affordable housing if water is an issue. The City's share of water resources is internally allocated to land use categories based on policies in the Land Use and Community Character and Housing Elements of the General Plan. The City has approximately 3.251 acre-feet of available water, of which approximately 1.67 acre-feet are in the City's reserves. The remaining .589 acre-feet is only available for affordable housing projects. In the past 5 years the City has allocated approximately .308 acre-feet to affordable housing projects. This is the only water available until District supplies increase and new allocations are made to each city in the District.

Stormwater Drainage

Due to Carmel's topography, the City's drainage system is based on gravity pull. Given the fact that Carmel does not have curbs, a significant portion of the runoff from roadways sheet flows into the adjacent swales and is infiltrated as groundwater. The remaining surface water is collected via a series of culverts located throughout the City. Ultimately, these surface flows are released into the ocean via 10 drainage outlets located along Carmel Beach (Carmel 2007).

The size of the drainage pipes vary depending on location. The drainage channel originating within the Mission Trails Nature Preserve, which generally follows Junipero Avenue, ranges from 42 inches to 24 inches in diameter. The drainage channel along Ocean Avenue ranges from 15 to 24 inches in diameter. The drainage channel along First and Second Avenues converges and then follows Fourth Avenue. The diameter of these channels ranges from 12 to 34 inches (Carmel 2007).

Street corner collection culverts are located along Seventh through Twelve Avenues, south of Ocean Avenue as well as in several locations north of Fourth Avenue. These culverts collect stormwater in residential areas and diver it towards the ocean. The culverts are generally 12 to 15 inches in size, with maximum size of 18 inches (Carmel 2007).



Recycling and Solid Waste Disposal

The City has an exclusive franchise agreement with the Waste Management Company for trash and recycling collection, which occurs once per week in the residential district and daily in the commercial district.

Households are issued yard waste, mixed recycle and trash cans. Due to the City's large number of second homeowners, the City contract calls for Waste Management to collect the cans from wherever they are housed and return them to the same location. This avoids the need to take the cans to the curb.

Public Restrooms (# 15)

Consistent with the City's Local Coastal Program (LCP), the City will continue to provide restrooms for visitors. The City presently provides beach area public restrooms at the foot of Ocean Avenue (#15a) and on Scenic Road at Santa Lucia Avenue (#15b). Additional public restrooms are associated with some of the City's parks and include restrooms at Devendorf Park, (#15c), at Piccadilly Park (Key #15d), First Murphy Park (#15e), and Forest Hill Park (#15f).

Table 6.1: [Recreational and Service Facilities in Carmel-by-the-Sea](#), lists all of the facilities described in sections above. Each facility is identified by a key number, which corresponds to a number used on [Figure 6.1: Recreational and Service Facilities in Carmel-by-the-Sea](#).



Table 6.1: Recreational and Service Facilities in Carmel-by-the-Sea

Key #	Facility	Location	Located Between/At
1	Sunset Center	Mission Street	8 th and 10 th Avenues
2	The Scout House	Eight Avenue	Mission Street
3	Harrison Memorial Library	Ocean Avenue	Lincoln Street
3a	Park Branch	Mission Street	6 th Avenue
4	Forest Theatre	Mountain View Avenue	Santa Rita and Guadalupe Streets
5	City Hall	Monte Verde Street	Ocean and 7 th Avenues
6	Post Office	Dolores Street	5 th Avenue
7	Carmel Foundation	Lincoln Avenue	8 th and 9 th Avenues
8	Carmel Youth Center	4 th Avenue	Torres and Junipero Avenues
9	Carmel Unified School District	Location varies by school	
10	Carmel Mission	Rio Road	Lasuen Street
11	Carl Cherry Foundation	4th Avenue	Guadalupe Street
12	Vista Lobos Community Center	3 rd Avenue	Junipero Avenue and Torres Street
13	Police Station/Public Works/Corporation Yard	Junipero Avenue	4 th Avenue
14	Carmel-by-the-Sea Fire Department	6 th Avenue	Mission and San Carlos Streets
15	Public Restrooms		
15a	<i>Carmel Beach Park</i>	Ocean Avenue	Del Mar Avenue
15b	<i>Carmel Beach Park</i>	Scenic Road	Santa Lucia Avenue
15c	<i>Devendorf Park</i>	6 th Avenue	Junipero Avenue and Mission Street
15d	<i>Piccadilly Park</i>	Dolores Street	Ocean Avenue and 7 th Avenue
15e	<i>First Murphy Park</i>	Lincoln Street	6 th Avenue
15f	<i>Forest Hill Park</i>	Junipero Avenue	1 st Avenue

Infrastructure Maintenance and Improvement Priorities

A Capital Improvement Program (CIP) is a short-range plan prepared by the City to identify a five-year infrastructure improvement and maintenance plan. Essentially, the plan provides a link between a municipality and other departments in a comprehensive and strategic plans and the City’s annual budget.

A CIP provides many benefits including:

- Allowing for a systematic evaluation of all potential projects at the same time;



- Providing the ability to stabilize debt and consolidate projects to reduce borrowing costs; and
- Serving as a public relations and economic development tool.

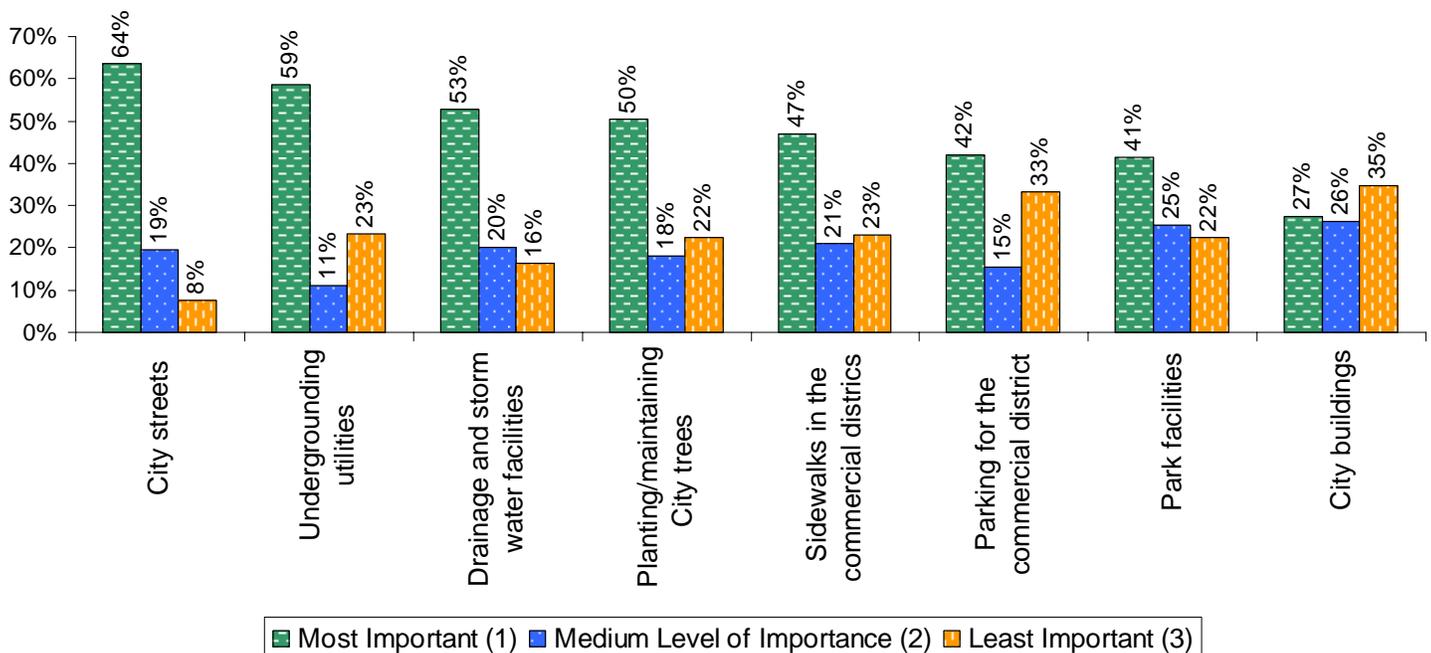
In addition a CIP focuses on preserving the City’s infrastructure while ensuring the efficient use of public funds. The CIP process provides an opportunity to foster cooperation among departments and an ability to inform other City departments of each unit’s priorities.

Historically, the City was able to meet the improvement and maintenance schedule outlined in its CIPs. Each year, the City reviews the plan to reflect any budgetary constraints of a given fiscal year.

Public’s Priorities

The Survey results showed that improvement/maintenance of City streets and undergrounding utilities were the two top-most priorities for the City. As shown in [Graph 6.1: Priorities for Improving/Maintaining City Amenities](#), when asked to identify top infrastructure-related priorities for the City, 64 percent of respondents identified improving and maintaining City streets; 50 percent identified planting and maintaining City trees; 59 percent identified undergrounding the utilities; 47 percent identified improving sidewalks and parking in the commercial district; and 41 percent identified maintaining City park facilities. Improving and maintaining City buildings was commonly listed as the lowest priority.

Graph 6.1: Priorities for Improving/Maintaining City Amenities





Notes:

(1) This survey question was based on a 1 through 8 priorities scale, 1 being the most important and 8 being the least important priority. The most important category for this graph combines the results of the 1 through 3 categories. For a detailed breakdown of these categories, please refer to Appendix A.

(2) The medium level of importance category for this graph combines the results of the 4 and 5 categories. For a detailed breakdown of these categories, please refer to Appendix A.

(3) The least important category for this graph combines the results of the 6 through 8 categories. For a detailed breakdown of these categories, please refer to Appendix A.

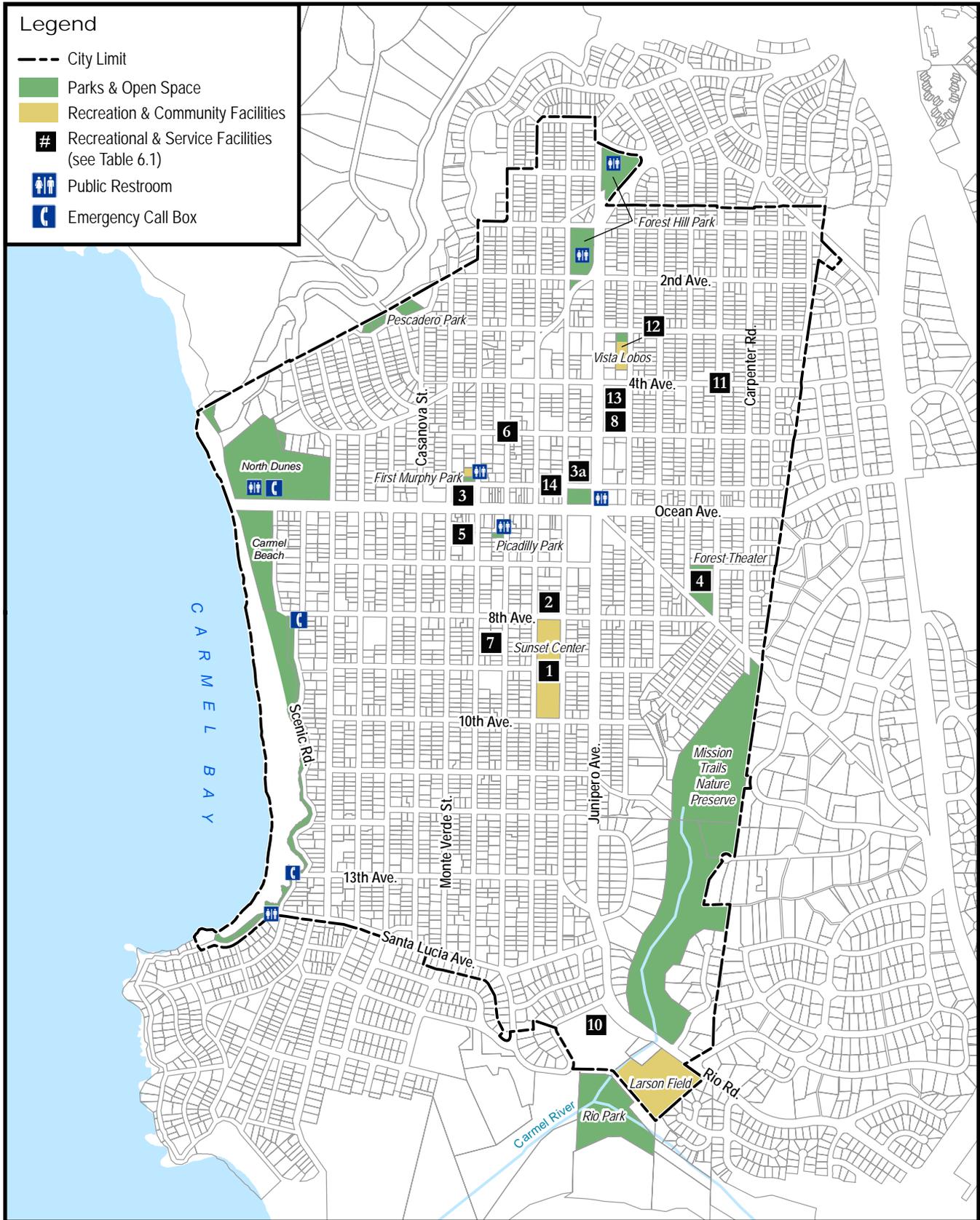
Other Public Agencies and Special Services Districts

There are several special service districts that affect the Carmel area and specifically the Carmel Sphere of Influence. Many of these districts have overlapping jurisdictions.

- Monterey Bay Unified Air Pollution Control District
- Monterey Peninsula Airport District
- County Service Area (CSA) #1 – Carmel Point
- County Service Area (CSA) #19 – Carmel Meadows #6 and 7
- County Service Area (CSA) #23 – Carmel Ranch #1, 2 and 3
- County Service Area (CSA) #30 – Rancho Mar Monte #1, 2 and 3
- County Service Area (CSA) #34 – Rancho Rio Vista and Carmel Knolls #1-4
- County Service Area (CSA) #39 (portion) – Del Monte Fairways, Josselyn Canyon and Aguajito
- County Service Area (CSA) #43 – Carmel Unincorporated (provides contractual fire protection)
- County Service Area (CSA) #47 – Carmel Views #1-4, Mar Vista
- County Service Area (CSA) #50 – Rio Way, Tract #2
- County Service Area (CSA) #51 – High Meadows, #1, 2
- Carmel Highlands Fire Protection District (small portion)
- Monterey Peninsula Garbage and Refuse Disposal District
- Monterey Peninsula Flood Control and Water Conservation District – Zone 11
- Monterey Peninsula Water Management District
- Monterey Peninsula Regional Park District



- Carmel Area Wastewater District
- Monterey County Administrative Offices
- Monterey County Board of Supervisors
- Monterey-Salinas Transit District
- Monterey County Air Pollution Control District
- Monterey County Planning Department
- Local Agency Formation Commission (LAFCO)
- Association of Monterey Bay Area Governments (AMBAG)
- Pebble Beach Community Services District
- California Department of Parks and Recreation
- Monterey Regional Parks
- California Department of Forestry
- United States Forestry Service



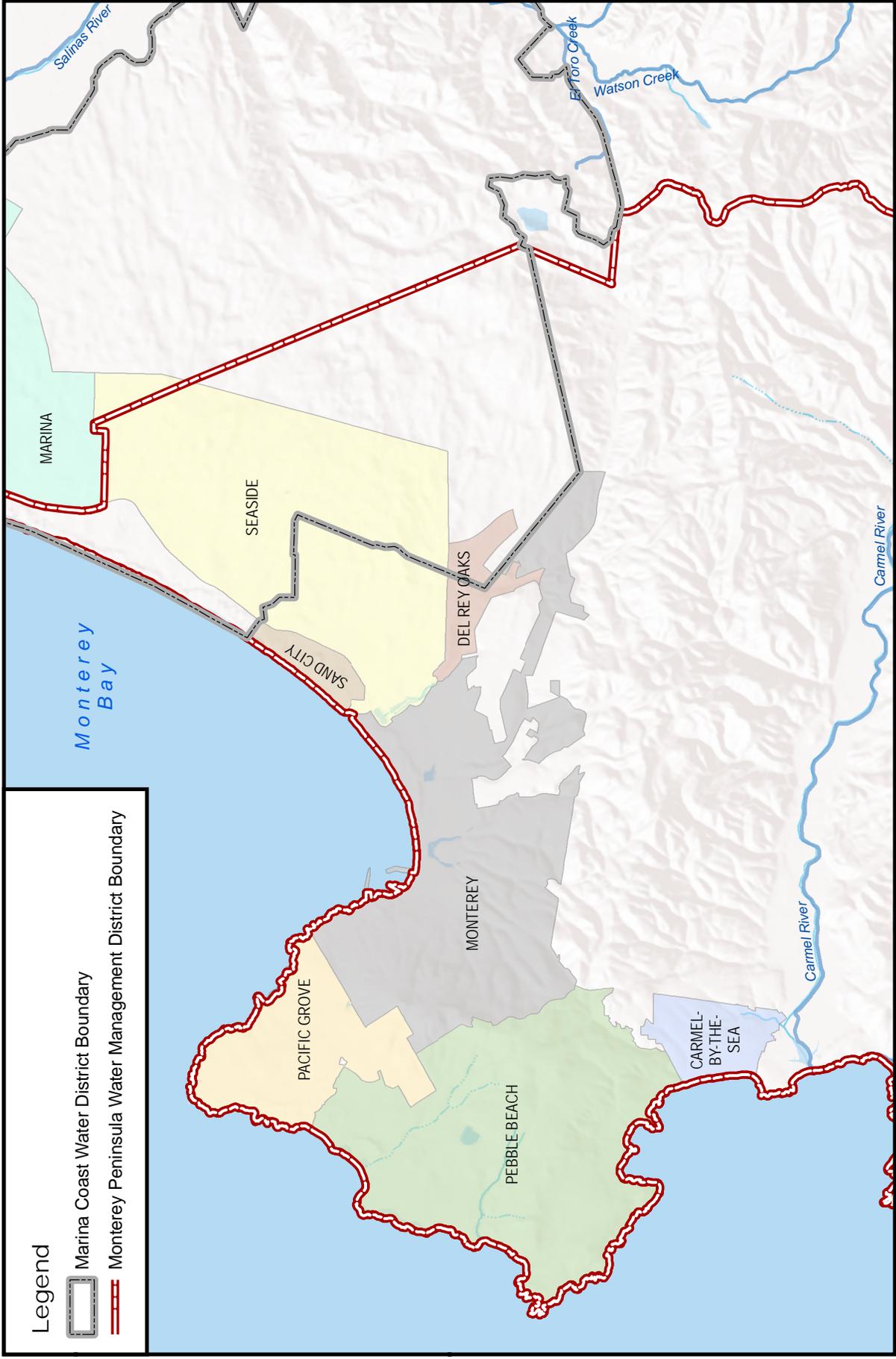
Source: City of Carmel-by-the-Sea (2009)



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CARMEL-BY-THE-SEA GENERAL PLAN UPDATE
**Recreational & Service Facilities
 in Carmel-by-the-Sea**

Figure 6.1



Source: RBF Consulting (2007)



CARMEL-BY-THE-SEA GENERAL PLAN UPDATE
Water Service Areas

Figure 6.2



OPEN SPACE AND CONSERVATION ELEMENT



Issue	Majority	Split Opinion	Conclusions and Comments	Actions
Tree Planting	S – Preferred locations for tree planting included public property in residential neighborhoods and City parks.		<p>SUPPORT for policies ensuring the proper maintenance and survival of the City’s urban forest.</p> <p>Note: There seems to be room for improvement in communicating the existing policies regarding tree planting and maintenance. There is also SUPPORT for improved enforcement of these rules.</p>	<p>Explore introducing a policy which would identify these two areas as preferred for tree plantings.</p> <p>Assure that the policy is not in contradiction to policies listed below and otherwise included in the Coastal Resource Management Element.</p>
	S – moderate support for planting only replacement trees		This is a very sensitive topic to most residents and it has to be addressed with careful consideration.	No action required – Continue to implement existing policies contained within the Coastal Resource Management Element (see O5-12, P5-65 through 5-71)
	S/W – plant a mix of upper and lower canopy, native, and drought-tolerant trees		The City plants numerous trees and also maintains the trees planted by friends of the forest	No action required – Continue to implement existing policies contained within the Coastal Resource Management Element (see P5-47, O5-11, P5-55 through P5-64)
	W – Plant more trees; ensure urban forest survival			No action required – Continue to implement existing policies contained within the Coastal Resource Management Element (see O5-12, P5-65 through 5-71)
	W – quality over quantity			No action required – Continue to implement existing policies contained within the Coastal Resource Management Element (see G5-4 and all the Objectives and Policies falling under it)



Issue	Majority	Split Opinion	Conclusions and Comments	Actions
Tree Maintenance	S/W – improve maintenance of urban forest			No action required – Continue to implement existing policies contained within the Coastal Resource Management Element (see G5-4 and all the Objectives and Policies falling under it)
	W – Clarify tree planting/removal policies; enforce			No action required – Continue to implement existing policies contained within the Coastal Resource Management Element (see O5-12, P5-65 through 5-71)
Water Supply Priorities	S – allocate available water to upgrade existing homes, construct new homes on existing lots, and supply environmental uses		SUPPORT for establishing priorities for water supplies, with upgrading existing homes, constructing new homes on existing lots, and supplying environmental uses being the most supported uses for additional water allocations.	Review existing policies for establishing water supply priorities. Consider developing water supply priorities policies for the event of additional water supplies becoming available. Ensure that any new policies do not contradict G1-6 and Objectives and Policies falling within it.
Environmental Sustainability	S – adopt a variety of environmental sustainability programs for municipal operations, businesses, and residents		SUPPORT for the City to introduce environmentally sustainable policies and programs for municipal operations, businesses, and residents. Note: This is the area where we can be really innovative. This was not addressed in the current GP and we can introduce policies and programs which are sustainable in nature within	Establish policies that recognize the residents and City’s willingness and enthusiasm about sustainable living. Policies can include a combination of education, incentives, and requirement for various aspects of community.



Introduction and Purpose

The open space element has a broad scope that overlaps with other related elements. This General Plan combines the Open-Space element with Conservation element as permitted by the California State General Plan Guidelines. The purpose of the open space element is to describe comprehensive goal and policies for the long-range management and preservation of the open-space land. Issues considered in the Open-space element include agriculture, natural resources, recreation, and enjoyment of publicly owned natural areas, while the Conservation element focuses on natural resources issues such as management, conservation, development, and utilization of natural resources (CA 2003).

Issues of Local Significance

The following issues were identified as relevant to the City of Carmel-by-the-Sea and will be discussed in the Goals, Policies and Implementations and Supporting Information sections.

Open Space

- The amount and location of publicly owned open-space;
- Parks- their size and location;
- Unimproved Right of Way as part of open space (linear greenbelts);
- Management and maintenance of the open space areas;
- Areas required for the preservation of wildlife;
- Future needs for open space areas and recreational facilities;
- Beach as an outdoor recreation area; and
- Scenic walkway.

Conservation

- Water supply;
- Policies for guiding water allocations for new development;
- Conservation measures;
- Water quality;
- Conservation of habitats;
- Beach conservation;
- Maintenance;
- Special status species/ habitat conservation;
- Urban forest management and conservation;



- Management issues and long-term reforestation; and
- Sustainable practices.

This element also includes some of the findings gathered through the Community Survey (Survey). The Survey was prepared as part of the public outreach process to gain a broader response from the community, property owners, and businesses on issues facing Carmel. The complete Survey report can be found in Appendix A.

Goals, Objectives and Policies

G7-1 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.~~

O7-1 ~~To meet the needs that have been identified, utilize acquired parcels within the community~~ Utilize publicly owned land for the benefit of Carmel residents.

~~**P7-1** Conduct a periodic review on at least a bi-annual basis of City owned lands. Such review shall be a joint public hearing of the Planning Commission and City Council; the review shall be to evaluate uses and needs and then consider the desirability of acquisitions and/or dispositions of land.~~

~~**P7-2** Reestablish an acquisition priorities list when opportunities arise to and prepare and maintain a list of such land based on need before obtaining other parcels or properties~~ land and/or facilities within the Carmel city limits and surrounding environs.

O7-2 Develop, preserve and enhance areas of scenic interest and determine methods to protect key scenic corridors and routes.

~~**P7-3** Encourage the use of full utilization and opportunities within permanent open space areas for such uses as pedestrian paths and scenic viewpoints, that would provide for public enjoyment of these areas.~~

~~**P7-4** Support the policies of the State and County designated Scenic Highways, and related policies, wherever it appears in the best interest of Carmel to do so.~~

P7-5 Designate the following routes as “Local Scenic Routes” within the city limits in order to preserve them: Junipero Avenue (from 1st Avenue to Rio Road) and Scenic Road (from 8th Avenue to southern



city limits). In keeping with Carmel's residential character, designation will not include any signs identifying the routes as local scenic routes.

Important discussion issue for the PC

- P7-6** Recognize and designate, where appropriate, scenic routes in the unincorporated portions of Monterey County (but within Carmel's Sphere of Influence).
- P7-7** Preserve the significant coastal view from the intersection of Torres Street and Third Avenue and across the City owned land near this intersection for public benefit and enjoyment. ~~(GP Amendment 90-01)~~

The following policies were moved to the Environmental Safety Element.

- ~~**O7-3** Minimize the generation of hazardous waste within the City and ensure that hazardous waste is transported and disposed of in a proper manner.~~
- ~~**P7-8** Support implementation of the Monterey County Hazardous Waste Management Plan.~~
- ~~**P7-9** Require a conditional use permit for all commercial uses that generate hazardous waste.~~
- ~~**P7-10** Provide educational information to the public on household hazardous waste materials ways to reduce the use of such materials, and safe means of disposal.~~
- ~~**P7-11** Periodically review the City's Hazardous Incident Plan for effectiveness in emergency response to hazardous waste spills.~~
- ~~**P7-12** Investigate programs for pickup of household hazardous waste and identify possible collection locations that will accept household waste.~~

G7-A To provide ample, accessible, safe, and well-maintained parks, open space, and active recreation facilities

- O7-A** Provide and manage a system of parks and recreation facilities that serve the needs of residents and visitors.
- P7-A** Work with local, regional, and state agencies to acquire and fund further parkland acquisition and improvements.



P7-B Evaluate the feasibility of developing Rio Park to provide both active and passive recreation facilities.

Important discussion issue for the PC

P7-C Ensure that park and recreation facilities are adequately maintained to ensure safe access and use.

P7-D Create opportunities and incentives for other agencies, non-profits, private businesses, and user groups to participate in the provision, development and maintenance of parks, open space, and recreational facilities.

P7-E Enhance and improve park facilities to accommodate a broad range of users including children and seniors.

G7-B To reduce release of airborne pollutants and contribution to green house gases.

O7-B Promote planning and programs that result in the reduction of airborne pollutants

P7-F Coordinate air quality planning efforts with local, regional, and State agencies, and evaluate the air quality impacts of proposed plans and development projects.

P7-G Prepare and implement an ordinance that phases out the use of older, polluting wood-burning appliances and limits the installation of wood-burning devices in new or renovated homes to pellet stoves, EPA-certified woodstoves and fireplace inserts, or natural gas or propane appliances.

O7-C Reduce vehicle trips and emissions, and improve vehicle efficiency, as a means of limiting the volume of pollutants generated by traffic.

P7-H Work with local businesses and tour bus operators to ensure that delivery trucks and buses turn off their engines when the vehicles are stationary

P7-I Investigate the possibility of installing electric vehicle recharging stations with the downtown and at public parking lots

P7-J Work with local hospitality businesses (hotels, motels, restaurants, etc.) to identify opportunities for visitors to use alternative forms of transportation.



P7-K Support and promote bus shuttle systems that provide transportation within the City.

O7-D Minimize contributions to Greenhouse Gases

P7-L Implement the City's Green Building Program requiring green building construction practices for both residential and non-residential construction.

P7-M Continue to support tree planting and revegetation programs that foster the adsorption of greenhouse gases.

P7-N Adopt and encourage practices that provide improved efficiency and energy management technology; shift to low-carbon and renewable fuels and zero emission technologies.



Supporting Information

Open Space

Parks and Open Space

The city of Carmel has nine formally designated park, open space, and recreational areas as well as the Rio Park, which is located outside of the City limits, but is owned by the City. The parks and open space amount to over 68 acres of land. In addition, the City has approximately 67 acres of other areas that can be considered an important open space resource, but are not available for the traditional park and recreation use. Unimproved Right of Way, otherwise known as a linear greenbelt, as well as miniature parks are examples of such resources.

Majority of Carmel's parks are designed for passive use that consists of enjoyment of natural resources and do not provide any recreational facilities. Parks in that category include downtown parks (Devendorf Park, Piccadilly Park, First Murphy Park, Vista Lobos) and parks preserving natural areas (Pescadero Park, Rio Park). Parks that provide active uses or both passive and active uses include Carmel Beach Park, Mission Trails Nature Preserve, Forest Hill Park, and Forest Theater. As of 2008 smoking is prohibited in all of the City's parks. The parks and open space are described in more detail below. [Table 7.1: City of Carmel-by-the-Sea Open Space and Parks](#), provides a summary list of the city's open spaces and parks. [Figure 7.1: Parks, Open Space, Recreation and Community Facilities](#) illustrates the location of the parks and open areas listed in the table.

Mission Trails Nature Preserve

The Mission Trails Nature Preserve (MTNP) is located along southeastern boundary of the City (see [Figure 7.1: Parks, Open Space, Recreation and Community Facilities](#)). The MTNP encompasses 35 acres of unspoiled native vegetation and includes Flanders Mansion, the Lester Rowntree Native Plant Garden, and the meadow off Martin Road. Majority of the park's area is designated as an Environmentally Sensitive Habitat Area (ESHA). The Mission Trails ESHA supports a variety of environmentally sensitive habitats including Monterey pine forest, wetland drainage, central coast arroyo willow riparian forest, coastal terrace prairie, and wet meadow. Hickman's onion population (a special-status plant species) and the Monterey dusky-footed woodrat (special-status wildlife species) are found in the park's habitat.

The MTNP offers passive recreational use to the public. Primary uses include hiking, jogging, bird watching, and relaxation in a quiet setting. Bicycling is allowed on maintenance roads.

The MTNP facilities include the Flanders Mansion and the Lester Rowntree Native Plant Garden. The Flanders Mansion is currently vacant and not used by the City for any public services. There are no public restrooms. There is no private vehicle access to the MTNP proper. There is a limited parking space near the Flanders Mansion and majority of park's users use on-street parking.



Management of the MTNP is described in the Mission Trail Nature Preserve Master Plan. The MTNP Master Plan establishes long-term goals for preservation and use of the MTNP.

The management of the MTNP includes roads, trails, and drainage maintenance, removal of invasive species, and mowing of meadow grasses to reduce the risk of fire. Mowing is performed in June, after the Hickman's onion flowering and seeding period. The Flanders Mansion maintenance is performed on as needed basis and includes pest and vegetation control.

Carmel Beach Park

The Carmel Beach Park is located along western boundary and Scenic Road and San Antonio Avenue (see [Figure 7.1: Parks, Open Space, Recreation and Community Facilities](#)). The North Dunes and portion of the park located between Ocean and Eighth Avenues are also designated as an ESHA. The Carmel Beach Park ESHA supports environmentally sensitive habitat of un-vegetated dunes and dune scrub (see Coastal Resource Management element of the General Plan for a detailed discussion of ESHAs).

This second largest park in the City combines active and passive uses. In addition to beach activities such as swimming, picnicking, and bonfires, this park includes three volleyball courts, located near the Del Mar Avenue parking lot.

The park facilities include permanent bathrooms located near the parking lot and temporary bathrooms located at Scenic Road and Santa Lucia Avenue intersection. The City has plans to convert the temporary restroom facilities to permanent fixture. The City has contracted with a firm to prepare the permanent bathroom designs, however, no funding has been allocated for construction. Three 911 call boxes are located at the Del Mar restrooms at Ocean avenue and Del Mar, Scenic Road/ Eighth Avenue, and Scenic Road/Thirteenth Avenue intersections.

The main parking for the Carmel Beach Park is located at Ocean Avenue/Del Mar Avenue parking lot, which consists of 122 parking spaces. Additional parking is located along Scenic Road, which includes approximately 127 curbside parking spaces.

The management of the Carmel Beach Park is described in detail in the Shoreline Management Plan. The Shoreline Management Plan is a comprehensive document guiding management of the City's shoreline area including its beaches, dunes, bluffs, landscape, and associated infrastructure.

The management of the Carmel Beach Park consists of general maintenance and conservation. The general maintenance includes litter removal from the beach, landscaping along the scenic walkway, and road sweeping. In addition, the City regularly redistributes sand on the beach to cover any exposed rocks and to correct the man-made erosion at the main entrance to the Beach Park (at the bottom of Ocean Avenue). The main entrance experiences heavy pedestrian traffic, which results in shifting of the sand towards the ocean. This correctional measure assures that the sand is not carried away by the ocean.



The conservation measures, described in detail in the Shoreline Management Plan, include replanting and invasive species removal in the North Dunes area.

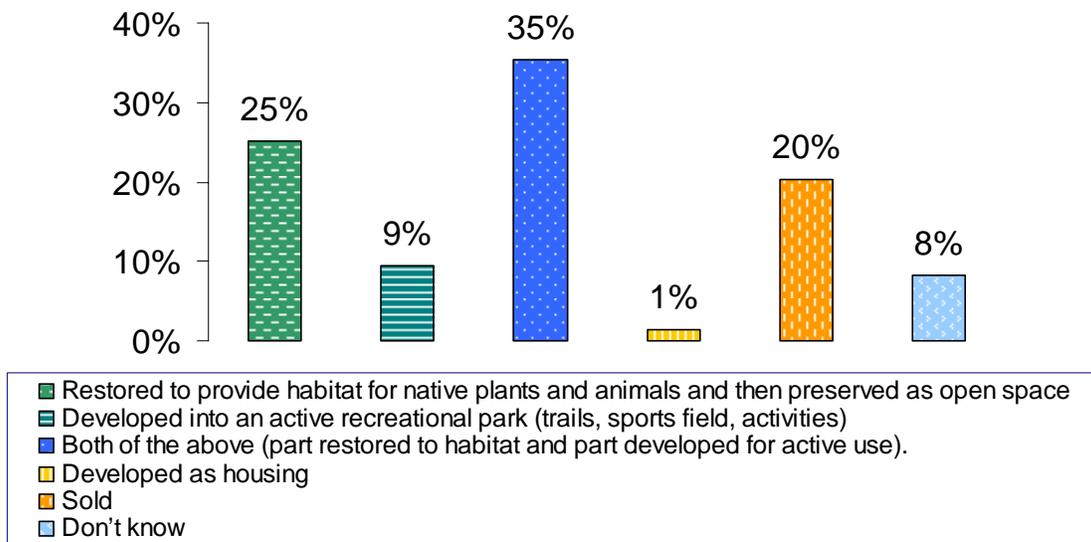
Rio Park

Rio Park is not within the City limits, however, it is City property. The park borders the City’s southern boundary, west of Larson Field (see Figure 7.1: Parks, Open Space, Recreation and Community Facilities).

The Rio Park is an open area providing opportunities for passive use, however, the park is not open to the public at this time. A portion of the park is currently used as a storage/staging area for project development, street projects, and contractor parking.

The Survey asked Carmel residents about their preferred option for the future of the Rio Park. As shown in Graph 7.1: Options for Rio Park Development, most respondents would like the Rio Park property to be both restored to provide habitat for native plants and animals as well as partially developed into an active recreational park. The second most favored option was restoring the habitat, followed by 20 percent of respondents who would like this property to be sold.

Graph 7.1: Options for Rio Park Development



Forest Hill Park

The Forest Hill Park is located in the northern portion of the City. The park is divided into two distinctive lower and upper areas (see Figure 7.1: Parks, Open Space, Recreation and Community Facilities).



This park provides opportunities for active types of uses. The Forest Hill Park includes two tennis courts, basketball hoops, horseshoe pits, BBQ and picnic area, and the only City-owned children's playground. The Forest Hill Park facilities also include two restrooms, one in the upper and one in the lower area.

In addition to on-street parking, the Forest Hill Park has four on-site parking spaces located by the tennis courts.

Management of the park includes maintenance of landscaping and playground, litter removal, and occasional vandalism removal.

Vista Lobos

The Vista Lobos Park is located in the north-central area of the City (see [Figure 7.1: Parks, Open Space, Recreation and Community Facilities](#)). This park provides benches for passive recreation. The Park also includes a community center. The community room is used on weekly basis for various programs. These include an Alcoholics Anonymous class, various art classes sponsored by the City and other organizations, meetings for the Carmel Residents Association, and others. The community room is also used for various City sponsored workshops and public meetings throughout the year.

In addition to the on-street parking spaces, the Vista Lobos Park contains a large number of public parking spaces. Management of the park consists of landscape and irrigation maintenance.

Pescadero Park

The Pescadero Park is located along the northwestern boundary of the City (see [Figure 7.1: Parks, Open Space, Recreation and Community Facilities](#)). The Pescadero Park is designated as an ESHA and supports Monterey Pine Forest on its slopes and riparian and wetland habitat along the Pescadero Creek.

Pescadero park is a passive use open space. The Pescadero canyon is not easily accessible to the public and is mostly used by wildlife. As such, there are no facilities located in or near the park.

The management of the Pescadero Park includes drainage maintenance, invasive species removal, and fire prevention.

Devendorf Park

The Devendorf Park, located along Ocean and Junipero Avenues intersection, is one of the better-known City parks in the commercial district (see [Figure 7.1: Parks, Open Space, Recreation and Community Facilities](#)). Devendorf Park offers passive types of uses such as picnics and relaxation in natural setting. In addition, the park is used for events such as celebration of public holidays, City's birthday, art festivals, an Easter breakfast, and the fourth of July picnic.



The Devendorf Park facilities include a public restroom and sitting benches. Parking for this park is available on adjacent streets. Management of the park consists of landscape and irrigation maintenance.

First Murphy Park

The First Murphy Park is located in the central area of the City (see [Figure 7.1: Parks, Open Space, Recreation and Community Facilities](#)). The First Murphy Park is a passive use park.

The park's facilities include public restrooms, and a historic resource (the first building built in Carmel by Michael Murphy). There is only on-street parking available on the adjacent streets. Management of the park consists of landscape and irrigation maintenance.

Forest Theater

The Forest Theater is located in east central portion of the City, north of the Mission Trails Nature Preserve (see [Figure 7.1: Parks, Open Space, Recreation and Community Facilities](#)). Forest Theatre, California's first outdoor theatre, was founded in 1910. There are 600 seats outdoors and an indoor theatre with 60 seats. The outdoor theatre has been the scene of many theatrical "firsts" and is now used by the Forest Theatre Guild for a summer program of Shakespeare and other playwrights and by the City for Sunday afternoon programs of light entertainment. The indoor theatre is used by the Children's Experimental Theatre for instruction and drama. This site was deeded to the City by gift in 1937 with the stipulation that it always remain a park.

The Forest Theater is currently going through preliminary stages of major renovation, which would include an improved sound system, ADA-accessible walkways, improved emergency vehicle access, improved seating for 550 patrons, new landscaping, parking, and ticket booth.

Additional information about this facility is included in the Public Services and Facilities element.

Piccadilly Park

Piccadilly Park is a small landscaped area located in the center of the City, southwest of Devendorf Park (see [Figure 7.1: Parks, Open Space, Recreation and Community Facilities](#)). This small park offers passive types of uses such as relaxation in natural landscaped setting.

The facilities for this park include a public restroom and benches. There is only on-street parking available on the adjacent streets. Management of the park consists of landscape and irrigation maintenance.



Mini Park and Linear Greenbelts

In addition to formally designated parks and open space, the City of Carmel-by-the-Sea has cumulatively large area of open spaces that are not formal parks. These areas include mini parks, landscaping, and linear greenbelts.

Mini parks and landscaping can be defined as small, unutilized areas, which were improved by introducing various levels of landscaping. Landscaping might include decorative plants and rocks, and benches. Two examples of a mini park are Mary Austin Park and Carmelita Park. Mary Austin Park is a 2,000 square feet park located at the intersection of Monte Verde Street and Fourth Avenue. Carmelita Park is approximately 500 square feet and is located in the corner of Dolores Street and Fifth Avenue.

Linear greenbelts are defined as unimproved right-of-way (ROW), where roadway width is reduced and a certain percentage of the ROW is dedicated to self-sufficient landscaping. Linear greenbelt landscaping might include shrubbery, decorative rocks, occasional benches, and trees that may also act as traffic calming features.

Management of these areas is limited. Majority of miniature parks are planted with self-sufficient plants that do not need to be maintained after the establishment period. Several of the landscaped areas became integrated with adjacent neighborhoods, and maintenance responsibilities were transferred to neighborhood residents.



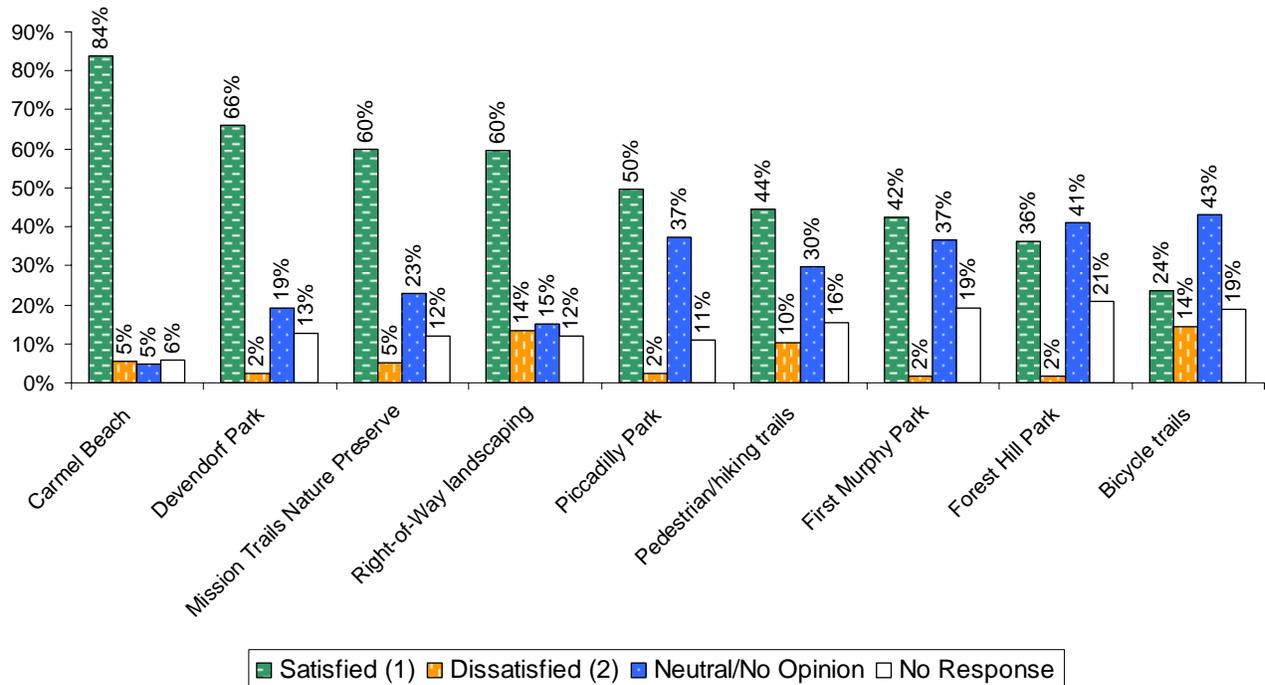
Table 7.1: City of Carmel-by-the-Sea Open Space and Parks

	Name	Size (acres)	Location	Between	Zoning	Type of Use
Parks						
1	Mission Trails Nature Preserve (Flanders Mansion and Lester Rowntree Native Plant Garden)	35.00	Hatton Road		P-1	Active
2	Carmel Beach Park	21.50	Scenic/San Antonio	Pebble Beach Gate/ Carmel Point	P-1	Active and Passive
3	Rio Park ¹	6.24	Lasuen/Dolores	Carmel Mission/ Carmel River	MDR (County Zoning)	Passive
4	Forest Hill Park	1.84	Junipero Avenue	Camino Del Monte/ First Avenue	P-2	Active and Passive
5	Vista Lobos	1.24	Third Avenue	Junipero/ Torres	R-4/ P-2	Passive
6	Pescadero Park	1.10	Second Avenue	North Camino Real/ Casanova Street	P-1	Passive
7	Devendorf Park	0.60	Ocean Avenue	Junipero/ Mission	P-2	Passive
8	First Murphy Park	0.28	Lincoln Avenue	Fifth Avenue/ Sixth Avenue	P-2	Passive
9	Forest Theater	0.20	Mountain View Avenue	Santa Rita Street/ Guadalupe Street	P-2	Active and Passive
10	Piccadilly Park	0.09	Dolores Street	Ocean/ 7th Avenue	P-2	Passive
Parks Total		68.09				
Other Open Spaces (informal)						
	Mini Parks and Linear Greenbelts	67.2 ²				Passive
Other Open Spaces Total		67.2				
TOTAL PARKS AND OPEN SPACE						138.09 ³
Notes:						
P-1 Natural Parklands and Preserves- Purpose: To preserve publicly owned park and beach lands for the benefit and enjoyment of present and future generations, and to prevent the destruction of natural open space.						
P-2 Improved Parklands- Purpose: To provide appropriately located areas for recreation and recreational facilities						
R-4 Multifamily Residential District- Purpose: To provide an appropriate location for a mix of multifamily residential dwelling units convenient to the commercial area and to serve as a buffer or transitional zone between the commercial area and the single-family residential district.						
MDR Medium Density Residential- Purpose: To provide a district to accommodate Medium Density Residential uses in those areas of the County of Monterey where adequate public services and facilities exist or may be developed to support medium density development.						
¹ Rio Park is located outside of the City limits, but is owned by the City.						
² The surface area for mini parks, landscaping, and linear greenbelts in an estimate.						
³ The total includes all formally designated parks and an estimate of all other informal open space areas.						
Source: City of Carmel-by-the-Sea Forest, Parks and Beach Department, April 2007.						



As shown in **Graph 7.2: Parks and Open Space Level of Satisfaction**, the Survey found that most residents expressed satisfaction with the City’s parks, open space and other amenities in Carmel. A large percentage of residents identified themselves as being neutral, and a very small percentage of residents being dissatisfied with parks in Carmel. The Carmel Beach, Devendorf Park, and the Mission Trails Nature Preserve were ranked as top three parks that residents were satisfied with the most.

Graph 7.2: Parks and Open Space Level of Satisfaction



City Standards for Acquiring Open Space

The City of Carmel is almost completely built out and opportunities for land acquisition are very limited. Most of the City’s property acquisitions tend to be opportunistic. Acquisitions are made when properties become available, there is a recognized need, and there is available funding or other means to accomplish the goal. To guide any future efforts to acquire property the City has

- (1) Satisfied category for this graph combines the results of the very satisfied and somewhat satisfied categories. For a detailed breakdown of these categories, please refer to Appendix A.
- (2) Dissatisfied category for this graph combines the results of the very dissatisfied and somewhat dissatisfied categories. For a detailed breakdown of these categories, please refer to Appendix A.



developed a list of unmet community needs and property acquisition priorities (Carmel 2004). The items listed below are in suggested order of priority:

- Housing for low-income or senior households.
- Parking.
- Open space, parks and habitat conservation (Carmel 2004).

In addition to the priority list, the City has identified two desirable properties to be added to publicly owned land, which include the last piece of privately owned beach frontage and the private, undeveloped properties in Pescadero Canyon (Carmel 2004).

Beach

The management of Carmel's beaches is the responsibility of the Public Services Department. This department is responsible for the regular maintenance along Beach Bluff Pathway, litter and trash pick-up from the Pathway and beach areas, maintenance of trees and landscape plants, Pathway irrigation system, beach access stairways, and restroom facilities. The department is also responsible for the maintenance and repairs of shoreline walls and revetments, beach access stairways and ramps, the Pathway, storm drains, Scenic Road, and other structures (Carmel 2003).

The City's Forest and Beach Commission also deals with issues affecting the coastline and is an advisory group to the FPB department.

Additional information related to the beach maintenance and shoreline protection is included in the Coastal Resource Management Element.

Urbanized Forest

The term "urbanized forest" refers to forests that were present prior to urban development, as opposed to "urban forest," which describes forests planted after the urban development. Urbanized forest is characterized by a variety and diversity of species, age, and random tree spacing and location (Carmel 2001). These characteristics of urbanized forests give Carmel its character of village among the trees.

Tree Survey

The City's Forest, Parks, and Beach Department performs a yearly tree survey. Each year, as part of the survey a quarter of 90% of the City's public land area is surveyed for the type and quantity of trees. Formally designated parks and open space are not included in the survey. This cyclic system provides the Public Services department with citywide data every four years. The surveys are available from the year 1971 to 2008 with some interruptions in the year 1975 and 1980. Up to year 2006, the data included counts for both public and private trees. Starting with the 2006 tree survey, the counts will be provided only for the public trees. The Commercial



Business District trees are surveyed every other year (even years) and are included in the overall counts.

There are several factors that affect the tree survey data. Each year a different team of volunteers performs the survey on a quarter of the City’s land area. Due to personal perception, different trees may or may not be included in the survey. The four-year cycle provides a snapshot of the state of the forest in the surveyed quarter. While the resulting data is not a perfect representation of the state of the entire urbanized forest, it provides basis for documenting trends in tree composition and quantity.

Starting in 2006, the tree survey only included public trees. To account for this change in methodology the below discussion includes the information based on six full survey cycles, starting in 1981 and ending in 2004 for both private and public trees and information based on seven survey cycles (1981 through 2008) for only public trees.

Forest Composition and Trends

Table 7.2: Number of Public and Private Trees in Carmel’s Urbanized Forest, provides detailed findings of the City tree survey for public and private trees between 1981 and 2004. As mentioned above, the data may vary slightly between survey cycles due to many factors. As a result the slight variation in the total number of trees shown in Table 7.2: Number of Public and Private Trees in Carmel’s Urbanized Forest, could be a result of the survey methodology imperfections and not actual changes in tree numbers.

Table 7.2: Number of Public and Private Trees in Carmel’s Urbanized Forest

Tree Type	1981-1984	1985-1988	1989-1992	1993-1996	1997-2000	2001-2004	Percent Change 1981-1984 to 2001-2004
Pine	7,221	7,177	7,139	7,446	6,804	5,748	-20.4%
Oak	10,255	11,145	12,021	13,729	12,715	11,292	10.1%
Acacia	2,795	2,983	2,421	2,412	2,675	1,679	-40.0%
Cypress	1,257	1,252	1,371	1,464	1,447	1,432	14.0%
Redwood	352	384	389	562	553	537	53.0%
Other	7,526	7,691	7,370	10,962	7,207	6,622	-12.0%
TOTAL	29,406	30,632	30,711	36,575	31,401	27,760	-5.6%

Source: City of Carmel-by-the-Sea Tree Survey, 2009.

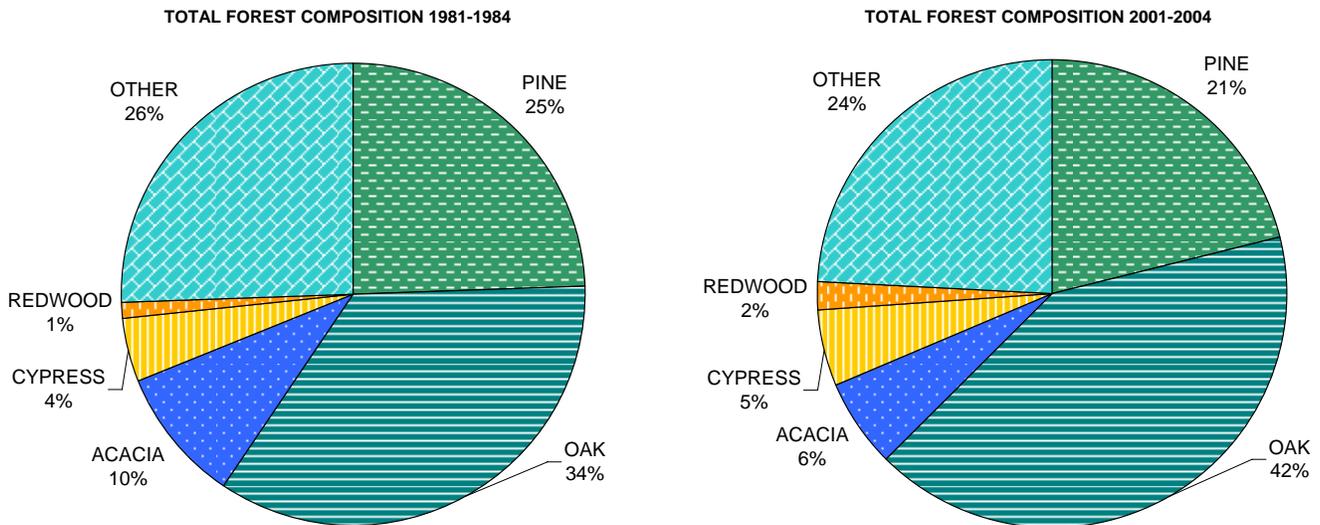
Taking methodology shortcomings into account, the Carmel urbanized forest total numbers have remained relatively steady over the last twenty years. Acacia trees experienced the highest decrease in numbers at approximately 40 percent. Both pine and “other” trees experienced slightly more than 20 and 12 percent reduction in numbers, respectively. Redwoods experienced



the highest amount of growth (53 percent). However, redwoods still remain as the least represented tree species in Carmel. Cypress and oaks experienced a 14 and 10 percent growth, respectively.

Carmel’s urbanized forest consists of Pine, Oak, Acacia, Cypress, and Redwood trees with a mix of other types of trees. Oak is the most common species for trees on private and public properties, followed by pine, acacia, cypress, and redwood. A mix of other tree species represents approximately 24 percent of the City’s urbanized forest. Graph 7.3: Total Forest Composition for Years 1981-1984 and 2001-2004, provides a graphic representation of the urbanized forest composition for the private and public trees.

Graph 7.3: Total Forest Composition for Years 1981-1984 and 2001-2004.



Source: City of Carmel-by-the-Sea Tree Survey, 2009.

Table 7.3: Number of Public Trees in Carmel’s Urbanized Forest, provides detailed findings of the City tree survey for public trees between 1981 and 2008. The total numbers of trees in public forest vary slightly over the years, however, this variation may be due to survey methodology imperfections discussed above. The public forest numbers have remained relatively steady over the 28 year period from 1981 and 2008. Acacia trees experienced the highest reduction in numbers (approximately 47 percent) followed by pine trees (32 percent). Redwoods experienced the highest amount of growth (138 percent). However, redwoods still remain as the least represented public forest tree species in Carmel. Public trees in the “other” category experienced a growth of 45 percent, while Cypress and Oak increased in numbers by 35 and 20 percent, respectively.



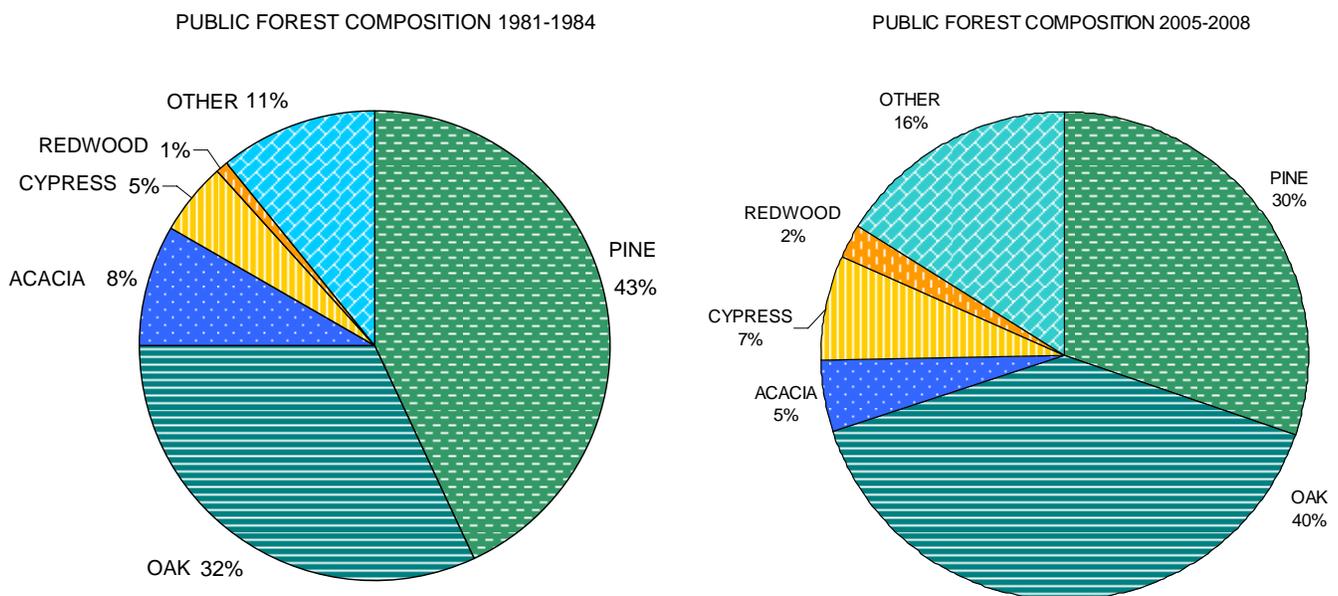
Table 7.3: Number of Public Trees in Carmel’s Urbanized Forest

Tree Type	1981-1984	1985-1988	1989-1992	1993-1996	1997-2000	2001-2004	2005-2008	Percent Change 1981-1984 to 2005-2008
Pine	3,958	4,026	4,043	4,230	3,872	3,096	2,692	-32.0%
Oak	2,944	3,456	3,866	4,727	4,136	3,342	3,531	19.9%
Acacia	758	885	725	971	877	579	403	-46.8%
Cypress	463	441	508	526	606	621	625	35.0%
Redwood	84	94	86	128	173	171	200	138.1%
Other	983	1,412	1,135	1,709	1,433	1,344	1,430	45.5%
TOTAL	9,190	10,314	10,363	12,291	11,097	9,153	8,881	-3.4%

Source: City of Carmel-by-the-Sea Tree Survey, 2009.

Carmel’s urbanized public forest consists of Pine, Oak, Acacia, Cypress, and Redwood trees with a mix of other types of trees. In the 2005-2008 period oak was the most common species public forest, followed by pine, trees in the “other” category, cypress, acacia, and redwood. **Graph 7.4: Public Forest Composition for Years 1981-1984 and 2005-2008**, provides a graphic representation of the urbanized forest composition for the public forest.

Graph 7.4: Public Forest Composition for Years 1981-1984 and 2005-2008.



Source: City of Carmel-by-the-Sea Tree Survey, 2009.



Forest Management

The urbanized forest is managed by the Forest, Parks, and Beach FPB department. The two main goals of forest management are to keep the forest viable and safe.

As part of the management for forest viability, the FPB department manages forest disease (such as pitch canker) and implements pruning for structure, strength, and healthy canopy as well as removal of dead trees. The City cooperates with Pebble Beach and Monterey City to manage the spread of pitch canker, a disease that causes die-back of individual pine branches, leading to a general decline in tree health, and, in some cases, premature death. The City also follows the recommendations of the State Pitch Canker Task force, which develops short and long-term management guidelines for managing pitch canker in Monterey pine forest, defines research and management priorities for pitch canker, and allocates resources to implement guidelines and recommendations.

The safety concerns include limb and tree failures and fire hazards. The Public Services department has an active pruning and removal of trees program that addresses both of these issues. Trees are evaluated during yearly tree surveys, city drives, and reports from the City staff and the public. Once a tree is deemed a safety concern, it is pruned or removed completely. Preventative pruning minimizes damage from trees during storm events. The FPB also responds to reports of rocking trees during storms, and intercepts when possible. The Public Works department assists the FPB department with heavy equipment and staff.

The preventative pruning and dead tree removal as well as disease control also reduce fire potential. Healthy, green trees are not as susceptible to fire as dead or unmanaged trees, and in case of fire healthy trees limit the speed of fire spreading.

Conservation

Water Supply

The lack of an available water supply has limited growth in Carmel and throughout the Monterey Peninsula region over the last ten years. Carmel is under the jurisdiction of the Monterey Peninsula Water Management District (MPWMD) and receives its water from the California-American Water Company (Cal-Am).

In 1980 the residential per capita water use was 171 gallons per day, which was the lowest per capita use for the Cal-Am system. As shown in [Table 7.4: Residential and Commercial Water Use per Connection](#), Carmel-by-the-Sea residential water use between the years of 2002 and 2006 was the fourth lowest per capita use within the Cal-Am system, following the cities of Pacific Grove, Sand City, and Monterey. Carmel's residential per capita water use ranged between 143 and 158 gallons per day from 2002 to 2006.

The commercial uses represent the largest water consumers in the Cal-Am's service area. The City of Carmel was the second lowest per connection water user in the commercial uses category



(Table 7.4: Residential and Commercial Water Use per Connection). Carmel’s commercial per connection water use ranged from 529 to 579 gallons per day from 2002 to 2006.

Table 7.4: Residential and Commercial Water Use per Connection

Jurisdiction	Year 2002		Year 2003		Year 2004		Year 2005		Year 2006	
	Acre Feet	Gallons per Day								
Residential										
Carmel-by-the-Sea	0.172	153	0.177	158	0.161	143	0.164	147	0.163	146
Monterey	0.165	147	0.167	149	0.152	135	0.155	138	0.155	138
Pacific Grove	0.153	137	0.155	139	0.141	126	0.145	130	0.145	130
Seaside	0.202	180	0.208	186	0.189	168	0.197	176	0.199	178
Del Ray Oaks	0.190	170	0.195	174	0.177	157	0.180	161	0.182	163
Sand City	0.162	145	0.154	138	0.130	116	0.151	134	0.156	140
Monterey County	0.293	262	0.291	260	0.284	253	0.269	240	0.270	241
System Average	0.191	171	0.193	172	0.176	157	0.180	161	0.181	162
Commercial										
Carmel-by-the-Sea	0.620	553	0.629	561	0.594	529	0.645	576	0.626	559
Monterey	1.144	1021	1.152	1028	1.057	941	1.081	965	1.061	948
Pacific Grove	0.778	695	0.792	707	0.710	632	0.716	639	0.723	646
Seaside	0.645	576	0.690	616	0.640	569	0.683	609	0.694	620
Del Ray Oaks	0.820	732	0.695	620	0.676	602	0.695	620	0.553	494
Sand City	0.474	424	0.463	414	0.409	364	0.402	359	0.414	369
Monterey County	1.519	1356	1.607	1435	1.599	1424	1.490	1330	1.452	1296
System Average	0.857	765	0.861	769	0.812	723	0.816	728	0.789	704
Notes: The values represent per customer connection amounts.										
Source: California American Water, 2007.										

Water Conservation

The MPWMD developed a seven stage *Expanded Water Conservation and Standby Rationing Plan*, which responds to water shortages, whether caused by the weather or the limits imposed by the State Water Resources Control Board. As of March 1999, all users within the MPWMD service area are subject to Stage 1 of the Conservation Plan. Stage 1 is a water conservation partnership between Cal-AM and the MPWMD, where both entities work together to promote water conservation on the community and to educate the public. The water conservation is



encouraged by block water rates, where customers that use more water pay higher water rates than those who use less water.

In addition, the City's Municipal Code includes specific requirements for water conservation in existing and new developments such as landscaping, plumbing fixtures, irrigation, and the use of free-flowing water conveyances, such as hoses. New development projects and existing structures needing a building permit for substantial proposed construction must meet the City's water conservation requirements.

Urbanized Forest

Both the survey and the workshops indicated Carmel's urbanized forest as an important topic for Carmel residents. While a clear division exists between those who would support the planting of additional trees and those who would support the removal of some trees, there is consensus regarding providing adequate care of the forest as a whole.

The City of Carmel-by-the-Sea Forest Management Plan (2001) (FMP), provides specific direction and guidelines for the maintenance and enhancement of Carmel's urbanized forest. The FMP provides management guidance by presenting the City's goals and objectives relating to trees and the policies by which they can be implemented. In addition to collecting all the General Plan's goals, objectives, and policies related to trees, the FMP information, standards, and City requirements related to proper tree pruning and removal, planting of landscape trees, tree density policies, requirements for protecting trees from construction impacts, guidelines for handling diseased trees, and a list and description of allowed tree species as well as a list of compatible plants allowed under and around native trees.

Additional information related to the urbanized forest conservation is included in the Coastal Resource Management Element.

Natural Habitat

Environmentally Sensitive Habitat Areas (ESHAs)

Central coast of California supports a wide range of climatic, topographic, and soil conditions that promote a diverse and rich wildlife community. While mostly developed, the City of Carmel contains approximately 68 acres of public parks/open space and 10 acres of privately owned undeveloped land that sustain the City's natural resources. These areas include Pescadero Canyon, Rio Park, Mission Trails Park, and Carmel Beach (see [Figure 7.2: Environmentally Sensitive Habitat Areas \[ESHAs\]](#)) (Carmel 1995).

Additional information related to the ESHAs is included in the Coastal Resource Management Element.



Areas of Special Biological Significance

Carmel Bay is designated as an Area of Special Biological Significance (ASBS) by the State Water Resources Control Board (SWRCB). Areas of special biological significance are those areas designated by the State Water Control Board as requiring protection of species or biological communities to the extent that alternation of natural water quality is undesirable.

The Carmel Bay ASBS has 6.7 miles in coastline length and 1,584 acres of marine waters (see [Figure 7.3: Carmel Bay Area of Special Biological Significance](#)). The ASBS is adjacent to the City of Carmel and Pebble Beach Golf Course, and is contiguous with the Point Lobos ASBS.

The climate of the Carmel Bay ASBS is characterized by the mild air temperatures and the cool ocean breezes. Fog persists (until early afternoon) in late spring and summer. Typically 90 percent of the rainfall occurs between November and April, and summers are dry.

The ASBS coastline is characterized by alternating rocky points and extensive granitic sand beaches. A high rocky cliff extends northeastward from Pescadero Point, forming partial protection for Stillwater Cove and Pebble Beach. Arrowhead Point, just south of Stillwater Cove, is oriented in a southwesterly direction and partially protects both the cove and Carmel City Beach to the south from wave action.

The Carmel River drains into ASBS just south of Carmel Point. The coastline just north of the river and a few miles south consists of the steep Carmel River Beach, interspersed with a few granite outcroppings. There are several watersheds adjacent to the Carmel Bay ASBS; however, all freshwater discharges are seasonal. Pescadero Canyon drains into the ASBS at the north end of Carmel City Beach and San Jose Creek drains into Monastery Beach. The principle drainage is the Carmel River Basin, which covers a total of about 225 square miles in a northwest-southwest direction.

The submarine topography of the ASBS is dominated by the Carmel canyon, a major tributary of the Monterey submarine canyon. The Carmel canyon originates about ¼ mile offshore from the mouth of the San Jose Creek in the ASBS.

The ASBS contains a highly diverse marine animal and plant life within a relatively short length of coastline. The ASBS provides habitat for approximately 30 flora species, 125 invertebrate species, and 78 fish species.

Additional information related to water quality issues associated with the ASBS is included in the Coastal Resource Management Element.

Soils

Soils within the city limits and along Carmel Valley are generally in Soil Class I, II, or III, indicating that they are suitable for cultivation, pasture, range, woodland, wildlife, or urban uses. Soils south of Carmel River floodplain are generally in Soil Class VII or VIII, so they are



unsuitable for most cultivation, but are broadly suited for grazing, woodland, and wildlife uses, and may be used for recreation or water supply.

As shown on [Figure 7.4: Carmel-by-the-Sea and Vicinity Soils](#), majority of soils within the City limits consist of a variety of sandy soils, and silt, sandy, and clay loams. There are no agricultural lands within the city limits of Carmel.

Air Quality

Carmel is located within the North Central Coast Air Basin (Basin). The Basin, which is just south of the San Francisco Bay Area Air Basin, covers an area of 5,159 square miles and consists of the counties of Santa Cruz, San Benito, and Monterey. Marine breezes from Monterey Bay dominate the climate of this portion of the Basin. Westerly winds predominate in all seasons, but are strongest and most persistent during the spring and summer months.

The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as human created influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall and topography all affect the accumulation and/or dispersion of pollutants throughout the Basin area.

In general, the air pollution potential of the coastal areas is relatively low due to persistent winds. However, the Basin is subject to temperature inversions that restrict vertical mixing of pollutants and the warmer inland valleys of the Basin have a high pollution potential.

Global Climate Change

Global climate change is a subject that is gaining increasing statewide, national and international attention. Recent reports released by the State of California indicate that climate change could have profound impacts on California's water supply and usage. In the recent report prepared by the California Climate Change Center, "Our Changing Climate: Assessing the Risks to California" (2006), the state's top scientists consider global warming to be a very serious issue requiring changes in resource, water supply, and public health management. Natural processes and human activities such as fossil fuel combustion, deforestation and other changes in land use are resulting in the accumulation of greenhouse gases (GHGs) such as carbon dioxide (CO₂) into the atmosphere. An increase in GHG emissions is said to result in an increase in the earth's average surface temperature, commonly referred to as global warming, which is expected to affect weather patterns, average sea level, ocean acidification, and precipitation rates.



California is a substantial contributor of global greenhouse gases, emitting over 400 million tons of carbon dioxide (CO₂) a year.² Greenhouse gases are global in their effect. Because primary greenhouse gases have a long lifetime in the atmosphere, accumulate over time, and are generally well mixed, their impact on the atmosphere is mostly independent of the point of emission. Although GHG emissions are not currently addressed in federal regulations, the State of California recently passed the Global Warming Solutions Act of 2006 (AB 32), which seeks to reduce GHG emission generated by California. AB 32 (which is further described below) states:

Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

Global Climate Change Gases

The natural process through which heat is retained in the troposphere³ is called the “greenhouse effect.” The greenhouse effect traps heat in the troposphere through a three fold process as follows: shortwave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of longwave radiation; and greenhouse gases in the upper atmosphere absorb this longwave radiation and emit this longwave radiation both into space and back toward Earth. This “trapping” of the longwave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

The most abundant greenhouse gases are water vapor and carbon dioxide. While many other trace gases have greater ability to absorb and re-radiate longwave radiation, these gases are not as plentiful in the atmosphere. For this reason, and to gauge the potency of greenhouse gases, scientists have established a Global Warming Potential for each greenhouse gas based on its ability to absorb and re-radiate longwave radiation. The Global Warming Potential of a gas is determined using carbon dioxide as the reference gas with a Global Warming Potential of 1.

Table 7.5: Global Climate Change Gases and Compounds, includes a summary of the most common GHG, main sources, and Global Warming Potential.

² Air Resources Board 1990 to 2004 State Inventory (November 2007).

³ The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth’s surface to 10 to 12 kilometers.



Table 7.5: Global Climate Change Gases and Compounds

Type of Gas	Main Source	Global Warming Potential ¹
Gases		
Water Vapor (H ₂ O)	Natural processes, such as evaporation from oceans and rivers and transpiration from plants. The primary human related source of water vapor comes from fuel combustion in motor vehicles (less than 1 percent).	N/A
Carbon Dioxide (CO ₂)	CO ₂ is primarily generated by fossil fuel combustion in stationary and mobile sources (2004, 83.8 percent of California’s greenhouse gas emissions were carbon dioxide ²).	1
Methane (CH ₄)	In the United States, the top three sources of methane come from landfills, natural gas systems, and enteric fermentation.	21
Nitrous Oxide (N ₂ O)	Primary human related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production	310
Hydrofluorocarbons (HFCs)	HFCs is used for cooling and foam blowing as phase out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) continues.	140 for HFC-152a 6,300 for HFC-236fa
Perfluorocarbons (PFCs)	PFCs are primarily created as a byproduct of aluminum production and semi conductor manufacturing.	5,700 to 11,900
Sulfur hexafluoride (SF ₆)	SF ₆ is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity	23,900 ³
Compounds		
Hydrochlorofluorocarbons (HCFCs)	The main uses of HCFCs are for refrigerant products and air conditioning systems.	93 for HCFC-123 2,000 for HCFC-142b ⁴
1,1,1 trichloroethane	1,1,1 trichloroethane or methyl chloroform is a solvent and degreasing agent commonly used by manufacturers.	110 ⁵
Chlorofluorocarbons (CFCs)	CFCs are used as refrigerants, cleaning solvents, and aerosols spray propellants.	4,600 for CFC 11 14,000 for CFC 13 ⁶
Ozone (O ₃)	Ozone occurs naturally in the stratosphere where it is largely responsible for filtering harmful ultraviolet (UV) radiation. In the troposphere, ozone acts as a greenhouse gas by absorbing and re-radiating the infrared energy emitted by the Earth.	25 ⁷

Note:

¹ All Global Warming Potentials are given as 100 year GWP. Unless noted otherwise, all Global Warming Potentials were obtained from the Intergovernmental Panel on Climate Change. Climate Change (Intergovernmental Panel on Climate Change, *Climate Change, The Science of Climate Change – Contribution of Working Group I to the Second Assessment Report of the IPCC*, 1996).

² California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004*, December 2006, http://www.energy.ca.gov/2006publications/CEC_600_2006_013/CEC_600_2006_013_SF.PDF.

³ SF₆ global warming contribution is not as high as the Global Warming Potential would indicate due to its low mixing ratio compared to carbon dioxide (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm]) (United States Environmental Protection Agency, *High GWP Gases and Climate Change*, October 19, 2006, <http://www.epa.gov/highgwp/scientific.html#sf6>).

⁴ United States Environmental Protection Agency, *Protection of Stratospheric Ozone: Listing of Global Warming Potential for Ozone*



Depleting Substances, November 7, 2006, http://www.epa.gov/fedrgstr/EPA_AIR/1996/January/Day_19/pr_372.html.

⁵ United States Environmental Protection Agency, *Protection of Stratospheric Ozone: Listing of Global Warming Potential for Ozone Depleting Substances*, November 7, 2006, http://www.epa.gov/fedrgstr/EPA_AIR/1996/January/Day_19/pr_372.html.

⁶ United States Environmental Protection Agency, *Class I Ozone Depleting Substances*, March 7, 2006, <http://www.epa.gov/ozone/ods.html>.

⁷ Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*, February 2007

Global Climate Change Regulatory Programs

Senate Bill 375

Senate Bill 375 would require metropolitan planning organizations to include sustainable communities' strategies in their regional transportation plans. The purpose of Senate Bill 375 would be to reduce greenhouse gas emissions from automobiles and light trucks, require the CARB to provide greenhouse gas emission reduction targets from the automobile and light truck sector for 2020 and 2035 by January 1, 2010 and update the regional targets until 2050. Senate Bill 375 would require certain transportation planning and programming activities to be consistent with the sustainable communities strategies contained in the regional transportation plan. The bill would also require affected regional agencies to prepare an alternative planning strategy to the sustainable communities' strategies if the sustainable communities' strategy is unable to achieve the greenhouse gas emissions reduction targets. Senate Bill 375 was approved by the California State Assembly and the California Senate in August 2008. Governor Schwarzenegger signed and approved Senate Bill 375 on September 30, 2008.

Assembly Bill 32

The Legislature enacted Assembly Bill 32 (Assembly Bill 32, Nuñez), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006 to further the goals of Executive Order S-3-05. Assembly Bill 32 represents the first enforceable statewide program to limit greenhouse gas emissions from all major industries, with penalties for noncompliance. The CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of Assembly Bill 32. The foremost objective of the CARB is to adopt regulations that require the reporting and verification of statewide greenhouse gas emissions. This program would be used to monitor and enforce compliance with the established standards. The first greenhouse gas emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020. The CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost effective greenhouse gas emission reductions. Assembly Bill 32 allows the CARB to adopt market based compliance mechanisms to meet the specified requirements. Finally, the CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market based compliance mechanism adopted. In order to advise the CARB, it must convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee. By January 2009, the CARB must adopt mandatory reporting rules for significant sources of greenhouse gases and also a plan



indicating how reductions in significant greenhouse gas sources would be achieved through regulations, market mechanisms, and other actions.

Executive Order S-3-05

In June 2005, Governor Schwarzenegger established California's greenhouse gas emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: Greenhouse gas emissions should be reduced to 2000 levels by 2010; greenhouse gas emissions should be reduced to 1990 levels by 2020; and greenhouse gas emissions should be reduced to 80 percent below 1990 levels by 2050. The Secretary of the California EPA (the Secretary) is required to coordinate efforts of various agencies in order to collectively and efficiently reduce greenhouse gases. Some of the agencies involved in the greenhouse gas reduction plan include Secretary of Business, Transportation, and Housing Agency, Secretary of Department of Food and Agriculture, Secretary of Resources Agency, Chairperson of CARB, Chairperson of the Energy Commission, and the President of the Public Utilities Commission. The Secretary is required to submit a biannual progress report to the Governor and State Legislature disclosing the progress made toward greenhouse gas emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, and the coastline and forestry, and reporting possible mitigation and adaptation plans to combat these impacts.

Sustainable Practices

In 1987, the United Nations' World Commission on Environment and Development released a report, *Our Common Future*, which brought the term sustainability into widespread use. In defining sustainability, the United Nations' World Commission offered these five key concepts:

- The needs of the future must not be sacrificed to the demands of the present.
- Humanity's economic future is linked to the integrity of natural systems.
- The present world system is not sustainable because it is not meeting the needs of many, especially the poor.
- Protecting the environment is impossible unless we improve the economic prospects of the earth's poorest peoples.
- We must act to preserve as many options as possible for future generations, since they have the right to determine their own needs for themselves.

The American Planning Association identified the following four objectives in planning for sustainability:

- Reduce dependence upon fossil fuels, extracted underground metals, and minerals.
- Reduce dependence on chemicals and other manufactured substances that can accumulate in nature.



- Reduce dependence on activities that harm life sustaining ecosystems.
- Meet the hierarchy of present and future human needs fairly and efficiently.

Sustainability is often defined in many ways and its principles can be applied to various aspects of a community. For the purpose of a general plan, sustainability can be defined as aligning community's built environment and socioeconomic activities with the natural systems that support life.

Sustainable practices on a community level often align with the core values a community is already embracing. Carmel's community has a long standing history of ensuring that the built environment is respectful of the natural environment.

Policies encouraging sustainable practices were embedded into all of the revised elements of this General Plan. Majority of these policies clarified and solidified already existing community core values. Spreading these policies throughout the various elements reflects the point of view, which understands that sustainability works best when it is seamlessly intertwined with all other aspects of a community, rather than acting separately, or alongside of it.

Green Building Program

In an attempt to promote energy efficiency, improve air quality, preserve natural resources and encourage sustainable construction practices the City is developing a Green Building Program. The program is expected to be adopted sometime in 2009.

In a recent community survey 57 percent of respondents either strongly agreed or somewhat agreed with the City developing green building standards for new construction in the City. Respondents indicated support for the City's adoption of a variety of environmental sustainability programs for municipal operations, businesses, and residents. Specifically, the respondents would support the adoption of local standards for municipal buildings construction and remodeling, new building construction, and remodeling of existing structures.

Scenic Highways

State Scenic Highway System

Many state highways are located in areas of outstanding natural beauty. California's Scenic Highway Program was created by the Legislature in 1963 with a purpose to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment (Streets and Highways Code, Sections 260 through 263). A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.



Official designation requires a local governing body to enact a Corridor Protection Program that protects and enhances scenic resources along the highway. A properly enforced program can:

- Protect the scenic corridor from encroachment of incompatible land uses such as junkyards, dumps, concrete plants, and gravel pits, etc.
- Mitigate activities within the corridor that detract from its scenic quality by proper siting, landscaping or screening.
- Prohibit billboards and regulate on-site signs so that they do not detract from scenic views.
- Make development more compatible with the environment and in harmony with the surroundings.
- Regulate grading to prevent erosion and cause minimal alteration of existing contours and to preserve important vegetative features along the highway.
- Preserve views of hillsides by minimizing development on steep slopes and along ridgelines.
- Prevent the need for noise barriers (sound walls) by requiring a minimum setback for residential development adjacent to a scenic highway.

The three officially designated (adopted) scenic highways in Monterey County are: Highway 1 from the San Luis Obispo county line to the Highway 68 interchange near the Naval Post Graduate School in Monterey, a distance of 78 miles; Highway 68 from Highway 1 to the Salinas River; and Highway 156 from 1 mile east of Castroville to Highway 101 near Prunedale.

The Monterey County also has three roadways, which are eligible for listing as a State Scenic Highway. These roadways include Highway 25 – between Highway 198 and San Benito County line; Highway 68 – between Highway 1 at the City of Monterey and Salinas River – Highway 101; and Highway 198 – between Highway 101 and Fresno County line.

Monterey County Scenic Highway System

Monterey County has two officially designated County scenic highways: Los Laureles Grade Road between Highway 68 and Carmel Valley Road, and Interlake Road, a county road crossing the Nacimiento-San Antonio Reservoir Recreation Area.

Local Scenic Corridors in Carmel

There are two scenic corridors in Carmel, the Junipero Avenue and Scenic Road.

Junipero Avenue (From 1st Avenue to Rio Road)

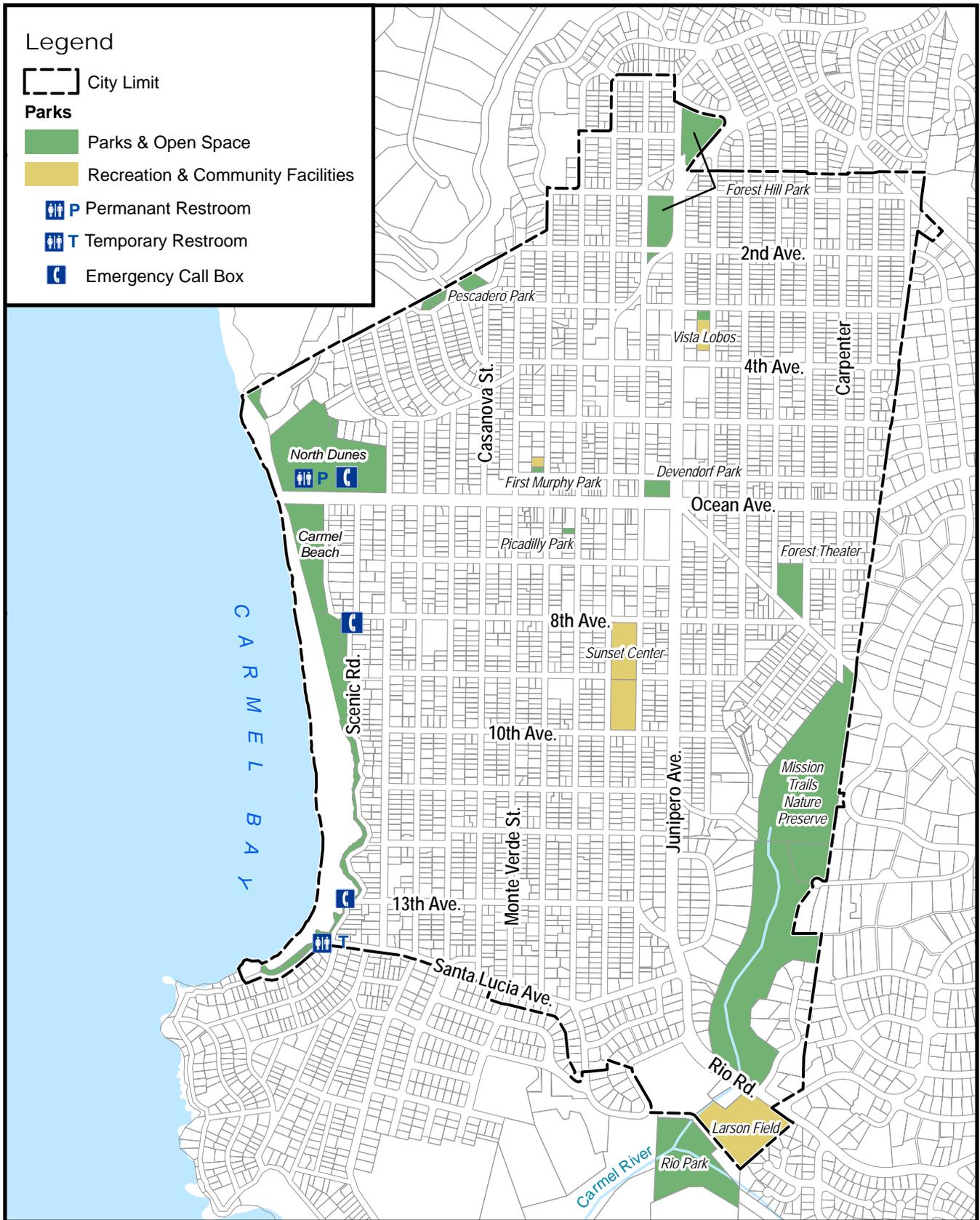
Junipero Avenue has been paved to the natural contours of the land and lacks visual distracting street signals and directional signs. From north to south, Junipero Avenue provides access to



and/or scenic views of the City tennis courts, Forest Hill Park, the commercial district, Devendorf Park, Sunset Community and Cultural Center (via Eighth or Tenth Avenues), Mission Trail Park and the Carmel Mission (via Rio Road).

Scenic Road (From Eighth Avenue to Southern City Limits)

Scenic Road is a one-way roadway which meanders south, along the Cypress trimmed beach bluffs, beyond the southern city limits, past the historic Robinson Jeffers Tor House, and ending along the Carmel River State Beach. The junction of Scenic Road and Santa Lucia Avenue, where Scenic Road becomes a two-way road, provides an uninterrupted view of the length of the city beach from Pebble Beach to Carmel Point.



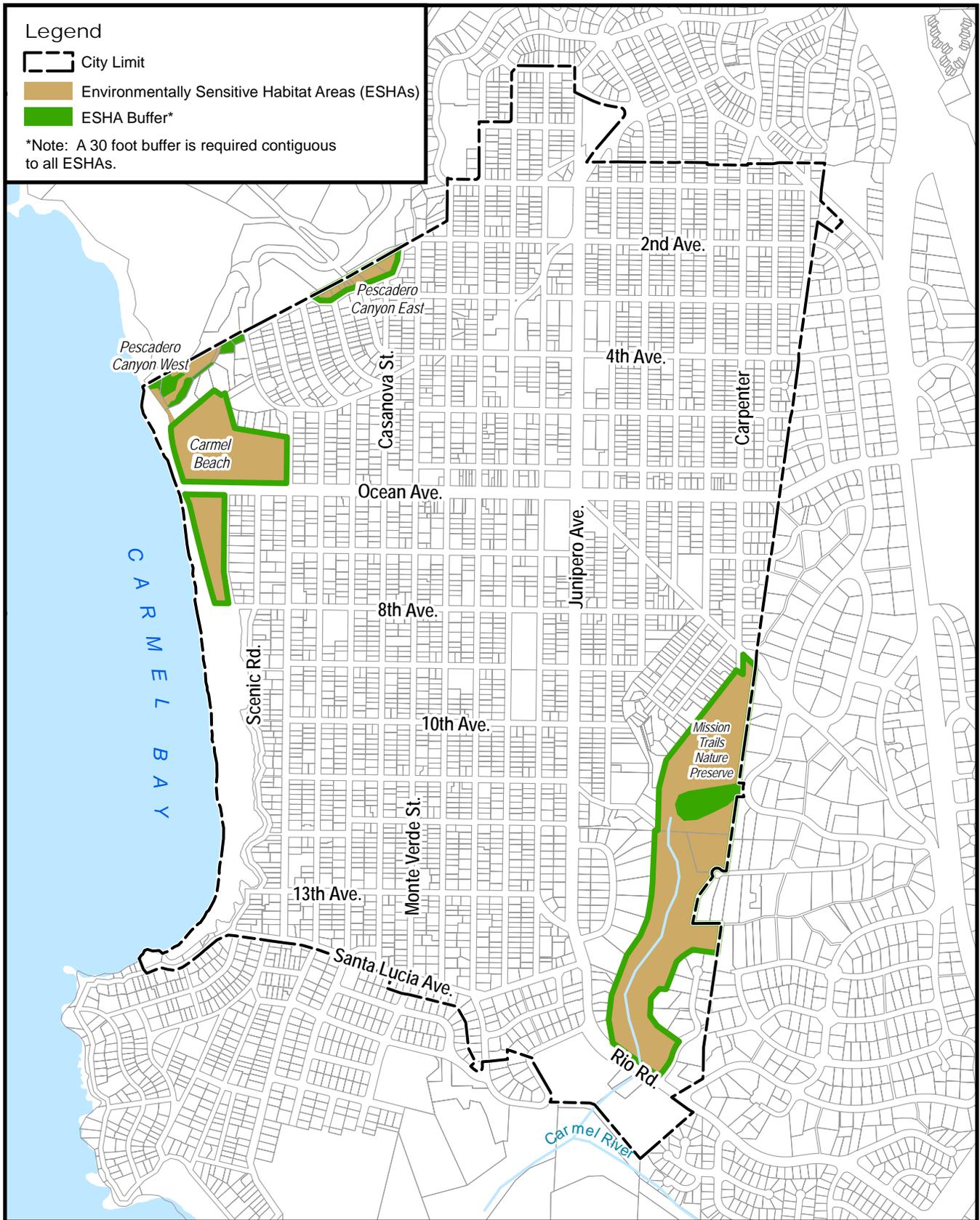
Source: City Carmel-by-the-Sea (2009)



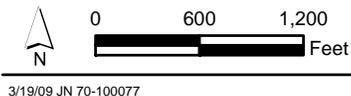
3/19/09 JN 70-100077

CARMEL-BY-THE-SEA GENERAL PLAN UPDATE
**Parks, Open Space, Recreation
 and Community Facilities**

Figure 7.1



Source: City Carmel-by-the-Sea (2009)

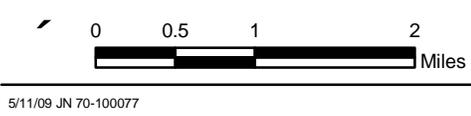


CARMEL-BY-THE-SEA GENERAL PLAN UPDATE
**Environmentally Sensitive
 Habitat Areas (ESHAs)**

Figure 7.2

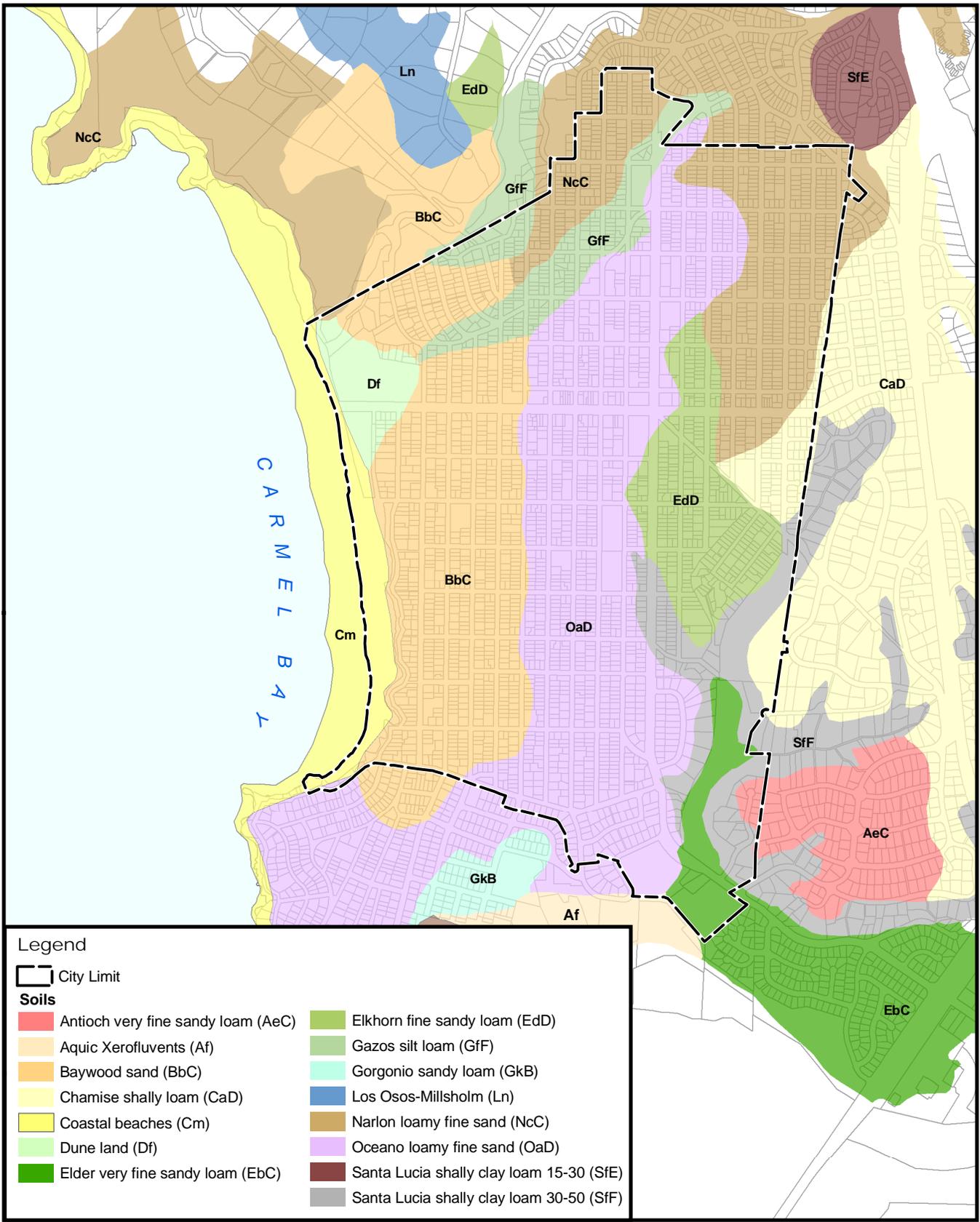


Source: California State Water Resources Control Board (2006)



CARMEL-BY-THE-SEA GENERAL PLAN UPDATE
Carmel Bay Area of Special Biological Significance

Figure 7.3



Source: City Carmel-by-the-Sea (2003)



CARMEL-BY-THE-SEA GENERAL PLAN UPDATE
Carmel-by-the-Sea & Vicinity Soils

Figure 7.4

5/11/09 JN 70-100077



ENVIRONMENTAL SAFETY ELEMENT



Introduction and Purpose

The Environmental Safety Element focuses on reducing human injury, loss of life, property damage, and the economic and social dislocation caused by natural and human-made hazards. The policies included in this element are intended to provide a framework to address natural and human induced hazards through prevention and emergency response. This element seeks to guide the continuous development of preventative measures that address existing and potential hazards, while also providing contingent emergency response procedures in the instance of a local or regional emergency.

Issues of Local Significance

The following issues were identified as relevant to the City of Carmel-by-the-Sea and are addressed in the Goals, Objectives, and Policies and Supporting Information sections.

- Earthquakes
- Landslides
- Drainage/Flooding
- Fire
- Tsunami
- Disaster Preparedness

This element also includes some of the findings gathered through the Community Survey (Survey). The Survey was prepared as part of the public outreach process to gain a broader response from the community, property owners, and businesses on issues facing Carmel. The complete Survey report can be found in Appendix A.



Goals, Objectives and Policies

Note to reader:

Based on a review of the existing goals and policies and subsequent discussions with City staff, it was determined that this section would benefit from a complete reorganization and streamlining to be more succinct, remove redundancies, and make it easier for City staff and decision makers to interpret and implement. As such, the intent of the previous goals and policies were retained addressing all significant issues (as identified above), but re-written in its entirety.

G8-1 Ensure there is adequate preparedness to respond to a disaster.

O8-1 Ensure emergency preparedness.

- P8-1** Periodically update and test the effectiveness of the City's Emergency Operations Plan.
- P8-2** Provide on-going training to City staff in emergency preparedness and procedures.
- P8-3** Cooperate with other local agencies to ensure the availability and adequacy of emergency supplies.
- P8-4** Ensure preparation for delivery of a reliable and safe potable water supply in an emergency.
- P8-5** Identify and evaluate all emergency use facilities and their capacity to survive the intensity of a disaster.
- P8-6** Designate alternative facilities for post disaster assistance in the event that primary facilities are not available for use.
- P8-7** Ensure that water, gas, and sewage utilities serving critical facilities are in good condition and are engineered to withstand damage from disasters.
- P8-8** Cooperate with local and regional jurisdictions to ensure adequate communication capabilities during a disaster.
- P8-9** Coordinate emergency planning efforts with the Monterey County Office of Emergency Services.



O8-2 Respond to emergencies rapidly.

P8-10 Work with police and fire departments to periodically review data on calls for service, response times, and changing risk probabilities and report critical issues/trends to the City Manager as deemed necessary.

P8-11 Maintain the list of residents who require special assistance during emergencies.

P8-12 Maintain primary and secondary evacuation routes for the City of Carmel-by-the-Sea and its Sphere of Influence, in coordination with Monterey County Office of Emergency Services and the City's EOP.

O8-3 Provide public education about what to do in case of emergencies and means available to avoid or minimize their effects.

P8-13 Educate the public regarding seismic, geologic, flood, fire, tsunami, and other potential disasters, by preparing periodic news articles for local media outlets, such as Carmel Pine Cone.

P8-14 Publicize the system of emergency and evacuation routes serving the City.

P8-15 Encourage property owners to retrofit older structures with fire detection and/or warning systems.

G8-2 Provide protection from natural hazards.

O8-4 Prevent or reduce the potential for life loss, injury, and property damage from fire hazards.

P8-16 Avoid and discourage locating public structures and utilities in high severity fire hazard zone.

P8-17 Ensure adequate water supply for fire emergencies.

P8-18 Encourage new development located in or adjacent to fire hazard areas to incorporate fire preventative site design, access, landscaping and building materials, and other fire suppression techniques.

P8-19 Control excessive buildup of flammable vegetative material on vacant lots and within and adjacent to fire hazard areas, especially following wet springs.



- P8-20** Develop and provide funding and/or incentives for removal of flammable vegetative material (e.g., free chipping day, free collection day for tree limbs).
- O8-5** Prevent or reduce loss of life, injury, and property damage from geologic and seismic disasters.
- P8-21** Consider lands within one eighth mile of faults shown on Figure 8.1 as a fault zone characterized by potential seismic hazards.
- P8-22** Require dynamic ground motion analysis and responsive structural design for all new high occupancy structures (e.g. multi-family residential, hotels, etc.) and structures whose continued functioning is critical after a disaster.
- P8-23** Require adequate geotechnical investigations to be undertaken to provide necessary information and mitigation for any development locating substantial structures in areas subject to seismic hazards, ground failure, erosion, or landsliding.
- P8-24** Avoid placement of critical facilities and high occupancy structures (e.g. multi-family residential, hotels, etc.) in areas subject to ground failure during an earthquake.
- P8-25** Develop an unreinforced masonry grant program that helps correct earthquake-risk nonmasonry building problems, including chimney bracing and anchoring water heaters.
- O8-6** Prevent or reduce the potential for life loss, injury, and property damage from inundation due to flood or tsunami.
- P8-26** Require site planning and building design to address identified flood and tsunami inundation areas.
- P8-27** Encourage design features that address the tsunami splash effect on the structures located immediately adjacent to the tsunami inundation zone (e.g. Scenic Road), as illustrated on Figure 8.5.
- P8-28** Limit the amount of impervious surface in flood-prone areas.
- P8-29** Reduce flooding hazards in areas with flooding potential by improving drainage and minimizing the alteration of natural drainage and natural protective barriers that accommodate or channel floodwaters.



P8-30 Prepare an adequate warning and evacuation plan for development and recreational uses that exist along the shoreline and other tsunami inundation areas identified on Figure 8.5.

G8-3 Reduce potential impacts from hazardous materials.

O8-7 Minimize the generation of hazardous waste within the City and ensure that hazardous waste is transported and disposed of in a proper manner.

P8-31 Support implementation of the Monterey County Hazardous Waste Management Plan.

P8-32 Periodically review the City's EOP for effectiveness in emergency response to hazardous waste spills.

P8-33 Require a conditional use permit for all commercial uses that generate hazardous waste.

P8-34 Require that all public buildings and associated landscaping use non-toxic materials as part of their maintenance, whenever possible.

P8-35 Work with the Monterey County Health Services – Environmental Health Division and other agencies to establish an educational outreach program for businesses and residents regarding the safe use, recycling, and disposal of toxic materials; reducing the use of hazardous household wastes; and acceptable substitutes for toxic substances.

P8-36 Investigate programs for pickup of household hazardous waste and identify possible collection locations that will accept household waste.

O8-8 Ensure that resources are available to effectively respond to hazardous-waste emergencies.

P8-37 Provide on-going training to City staff to quickly respond to hazardous-waste emergencies.

P8-38 Develop a list of businesses permitted to handle hazardous materials and assure that safe handling and use information for materials handled by these businesses are provided to fire protection and other safety and emergency response agencies.



G8-4 Control land uses siting to avoid exposure to risk in excess of the level generally acceptable to the community.

- P8-39** Establish a program to evaluate existing structures and facilities to identify conditions that present excessive risk. Give priority to identification of critical and high occupancy facilities.
- P8-40** Review areas proposed for annexation with respect to the hazards identified in this Element and the effect on existing and future provision of emergency services.
- P8-41** Require structures for critical and high occupancy facilities to be located appropriate distances from active or potentially active fault traces shown on Figure 8.1, ground failure, erosion, coastal erosion, or landsliding unless mitigating measures are taken to limit damage to the levels of acceptable risk.



Supporting Information

Seismic Hazards

Historical Seismic Hazards

California is situated in a seismically active area that lies within the California Coast Ranges geomorphic and physiographic province. The region’s geology is dominated by active tectonics of the margin between the Pacific and North American tectonic plates. Regional tectonic forces generate an estimated relative motion between the North American and Pacific plates of approximately two inches per year.

The entire California Coast and Coast Range area is prone to earthquakes. Based on history, the probability of a moderate or high magnitude earthquake occurring in the greater Monterey region in the next few decades is quite likely. [Table 8.1: Major Historical Earthquakes in the Region](#), summarizes the year, epicenter, and magnitude of major historical quakes that have affected the Monterey County region since 1900.

Table 8.1: Major Historical Earthquakes in the Region

Year	Epicenter	Richter Magnitude at Epicenter
1901	Parkfield	6.4
1906	San Francisco	8.3
1922	Parkfield	6.3
1934	Parkfield	6.0
1966	Parkfield	6.6
1983	Coalinga	6.5
1984	Morgan Hill	6.1
1989	Loma Prieta	7.1
2003	San Simeon	6.5
2004	Parkfield	6.0

Source: Draft Program EIR Monterey County 2006 General Plan, 2006.

Regional and Local Faults

Faults that could present hazard to Carmel during an earthquake event include the following active or potentially active fault: San Andreas, San Gregorio-Palo Colorado, Chupines, Navy, and Cypress Point. The San Andreas and San Gregorio faults are two dominant faults within the Monterey County region that are considered active with evidence of historic or recent movement. [Figure 8.1: Regional and Local Faults of Significance](#), maps the location of faults that could present hazard to Carmel. Active and potentially active faults are mapped as lines rather than zones. It should be recognized that areas immediately adjacent to the mapped fault lines may include secondary or branch faults. Therefore, the active and potentially active fault lines shown



on the maps should be treated as zones of approximately an eighth of a mile on either side of the fault lines. This corresponds with the width of Special Studies Zones established pursuant to the Alquist-Priolo Act. The hazard potentials along the active and potentially active faults include a high potential for ground rupture and a moderate to severe ground shaking potential near the fault.

Landslides

Landslide is a general term for the dislodgment and fall of a mass of soil or rocks along a sloped surface or for the dislodged mass itself. The term is used for varying phenomena, including mudflows, mudslides, debris flows, rock falls, rockslides, debris avalanches, debris slides, and slump-earth flows. Landslides may result from a wide range of combinations of natural rock, soil, or artificial fill. The susceptibility of hillside and mountainous areas to landslides depends on variations in geology, topography, vegetation, and weather. Landslides may also occur due to indiscriminate development of sloping ground or the creation of cut-and-fill slopes in areas of unstable or inadequately stable geologic conditions (Monterey County 2007).

Landslides often occur together with other natural hazards, thereby exacerbating conditions, as described below.

- Shaking due to earthquakes can trigger events ranging from rock falls and topples to massive slides.
- Intense or prolonged precipitation that causes flooding can also saturate slopes and cause failures leading to landslides.
- Landslides into a reservoir can indirectly compromise dam safety, and a landslide can even affect the dam itself.
- Wildfires can remove vegetation from hillsides, significantly increasing runoff and landslide potential (Ibid.).

Landslides in Carmel area historically have been caused by waterlogged soil rather than ground shaking due to an earthquake. As shown on [Figure 8.2: Areas Prone to Landslide](#), there are two areas historically prone to landslides within the City limits. The first area is located in the north-central portion of the City, which encompasses the Pescadero Canyon, including portions of 2nd, 3rd, and 4th Avenues, and Camino Del Monte Avenue, between 2nd and 3rd Avenues. The second area prone to landslides is located in the eastern portion of the City and encompasses the eastern portion of the Mission Trail Nature Preserve.

Flood Hazards

Flooding is the accumulation of water where usually none occurs or the overflow of excess water from a stream, river, lake, reservoir, or coastal body of water onto adjacent floodplains. Floodplains are lowlands adjacent to water bodies that are subject to recurring floods. Floods are



natural events that are considered hazards only when people and property are affected (Monterey County 2007).

Physical damage from floods includes the following:

- Inundation of structures, causing water damage to structural elements and contents.
- Erosion or scouring of stream banks, roadway embankments, foundations, footings for bridge piers, and other features.
- Impact damage to structures, roads, bridges, culverts, and other features from high-velocity flow and from debris carried by floodwaters.
- Destruction of crops, erosion of topsoil, and deposition of debris and sediment on croplands.
- Release of sewage and hazardous or toxic materials as wastewater treatment plants are inundated, storage tanks are damaged, and pipelines are severed.

Floods also result in economic losses through closure of businesses and government facilities, disrupt communications, disrupt the provision of utilities such as water and sewer service, result in excessive expenditures for emergency response, and generally disrupt the normal function of a community. In Monterey County two types of flooding occur: riverine flooding, also known as overbank flooding, due to excessive rainfall, and coastal flooding due to wave run-up (Monterey County 2007).

Carmel is located on a sloping terrain that offers good storm water runoff into both the Pacific Ocean and the Carmel River. As shown on [Figure 8.3: Flood Hazard Zones and Localized Flooding Areas](#), only a small portion of the City's southern tip is designated as a FEMA 100-year Flood Zone. Mission Fields, a residential area, is within the 100-year floodplain, as are the Carmel Center/Carmel Rancho shopping centers.

Coastal Flooding

Coastal flooding in Monterey County is generally caused by wave run-up. Pacific Ocean storms in the months of November through February in conjunction with high tides and strong winds can cause significant wave run-up. In addition to intense offshore storms, coastal flooding from the Pacific Ocean can also be attributed to seismic sea-waves or tsunamis that can occur at any time of the year. As such, coastal flooding can be exacerbated by the physical characteristics of the continental shelf and shoreline.

The Carmel Beach is subject to flooding during high tide and beach sand is lost yearly during winter storms. The beach is a clearly separated from adjacent roads and houses by a moderately steep hill. As shown in [Figure 8.3: Flood Hazard Zones and Localized Flooding Areas](#), due to that topographical feature, the coastal flooding rarely extends past the beach.



Localized Flooding

Localized flooding may occur outside of recognized drainage channels or delineated floodplains due to a combination of locally heavy precipitation, increased surface runoff, and inadequate facilities for drainage and stormwater conveyance. Such events frequently occur in flat areas and in urbanized areas with large impermeable surfaces. Local drainage may result in “nuisance flooding,” in which streets or parking lots are temporarily closed and minor property damage occurs (Monterey County 2007).

There are several areas of the City, which have been identified as being prone to localized flooding. The main area subject to localized flooding is located within the Mission Trail Nature Preserve (see [Figure 8.3: Flood Hazard Zones and Localized Flooding Areas](#)). The Mission Trail site is owned by the City and used as a park. This use mitigates some of the damage that would normally result from the retention of water on the site.

[Figure 8.3: Flood Hazard Zones and Localized Flooding Areas](#) also shows areas that are prone to periodic flooding during heavy rain events. These areas experience flooding when the City’s drainage system is overwhelmed by the amount of the rain water. Historically, the City’s stormwater system has had sufficient capacity to accommodate a rainfall of up to two inches a week. However, several factors, such as an increased amount of debris and reduced ability for maintenance affect stormwater system capacity. The stormwater systems are maintained regularly, however, during storm events the maintenance often can’t keep up with the amount of debris entering the system. As a result, the system experiences serious failures during rainfall of approximately 10 inches in a week.

Erosion and Landslides

Erosion is a natural process caused by wind, water, and gravitational forces. This process generally creates two problems: the wear and removal of soil from one site and its deposit in another. The removal of soil can be damaging through gully erosion, wind blown erosion, the erosion of stream courses and banks, and the erosion of coastal dunes and beach area. Soil deposit damage affects flood plains, rivers, lakes, reservoirs and may clog drainage structures. Development activities frequently accelerate erosion related damages and losses.

Climate is another major contributor to potentially high erosion rates. This is due to a number of factors:

- Geologic studies indicate that erosion is highest in areas where annual precipitation is between 7" and 18". Annual precipitation on the Monterey Peninsula ranges from 12.7" on the coast to 17.7" at the higher elevations.
- Most of Carmel's rainfall occurs during the winter when temperatures are too low for rapid vegetative growth.



Erosion on sloped inland areas and at the shoreline (beach) has been a problem for much of Monterey County, including Carmel. A discussion of Carmel beach erosion is included in the Open Space/ Conservation/Scenic Highway Element. The hazards due to erosion are difficult to separate from those due to flooding and landsliding. In some cases, erosion is a result of flood and landslide conditions; in others, rapid water runoff and landsliding can occur in areas subject to prolonged erosion.

The preventive costs of erosion are generally included within flood control measures and the overall costs of hillside development. Adoption of the present state of the art procedures for erosion prevention in hillside areas will, in most cases, eliminate losses.

Losses due to coastal erosion can be reduced most economically by avoiding construction in areas subject to severe erosion. Erosion of the beach bluffs is addressed in the City's Master Beach Management and Emergency Action Plans.

Fire Hazards

Fire poses a significant threat to life and property. Fire prevention and safety measures must be evaluated in all land use and community wide decisions. Fire hazards in the Carmel planning area can be categorized by fires within urbanized areas, and fires within undeveloped areas or wildland fire areas.

Factors to Fire Susceptibility

There are several factors affecting the hazard potential of a wildland fire hazards in the Carmel's area: topography, weather conditions, and fire fuel (type of vegetative cover, type and intensity of land use).

The City of Carmel is located on a hillside. Steep slopes promote spreading of a fire and increase its speed due to preheating of vegetation. Canyons and hillsides also promote gusts of wind, which increase the unpredictable and uncontrollable nature of wildfires.

Carmel's topography also creates access issues. The unimproved and narrow roads are an obstacle to fighting fires. Fire fighting personnel as well as fire trucks and other heavy equipment have difficulty reaching some of the City's areas. Containment being a key objective, areas of limited accessibility have a correspondingly greater potential for fire spreading.

Weather is also a contributing factor to fire hazards. The central coast climate is characterized by dry summers with virtually no precipitation. As a result the vegetation during the fire prone summer/fall season is very dry, creating ideal conditions for faster fire spreading. A combination of a generous rainy season followed by a dry summer, results in large amounts of vegetation fire fuel. Wind direction and strength rival human proximity and vegetation as significant factors affecting fire hazard. The City experiences prevailing winds from the beach, which can potentially result in the spreading of a fire towards the City.



The most significant factor determining overall fire risk is human proximity. The majority of wildland fires are caused by people and the remaining fires are started primarily by lightning. New land development may suddenly cause drastic increases in the frequency of fires in areas that have had few fires in the past. The increase in activity of off road vehicles, such as motorcycles and mini-bikes, is becoming an ever-increasing source of brush fires as the trend continues toward more recreational pursuits.

Another contributing factor to wildlife fire potential is accidents related to spark discharges from transmission lines or leakage from pipelines carrying flammables in and adjacent to brush areas.

Wildland Fires

Carmel's land area is largely forested and contains a significant amount of open space. The City itself is considered developed and would not qualify as a wildland fire hazard area. There are several areas adjacent to the city limits in the City's sphere of influence that could be considered a wildland area. These areas are located to the north and east of the City boundaries and include: to the north, Pescadero Canyon, Forest Hill Park, and Del Monte Forest; and to east the Mission Trails Nature Preserve.

State Regulatory Context

Most land within the State of California has been designated as either a State Responsibility Area (SRA) or Local Responsibility Area (LRA). These designations refer to the agency or entity responsible for providing fire protection services, from either the local entity or the State's Department of Forestry and Fire Protection (CalFire). In a LRA, the local agency, which is typically a city, county, or district, is responsible for fire protection. In a SRA, the State bears the financial responsibility for preventing and suppressing wildland and forest fires.

Land designated by the State as a SRA is subdivided into three categories of Fire Hazard Severity Zones (FHSZs), either Moderate, High or Very High, based on the fire hazard level present. Moderate and High zones are currently treated identically in the State's codes and regulations.⁴ Very High zones are more stringently regulated and additional constraints on construction materials and other safety-related restrictions are applicable.⁵

Within land that has been designated as a LRA, CalFire may recommend that the local entity further designate land subject to a very high fire hazard as a Local Agency Very High FHSZ.⁶ In such zones, the more stringent codes designed for SRA Very High FHSZs will apply.

⁴ Pub. Resources Code §§ 4125; 4291, *et seq.*

⁵ *See* Building Code Chapter 7B.

⁶ Govt. Code § 51175, *et seq.*



State Fire Code

Recently, the California Building Standards Commission in collaboration with CalFire adopted new building codes that apply in all land designated as a SRA. These new codes, reduce the risk of burning embers pushed by wind-blown wildfires from igniting buildings through increased setbacks and vegetation clearance requirements. Roofing standards vary by the fire hazard zone rating of the site. The new building codes require siding, exterior doors, decking, windows, eaves wall vents, and enclosed overhanging decks to meet new test standards. These new codes apply throughout all SRAs regardless of the fire hazard severity ranking.⁷ A summary of these codes are provided below.

Chapter 7A Building Code §§ 701A-704A.5, Wildland-Urban Interface Building Standards: Materials and Construction Methods for Exterior Wildfire Exposure

Chapter 7A applies to building materials, systems, and assemblies used in the exterior design and construction of new buildings located within a wildland-urban interface fire area and in SRAs. Projects that apply for building permits after January 1, 2008 must comply with roofing, attic ventilation, exterior wall, decking, floor and underfloor protection, and inspection and certification requirements.

2007 California Fire Code, Chapter 47, Requirements for Wildland-Urban Interface Fire Areas, §§ 4701 – 4713

This Chapter includes roofing and attic ventilation requirements for construction within wildland-urban interface fire areas and in SRAs of any level of fire hazard severity zone and applies to building materials, systems, or assemblies used in the exterior design and construction of new buildings. While standards have only been set for roofing and attic ventilation, standards for exterior walls, decking, floors, and underfloor protection and ancillary buildings and structures may be promulgated in the future (these sections are currently "reserved" in the code).

Public Resources Code §§ 4202, 4291-4299

Revisions to these code sections (Senate Bill 1595, Kehoe, approved September 27, 2008) went into effect on January 1, 2009. Senate Bill 1595 amends §§ 4202 and 4291. The amendments to § 4202 change the designation process for SRA lands and the new § 4291 requires a 100-foot fire break around structures in lands within a SRA (or within a wildland-urban interface fire area) that are covered with flammable materials such as brush, trees, and grasslands. The section provides details regarding allowable vegetation within the fire break and structure maintenance requirements concerning flammable vegetative materials. It also includes details regarding rebuilding in an area previously damaged by fire. The section permits the State fire official to require construction of a larger fire break, up to 300 feet, around sensitive structures.

Sections 4292 through 4296 oblige owners or operators of electrical transmission lines through brush-covered areas to observe special maintenance protocols to reduce hazards from wildfire.

⁷ Building Code Chapter 7A, § 701A.3.2; Fire Code Chapter 47.



The local utility provider would be responsible for compliance with transmission line fire break precautions.

California Code of Regulations, Title 14 §§ 1270-1299—CalFire SRA Fire Safe Regulations

These regulations set out basic wildland fire protection standards for building, construction, and development within SRAs. These regulations are silent regarding whether they are equally applicable within Wildland-Urban Interface Fire Areas. Measures include specifications for emergency access and road design, signage and building numbering, private water supply reserves for emergency fire use and vegetation modification. These regulations do not apply to existing structures, roads, streets, and private lanes or facilities.

Local jurisdictions approving construction within an SRA must provide the Director of Forestry and Fire Protection with notice of applications for building permits, tentative parcel maps, tentative maps, and use permits for construction or development within an SRA. The local jurisdiction must also ensure that applicable sections of the CalFire SRA Fire Safe Regulations become a condition of approval of any applicable construction or development permit or map.

Local Fire Hazard Severity Zones

Wildland fire protection in California is the responsibility of either the State, local government, or the federal government. Local responsibility areas include incorporated cities, cultivated agriculture lands, and portions of the desert. Local responsibility area fire protection is typically provided by city fire departments, fire protection districts, counties, and by Cal Fire under contract to local government.

California law requires Cal Fire to identify areas based on the severity of fire hazard that is expected to prevail there. These areas, or “zones,” are based on factors such as fuel (material that can burn), slope and fire weather. There are three zones, based on increasing fire hazard: medium, high and very high. To determine Local Responsibility Areas (LRAs), Cal Fire used an extension of the state responsibility area Fire Hazard Severity Zone model as the basis for evaluating fire hazard in an LRA. The local responsibility area hazard rating reflects flame and ember intrusion from adjacent wildlands and from flammable vegetation in the urban area.

California Department of Forestry and Fire Protection Fire Hazard Severity Zone Local Responsibility Areas (LRA) map for Carmel-by-the-Sea, identifies a large area encompassing northern and eastern portions of the City as a Very High fire hazard severity zone (see [Figure 8.4: State and Local Responsibility Area Fire Hazard Severity Zones](#)).

Local Responsibility Area Very High Fire Hazard Severity Zone maps are used to identify areas where ignition resistant building standards will be required for new construction, to identify properties requiring defensible space maintenance, and by sellers to disclose natural hazards at the time of property sale.



Urbanized Forest Fires

Carmel-by-the-Sea is often referred to as a village in the forest, due to its extensive urban forest. While this forest is a major community asset, it also poses a potential significant fuel source for a fire within the community. Fires can be a threat within built up areas of a community; there is the ever-present danger of rapidly spreading fire. The high density of structures within the Carmel residential areas and business district among numerous trees increase the fire hazard. Many buildings in the Commercial District are very closely located with a lot of the buildings having common walls.

Most construction within Carmel contains wood; most roofs are made of combustible materials, while some made of tile. While installation of fire sprinkler systems is required with substantial remodel, the older structures in both the commercial and residential districts do not have this fire fighting system in place.

A quick spreading fire along the Ocean Avenue commercial core is a possibility. The requirement for a sprinkler system in buildings of over 4,000 square feet has reduced the potential for rapidly spreading fires in commercial structures. The requirement that buildings not exceed two stories in height also helps to relieve hazards.

Fires in homes can result from a number of causes, though primarily through human carelessness. Other causes include faulty heating systems and substandard electrical wiring. In addition, high-density development, small setbacks and narrow roads limit the effectiveness of fire fighting efforts.

Fire Department

The City of Carmel-by-the-Sea Fire Department (Department) has one fire station with six full-time and 15 part-time fire fighters. The Department is also in the process of hiring additional three full-time and seven part-time fire fighters. The Department's equipment consists of two type one engines and one rescue unit.

The Department's response time goal is eight minutes. The actual response times for the Department are four minutes or less. Carmel-by-the-Sea is also part of a regional coordination effort with other Monterey County cities, including Pacific Grove and Monterey. These neighboring agencies provide aid to each other on as needed basis.

Historic Fire Causes

Historically, the main causes of fire in Carmel have been caused by human element. Most of the fire related incidents are of small nature. Of the 960 incidents that the Carmel Fire Department responded to in 2008, there were eight structure fires, four trash fires, four vehicle fires, and three chimney fires. [Table 8.2: Carmel Fire Department Incident Report: 2008](#), summarizes the main types of events that the Department responded to during year 2008, including fire related events.



Table 8.2: Carmel Fire Department Incident Report: 2008

Type of Incident	Number of Incidents	Percent of Total Incidents ¹
Top 10 Incident Types		
1. Medical Emergency	361	37.60%
2. Mutual Aid ²	195	20.31%
3. Alarm Activation	86	8.96%
4. Public Service	78	8.13%
5. Water Problem	48	5.00%
6. Hazardous Condition	47	4.90%
7. Smoke or Odor Investigation/ Explosion	32	3.33%
8. Wires Down	25	2.60%
9. Vehicle Accident	17	1.77%
10. Natural Gas Leak	10	1.04%
Fire-Related Incidents		
Structure Fire	8	0.83%
Trash Fire	4	0.42%
Vehicle Fire	4	0.42%
Chimney Fire	3	0.31%
Notes:		
¹ The Carmel Fire Department recorded 960 incidents for the period of January 1, 2008 and December 31, 2008.		
² The Carmel Fire Department has Mutual Aid agreements with all adjoining jurisdictions (City of Monterey, Pebble Beach, and City of Pacific Grove). This line number represents all activities (including medical) that the Department undertook based on the Mutual Aid Agreement.		
Source: Carmel-by-the-Sea Fire Department, March 2009.		

Firefighting-Related Water Supply

The City of Carmel Fire Department requires a fire flow of 1,500 to 2,000 gallons per minute (gpm) for a time limit of two to four hours. The water system can currently meet this demand. One of the challenges that Carmel faced was related to a large number of failed hydrants. At the beginning of 2007, the City in cooperation with California American water (Cal-Am) identified 29 of 201 hydrants within the City limits that were found inadequate for fire protection (Cal-Am 2009).

Cal-Am took several actions to address these inadequacies. In several areas of the City experiencing low flow rates, Cal-Am replaced four inch flow mains with eight inch flow mains. These larger underground mains are capable of delivering more water under higher pressure. In addition, Cal-Am reviewed the fire hydrant network to remove redundancies, address hydrants which experienced low flow, and assure adequate number and distribution of fire hydrants



throughout the City. In total, 23 hydrants were removed, eight hydrants experiencing low flows were replaced and connected to the new eight inch flow mains, and 15 new hydrants were installed. During this process, the remaining 172 operational hydrants were fully capable of supporting fire fighters throughout the City (Cal-Am 2009).

Fire Safety Proactive Measures

There are several measures that the City is undertaking in order to minimize the chance and/or spreading of a fire. The FPB department has an active pruning and removal of trees program that addresses safety concerns related to fire hazards and falling trees. Trees are evaluated during yearly tree surveys, city drives, and reports from the City staff and the public. Once a tree is deemed a safety concern, it is pruned or removed completely. Preventative pruning minimizes damage from trees during storm events. The FPB also responds to reports of rocking trees during storms, and intercepts when possible. The Public Works department assists the FPB department with heavy equipment and staff. As part of the management for forest viability, the FPB department also controls forest disease (such as pitch canker) and implements pruning for structure, strength, and healthy canopy as well as removal of dead trees. These measures successfully remove excessive fire fuel.

Sprinklers Requirements

Many of the buildings within the City are older in addition to being closely located. The age of the structure often means that a fire prevention system, such as sprinklers was not installed. The commercial district contains many older structures, which also share common walls.

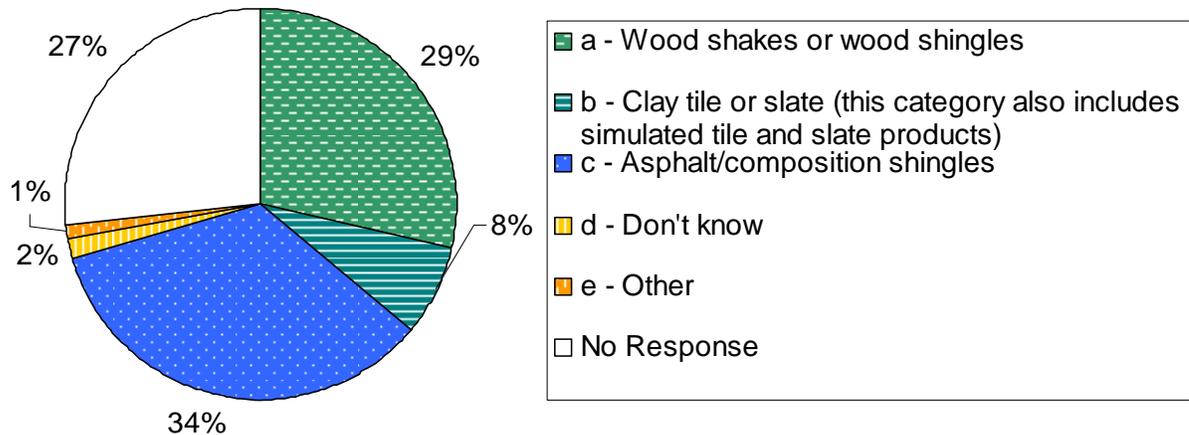
In an on-going process of remodeling and rebuilding of older structures, the renovations which pass a statutory threshold are required to include fire systems in their remodel. Of the approximately 250 commercial buildings in Carmel, over a half are equipped with fire alarm systems, and approximately 20 percent have automatic fire sprinkler systems. Fire alarm systems in Carmel are required to be Central Station Service fire system, which are the most reliable systems referenced in the National Fire Alarm Code. These systems can monitor inputs from smoke detectors, heat detectors, manual fire alarm boxes, and fire sprinkler water flow switches.

Roof Requirements

The Survey revealed that most respondents have wood shakes/shingles or asphalt/composition shingles as their roof material. Twenty nine percent of respondents reported as having wood shakes or wood shingles and 34 percent reported asphalt/composition shingles as their roof material. Eight percent reported clay tile or slate (see [Graph 8.1: Roofing Materials](#)). In the “Other” category, the most often listed response was tar and gravel.



Graph 8.1: Roofing Materials in Carmel



The City’s Municipal Code Section 15.08.120 – Roofing Materials, requires that any new roof covering, or in the event of re-roofing of 25 percent or more of any existing roof, has to be made of fire-retardant material that meets or exceeds Class A. Class A is the highest fire-resistance rating for roofing and indicates roofing that is able to withstand severe exposure to fire originating from sources outside the building.

Tsunami

Tsunamis, also known as seismic sea waves, are a series of enormous waves created by an underwater disturbance such as an earthquake, landslide, volcanic eruption, or meteorite, with earthquakes being the most common cause. A tsunami spreads in all directions from its origin with speeds up to hundreds of miles per hour in the open ocean. As a wave approaches the shore, it builds in height and could become as high as 100 feet or more (FEMA 2006).

A single tsunami event may involve a series of waves, known as a train, of varying heights. In open water, tsunamis have extremely long periods of time (from minutes to hours) for the next wave top to pass a point after the previous one. Additionally, a tsunami wavelength can extend up to several hundred miles, very different from typical wind-generated swells on the ocean, which might have a period of about 10 seconds and a wavelength of 300 feet (Monterey County 2007).

The actual height of a tsunami wave in open water is generally only 1 to 3 feet and is often practically unnoticeable to people on ships. The energy of a tsunami passes through the entire water column to the seabed, unlike surface waves, which typically reach only down to a depth of 30 feet or so. The tsunami wave travels across the ocean at speeds up to 700 miles per hour (mph). As the wave approaches land, the sea shallows and the wave no longer travels as quickly, so the wave begins to “pile up” as the wave-front becomes steeper and taller, and less distance occurs between crests. Therefore, the wave can increase to a height of 90 feet or more as it



approaches the coastline and compresses. This steepening process is often compared to the sound of a cracking whip (Monterey County 2007). The height of a wave depends on the topography of the coastline, resulting in different hazard level of closely located beaches with different topography. Areas at greatest risk are less than 25 feet above sea level and within a mile of the shoreline (FEMA 2006).

Hazards associated with tsunamis include: life loss, property damage, flooding, contamination of drinking water, and fires from gas lines or ruptured tanks (FEMA 2006).

Regional Setting

A tsunami not only affects beaches that are open to the ocean, but also bay mouths, tidal flats, and the shores of large coastal rivers. Tsunami waves can also diffract around land masses. And since tsunamis are not symmetrical, the waves may be much stronger in one direction than another, depending on the nature of the source and the surrounding geography. However, tsunamis do propagate outward from their source, so coasts in the shadow of affected land masses are usually fairly safe.

As shown in [Table 8.3: Historic Monterey County Tsunami Events: 1806-2006](#), over the last 200 years, eight observed tsunamis generated waves in Monterey County. Almost all of the tsunamis were produced by earthquakes and resulted in wave run-ups of 1 meter or less. A tsunami in 1960 produced severe currents in Monterey, Moss Landing, and Pacific Grove and is blamed for one death.

Table 8.3: Historic Monterey County Tsunami Events: 1806-2006

Date	Origin	Cause	Location of Effects	Wave Run-Up (Meters)
03/03/1901	N. California	Landslide	Monterey	Observed
04/01/1946	E. Aleutian Islands	Earthquake, Landslide	Monterey, Pacific Grove	Observed – 2.6 m
03/09/1957	Central Aleutian Islands	Earthquake	Monterey	0.6 m
05/22/1960	S. Central Chile	Earthquake	Monterey, Moss Landing, Pacific Grove	0.8 – 1.1 m
03/28/1964	Gulf of Alaska	Earthquake	Monterey, Moss Landing, Pacific Grove	Observed – 1.4 m
10/18/1989	N. California	Earthquake	Monterey, Moss Landing	0.4 – 1.0 m
04/25/1992	N. California	Earthquake	Monterey	<0.1 m
06/22/2001	Southern Peru	Earthquake	Monterey	0.15 m

Source: Multi-Jurisdictional Hazards Mitigation Plan, Monterey County 2007.



Tsunami Warning Systems

The West Coast/Alaska Tsunami Warning Center (WCATWC) issues warnings for the North America West Coast, including Monterey County. A tsunami warning is issued when a potential tsunami with significant widespread inundation is imminent or expected. To provide the earliest possible alert, initial warnings are based only on seismic information (Monterey County 2008).

When a warning has to be issued, the WCATWC notifies the California State Warning Center in Sacramento, which in turn notifies all coastal county Public Safety Answering Points. The WCATWC also notifies the National Weather Service (NWS) and federal defense interests. The NWS activates the Emergency Alert System (EAS), which is the method TV and radio media use to warn the public. These warnings produce an alert tone, then an audio message, or come across TV screens as a text scrolling across the screen (Monterey County 2008).

The Monterey County Emergency Communications Center is responsible for notifying local agencies, including all law and fire agencies, the office of Emergency Service, and the Emergency Medical Service Agency of any warnings issued by the WCATWC (Monterey County 2008).

Local Tsunami Hazards

As shown in [Figure 8.5: Tsunami Hazard Areas](#), the City of Carmel would be minimally affected by moderate to extreme tsunami event. According to the Multi-Jurisdictional Hazards Mitigation Plan, under a scenario of a 21-foot run-up, only nine people, seven residential buildings, and two non-residential buildings are located within this hazards area along the southern portion of the City.

This can be accredited to coastal topography along Carmel's western boundary. The steep cliff, or a step-down in elevation between the Scenic Road and the beach, acts as a protective boundary during a tsunami event.

The relatively flat topography in southern portion of the City and immediately adjacent to the City, on the other hand, lends itself to a more significant wave run-up. The most significantly affected is comparable to the area affected by the floods.

Tsunami Evacuation Areas

As discussed above, tsunami vulnerability in the City of Carmel is limited to its beachfront area and the southeastern most portion of town that is near the Mission Fields / Carmel River Lagoon area. If an evacuation is ordered, there are two areas that may need to be evacuated. The first is the Carmel Beach and the approximately 100 oceanfront homes along Scenic Rd. Although the oceanfront homes are above the tsunami evacuation zone, the homes could experience a "splash effect" should a tsunami strike the coast (Monterey County 2008).

The second area is near the Carmel Mission. This area would need to be evacuated in the event of a tsunami greater than five meters (17 feet). However, it is an area that may be populated by



many visitors and nearby schoolchildren. Junipero Serra School / Carmel Mission is located just outside the evacuation zone, but may need to be evacuated out of precaution (Monterey County 2008).

Carmel Police Department would be the lead agency in any evacuation. Evacuation will include clearing the beach of all people, to include swimmers and surfers. For evacuating the homes along Scenic Rd., notification by either door-to-door contact or police cruiser public address systems will be used to notify those in the evacuation zone (Monterey County 2008).

Although the tsunami vulnerability in Carmel is limited, that areas immediately south of the city limits have a much higher chance of being inundated. It is important that these areas be avoided during a tsunami warning. The Carmel River Lagoon and the Crossroads Shopping Center / Post Office are some of the areas that should be avoided (Monterey County 2008).

Hazardous Waste

A material is considered hazardous if it has been designated as such by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. The California Code of Regulations defines a hazardous material as a substance that, because of physical or chemical properties, its quantity, concentration, or other characteristics, may either (1) cause an increase in mortality or an increase in serious, irreversible, or incapacitating illness; or (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed (22 CCR §66260.10 and California Health and Safety Code [HSC] §25501). Based on this definition, “hazardous materials” include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment (22 CCR §66260.10).

Chemical residuals in soil that are the result of the normal application of fertilizer, plant growth regulants, and pesticides for agricultural purposes do not constitute a release of hazardous substances under the California Hazardous Substances Account Act (HSC §25321 (d)). Similarly, the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) exempts parties from liability for the application of federally-registered pesticides (42 USC §9607(i)).

Regulation of hazardous materials and hazardous wastes occurs at the federal, state, and local levels of government. On the federal level, many hazardous materials-related regulations are promulgated by the EPA. Additional regulations pertaining to work place standards and for transportation of hazardous materials are enforced by the United States Department of Labor Occupational Health and Safety Administration (OSHA) and the United States Department of Transportation (DOT).



On the state level, the California Environmental Protection Agency (CalEPA), Department of Toxic Substances Control (DTSC), and Regional Water Quality Control Board (RWQCB) are responsible for overseeing many remediation and monitoring activities performed for sites in California with hazardous materials. Carmel is located within the jurisdiction of the Central Coast RWQCB. Regulations pertaining to work place standards and for transportation of hazardous materials are enforced by the State of California Division of Occupational Safety and Health (Cal-OSHA).

A summary of selected federal and state laws, regulations, and implementing agencies regarding hazardous materials and hazardous wastes are presented in [Table 8.4: Summary of Selected Hazardous Materials Laws and Regulations](#).



Table 8.4: Summary of Selected Hazardous Materials Laws and Regulations

Law/Regulation	Citation	Description	Implementing Agency
Federal Laws and Regulations			
Resource Conservation and Recovery Act/Hazardous and Solid Waste Amendments			
Framework for the Hazardous Materials Regulatory Setting	40 CFR 239-299	Creates the framework for the proper management of hazardous and non-hazardous solid waste.	EPA
Identification and Listing of Hazardous Wastes	40 CFR 261.1 – 261.41	Defines criteria for identifying the characteristics of hazardous waste. Identifies and lists hazardous wastes. Lists hazardous waste exclusions and exemptions. Identifies responsibilities of generators, transporters, and disposers of hazardous wastes.	EPA
Emergency Planning, and Community Right-to-Know Act			
Emergency Planning and Notification; Hazardous Chemical Reporting; Community Right-to-Know, Toxic Chemical Reporting; Community Right-to-Know, Toxic Release Inventory	40 CFR 302, 350, 355, 370, 372, and 374	Requires facilities to document, notify, and report information pertaining to the storage, use, release, disposal, and transfer of hazardous chemicals at the facility. Requires facility to prepare or have available an MSDS for all hazardous chemicals used or stored at the facility in quantities exceeding the designated threshold limits. Requires states to establish a State Emergency Response Commission, which designates a Local Emergency Planning Committee to develop an emergency response plan.	OSHA
Toxic Substances Control Act			
Control of Toxic Substances	40 CFR 700-766	Regulates the use and disposal of various industrial chemicals (including PCBs).	EPA
Lead Exposure Reduction	40 CFR 745	Requires EPA to identify sources of lead contamination in the environment, regulate amounts of lead allowed in products, including paint and toys, and establish state programs to monitor and reduce lead exposures.	
Hazardous Material Transportation Act			
Hazardous Materials and Oil Transportation	49 CFR 100 – 185	Designates specific materials as hazardous for the purpose of transportation. Classifies each material and specifies requirements pertaining to packaging, labeling, and transportation.	DOT
Federal Water Pollution Control Act (Clean Water Act), as Amended			
Regulation of Pollutant Discharge	40 CFR 122 - 125 41 CFR 129 - 136	Employs a variety of regulatory and nonregulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff.	EPA
National Pollutant Discharge Elimination System	40 CRF 122	Regulates point and non-point sources that discharge pollutants into surface waters, including conventional pollutants (i.e., biological oxygen demand (BOD), suspended solids, pH) and priority pollutants (i.e., certain	EPA



Law/Regulation	Citation	Description	Implementing Agency
		chemicals).	
California Toxics Rule	40 CFR 131.38	Regulates point and non-point sources that discharge pollutants into surface waters, including conventional pollutants (i.e., BOD, suspended solids, pH) and priority pollutants (i.e., certain chemicals).	EPA
Clean Air Act, as Amended			
Regulation of Pollutant Discharge	40 CFR 50 – 99	Requires major stationary sources to install pollution control equipment, to meet specific emissions limitations, and to obtain operating permits. Sets forth NAAQS and national emission standards for hazardous air pollutants (NESHAPs)	EPA
Safe Drinking Water Act, as Amended			
Standards and Regulations for Drinking Water	40 CFR 141 - 149	Designed to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and groundwater wells. Includes specifications for drinking water treatment, source water protection, operator training, funding for water system improvements, and public information.	EPA
California Law and Regulations			
Hazardous Waste Control Act			
Division 20, Chapter 6.5	HSC 25100 – 25250.28 22 CCR 66250 – 69214	Authorizes the DTSC and local certified unified program agencies to regulate facilities that generate or treat hazardous waste. Sets forth standards applicable to generators and transporters of hazardous waste, standards for owners and operators of hazardous waste transfer, treatment, storage, and disposal facilities.	DTSC
Proposition 65 – Safe Drinking Water and Toxic Enforcement Act			
Division 20, Chapter 6.6	HSC 25249.5 – 25249.13	Requires the Governor to publish, at least annually, a list of chemicals known to the State to cause cancer or reproductive toxicity. Prohibits the discharge of such chemicals into sources of drinking water, and requires that warnings be given to individuals exposed to them.	OEHHA
Porter-Cologne Water Quality Control Act			
Water Quality Control Basin Plan (Basin Plan)	Central Coast Water Quality Control Basin Plan	Identifies beneficial water uses in the Central Coastal Basin. Sets forth water quality objectives for surface waters and groundwaters. Lists thresholds for organic and inorganic chemical constituents in groundwater. Sets forth discharge prohibitions.	RWQCB (Central Coast Region)
SWRCB Resolution No. 88–63	--	States that all surface and ground waters are considered a suitable, or potentially suitable, water supply, unless the waters contain TDS in excess of 3,000 mg/L, contain high	RWQCB (Central Coast)



Law/Regulation	Citation	Description	Implementing Agency
		levels of contamination or is not capable of producing 200 gal/day.	Region)
SWRCB Resolution No. 92-49	--	Establishes policies and procedures for investigation and remediating chemical releases that affect or threaten water quality.	RWQCB (Central Coast Region)
California Land Environmental Restoration and Reuse Act of 2001 (SB 32, 2001)			
California Human Health Screening Levels (CHHSLs)	Use of California Human Health Screening Levels in Evaluation of Contaminated Property (Cal EPA, 2005).	Screening values developed for 54 hazardous substances to evaluate soil and groundwater contamination for residential and commercial/industrial uses.	Cal EPA
California Safe Drinking Water Act			
California Laws and Regulations pertaining to Public Drinking Water Wells	22 CCR 60400 – 64710	Sets forth MCLs and other requirements for various compounds, including organic, inorganic chemicals, radionuclides, VOCs, and SVOCs in drinking water.	DHS
California Clean Air Act			
California Air Pollution Control Laws – Air Toxics	17 CCR 93000 – 93110	Resulted in development of state ambient air quality standards for particulate matter, sulfur dioxide, ozone, visibility reducing particles, nitrogen dioxide, lead, sulfates, hydrogen sulfide, carbon monoxide, and vinyl chloride. Specifies procedures for mitigating potential impact from naturally occurring asbestos and prohibiting asbestos in rock used for surfacing applications.	Cal EPA
Notes:			
<p>“BOD” = Biological Oxygen Demand “CAA” = Clean Air Act “CalEPA” = California Environmental Protection Agency “CCR” = California Code of Regulations “CFR” = Code of Federal Regulations “CHHSLs” = California Human Health Screening Levels “DHS” = California Department of Health Services “DOT” = Department of Transportation “DTSC” = California Department of Toxics Substances Control “EPA” = United States Environmental Protection Agency “gal/day” = gallons per day “HSC” = California Health and Safety Code “mg/L” = milligrams per liter</p>		<p>“MSDS” = Material Safety Data Sheet “NAAQS” = National Ambient Air Quality Standards “OEHHA” = Office of Environmental Health Hazard Assessment “OSHA” = United States Department of Labor, Occupational Safety and Health Administration “PCBs” = polychlorinated biphenyls “RCRA” = Resource Conservation and Recovery Act “RWRCB” = California Regional Water Resources Control Board “SB” = Senate Bill “SWRCB” = State Water Resources Control Board “TDS” = total dissolved solids “TSCA” = Toxic Substances Control Act</p>	



The City of Carmel-by-the-Sea has no facilities for permanent storage or transfer of hazardous waste. The City has no industrial zone or zoning district compatible with a hazardous waste site. The City is not in the vicinity of any pipeline, nor on the route of an airline transporting potentially hazardous materials. As such the most probable exposure would be due to transport of hazardous materials on state highways.

In Carmel-by-the-Sea hazardous waste is generated by households (paint products, motor oil, solvents, pesticides, oven cleaners and disinfectants) and small quantity commercial generators (dry cleaners, service stations, and photo processing).

Compared to County-wide waste generation, Carmel's community generates relatively little hazardous waste because of the small population and limited number of waste-generating commercial businesses. Future additional hazardous waste generation will primarily be from an increase in the number of households. Land use policies of the City limit the expansion of commercial uses, so that future additional commercial sources of waste will be limited.

Household generators must dispose of materials individually. Frequently, materials are improperly disposed of through the regular trash pickup or poured down the storm drains. Long-term storage on residential sites creates a health and safety hazard.

A portion of the City located east of Junipero Avenue is located within the one mile hazards corridor along Highway 1. Residents and structures located within this buffer would potentially be exposed to hazardous materials if there was an incident during transport of such materials on Highway 1.

In the event of hazardous material incidents in the City, the *Monterey County Hazardous Materials Incident Plan (2007)* would govern field operations and response. The City of Carmel-by-the-Sea is one of many jurisdictions within the Monterey County participating in this response plan.

The purpose of this plan is to establish specific emergency management policies and procedures for coordinating Monterey County's integrated response to hazardous materials incidents, in accordance with California Code of Regulations as it relates to the implementation of the requirements of the California Health and Safety Code. The Plan establishes procedures for response to hazardous material incidents, clean up and cost recovery as well as other post-incident operations, and preparedness and training (Monterey County 2007b).

Disaster Preparedness

Regional Emergency Preparedness

The City of Carmel-by-the-Sea has adopted by resolution the *Multi-Jurisdictional Hazard Mitigation Plan, Monterey County, CA (2007)*. The plan profiles hazards, assesses risks and capabilities, as well as develops mitigation strategy for various hazards in the Monterey County and local communities, including Carmel. Hazards addressed in this plan include:



- Coastal erosion;
- Dam failure;
- Earthquake;
- Flood;
- Hazardous materials events;
- Landslide;
- Tsunami;
- Wildland fire; and
- Windstorm.

The plan discusses these hazards in the context of the entire Monterey County as well as jurisdictions within the County. In addition to Carmel-by-the-Sea, the plan also includes discussion of hazards for the cities of Del Rey Oaks, Gonzales, Greenfield, King City, Marina, Monterey, Pacific Grove, Salinas, and Sand City. Each of the jurisdictions has adopted the plan by a local jurisdiction (Monterey County 2007).

The mitigation strategy included within the plan provides a blueprint for reducing the potential life and property losses identified in the risk assessment of each of the hazards. For the countywide mitigation strategy, the plan provides a list of mitigation goals and actions based upon the findings of the vulnerability analysis. Such measures include preventive actions, property protection techniques, natural resource protection strategies, structural projects, emergency services, and public information and awareness activities (Monterey County 2007).

Community-specific mitigation strategies, including capability assessments, are provided for each of the participating jurisdictions. Where appropriate, mitigations described in the plan related to hazards within the City of Carmel-by-the-Sea were incorporated into the Goals, Objectives, and Policies section of this element.

Local Emergency Preparedness

Carmel's Emergency Operation Plan (CEOP) 2008, incorporates the policies and principles of the National Incident Management System (NIMS) and the Standardized Emergency Management System (SEMS), which were originally developed and employed by the State of California. The purpose of CEOP is to provide guidelines for operations during all hazard emergencies that could affect the City (Carmel 2008).

In times of emergency, the CEOP is implemented by the Carmel Emergency Operations Center (CEOC). The primary purpose of the CEOC is to provide a centralized focal point for the effective management of all emergency response operations. Specifically, the activation of the CEOC facilitates and centralizes the following activities:



- Decision making and command authority;
- Coordination of all emergency functions;
- Management of information;
- Warning dissemination;
- Resource application; and
- Resource support and procurement (Carmel 2008).

The CEOC primary facility is located in the basement of the Carmel Police Department, on the southeast corner of Junipero and 4th Avenues. The alternate CEOC is located in the Carmel Fire Station, on Sixth Avenue between Mission and San Carlos Streets and will be used in the event that the primary CEOC is not usable. The design and organization of the CEOC creates centralized management of all operational and support components, allowing the most efficient use of available resources within a framework of supporting strategies and response objectives (Carmel 2008).

The CEOP describes function of each of the seven sections involved in operation of the CEOC, which are described in brief below:

- The Mayor and City Council set the overall policies for emergency management and support the Emergency Services Manager in their duties. The Mayor and City Council can also serve as an effective means of communication between residents and the CEOC staff;
- The Command Section is responsible for overall management of any disaster response and recovery operations for the City. The Emergency Services Director leads the Command Section and CEOC staff;
- The operations section is responsible for coordinating response and recovery operations;
- The Planning/Intelligence Section is responsible for all operational, strategic, and demobilization planning, disaster intelligence collection, assessment, and processing, report preparation, and incident documentation;
- The Logistics Section is responsible for establishment and management of the logistics efforts, including providing logistical information to the Director, managing and coordinating the provisions, and allocation and use of essential resources and services to support emergency operations;
- The Finance/Administration Section is responsible for providing, monitoring, and analyzing all elements of direct financial and administrative support to the CEOC staff; and



- The Public Information Section coordinates the origination and dissemination of all public information for the City (Carmel 2008).

To activate the emergency disaster aid a “Declaration of Local State of Emergency” has to be proclaimed by one of the authorized individuals. For the City of Carmel, the following individuals have the authority to proclaim a local emergency:

- The Emergency Service Director (City Administrator), requested when the City Council is in session;
- The Mayor or the Emergency Service Director, requested when the City Council is not in session; and
- The Director of Public Safety in the absence of the Mayor and the Emergency Service Director (Carmel 2008).

Following the ratification of proclamation of local emergency by the City Council, a designated City Hall personnel contacts the Library (Main and Park branches), Community Services Department, and the Information Systems Department that the CEOC has been activated (Carmel 2008).

Communication During Emergencies

In 2008, the City has implemented a Telephone Emergency Notification System (TENS). The unique TENS technology allows rapid dissemination of emergency and non-emergency information to the residents by phone. The phone company sends the District monthly updates of local phone numbers, and the system allows the District to develop call lists in advance based on a certain criteria (i.e. residents who need assistance during an evacuation) or real-time by using computerized maps (Carmel 2008).

In case of declared emergencies, the TENS can be activated by the City’s Incident Commanders, who contact the Watch supervisor at the Monterey County Emergency Communications Center or the Monterey County Office of Emergency Services. The Incident Commander can specify which areas, on street by street basis, need to be evacuated.

The fire departments also maintain an on-going list of residents that are known to require special assistance during times of emergency. This list allows the emergency responders to quickly address the needs of those residents who usually require additional time and resources during an evacuation.

Evacuation Routes

In certain emergencies or disaster, e.g., tsunami, there will be a definite need for Carmel residents to move quickly to other areas that are beyond the danger zone. While not all Carmel residents may be affected by any one disaster, with the possible exception of a major earthquake,



an overall evacuation plan established in conjunction with the adopted Emergency Operation Plan should be available to the residents of Carmel. [Figure 8.6: Evacuation Routes](#), shows the designated operational area and city evacuation routes. Evacuations are typically situationally dependent and may be designated by the Incident Commander. However, these pre-designated evacuation routes should result in expedient evacuation of the City.

In case of mass evacuation all the City field personnel would be summoned for evacuation assistance. In addition to City staff, active citizen volunteers, who are employed under the Volunteers in Policing (VIP) program would be summoned, as needed. The Police Department is also in the process of developing an ancillary volunteer program known as Emergency Volunteer Assistance Program (EVAP), which will seek to employ volunteers solely for the purpose of assisting in major emergencies. These volunteers would fall under the command and control of the Police Department and would assist with numerous emergency-related tasks, including assistance with evacuation.

Emergency Service Delivery

The major day-to-day emergency services are provided by the Carmel-by-the-Sea Police and Fire Departments. Emergency medical aid and transportation is provided by the Fire Department within the district with major emergency medical services provided at the Monterey Peninsula Community Hospital located on Highway 68, approximately three miles from Carmel. The emergency medical services are sponsored by the American Red Cross (Dolores Street and Eighth Avenue) with back-up emergency medical services provided by another firm called The Peninsula Medics.

Emergency Services are described in more detail in Public Facilities and Services Element.

Challenges to the Disaster Response

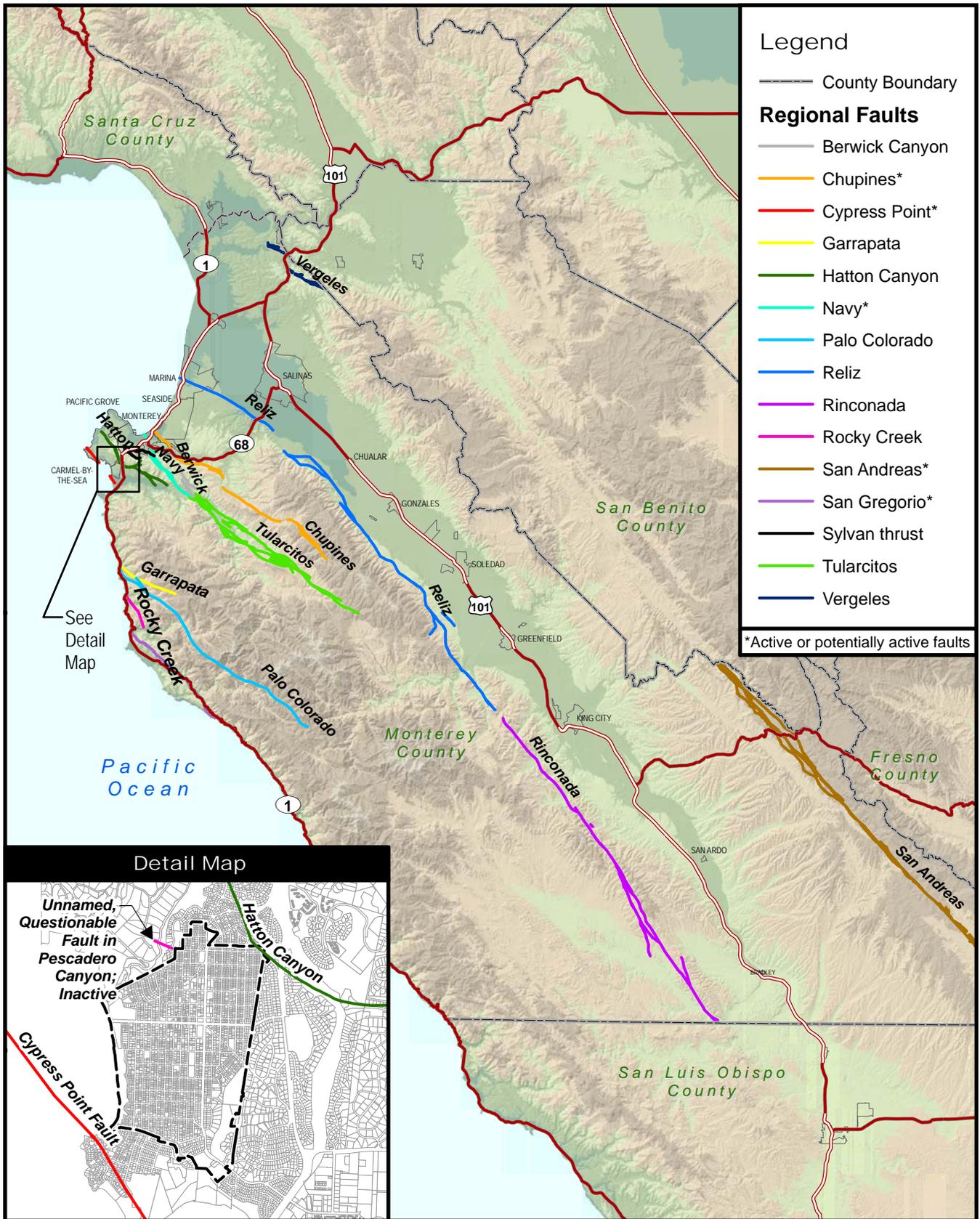
There are several challenges to provision of emergency services in the City of Carmel-by-the-Sea. The City is mostly developed and is often characterized as a village among the trees. While this is one of the key attributes of the City, the village layout creates access challenges for the emergency vehicles. Many of the roads in the residential districts are very narrow and lack adequate turnaround space for larger emergency vehicles, such as fire trucks. In addition to access, the tightly knit community of houses and trees doesn't provide adequate fuel breaks throughout the City.

Another aspect of the "village" character that creates an obstacle to emergency response is lack of addresses. Lack of house numbers in response to emergency such as fire, or flooding may not have a significant impact on the ability of emergency responders to find a property, as these are usually highly visible events. However, in case of a medical emergency, lack of the house number may delay the arrival of the medical team.

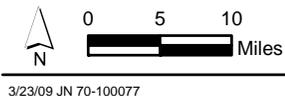
As discussed in the Public Facilities and Services Element, the water supply is one of the biggest challenges for Carmel and other Monterey Peninsula Cities. The City and its emergency



responders have a limited supply of water. In case of a large, regional fire incident, where adjoining cities would be also drawing on water supply, the City of Carmel may experience inadequate water supply to fight fires.

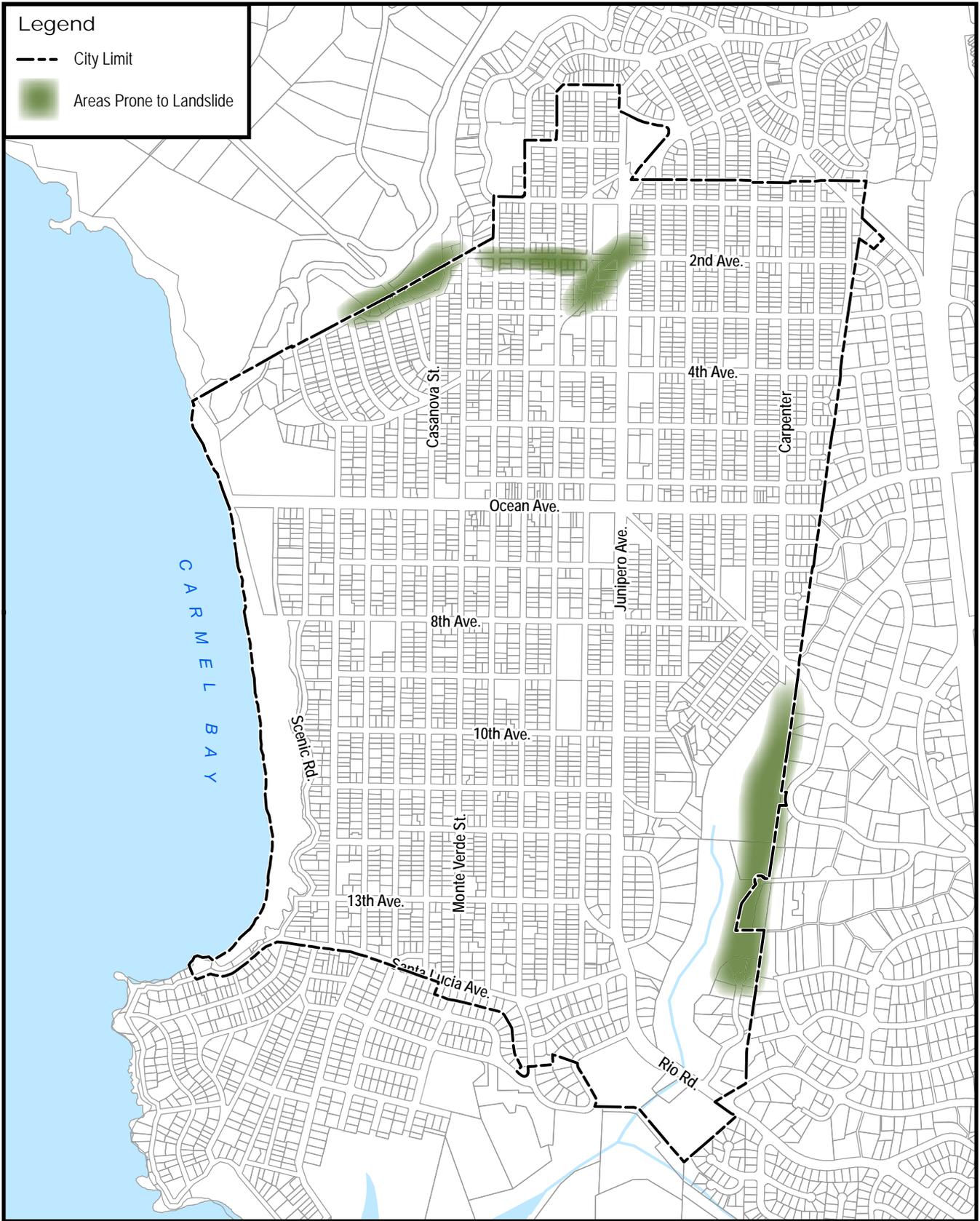


Source: Rosenberg, L.I. (2001)



CARMEL-BY-THE-SEA GENERAL PLAN UPDATE
Regional & Local Faults of Significance

Figure 8.1



Source: City of Carmel-by-the-Sea (2009)

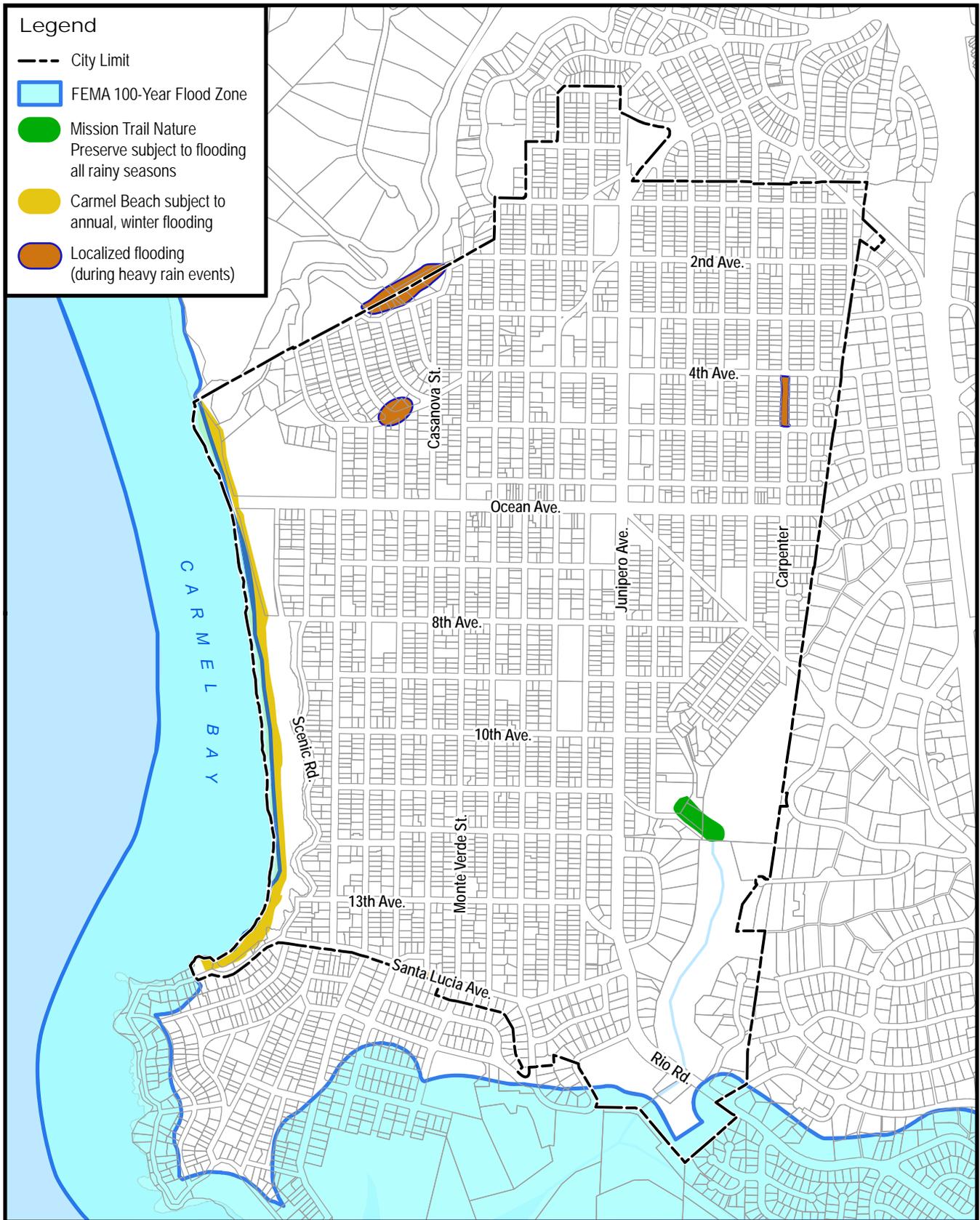


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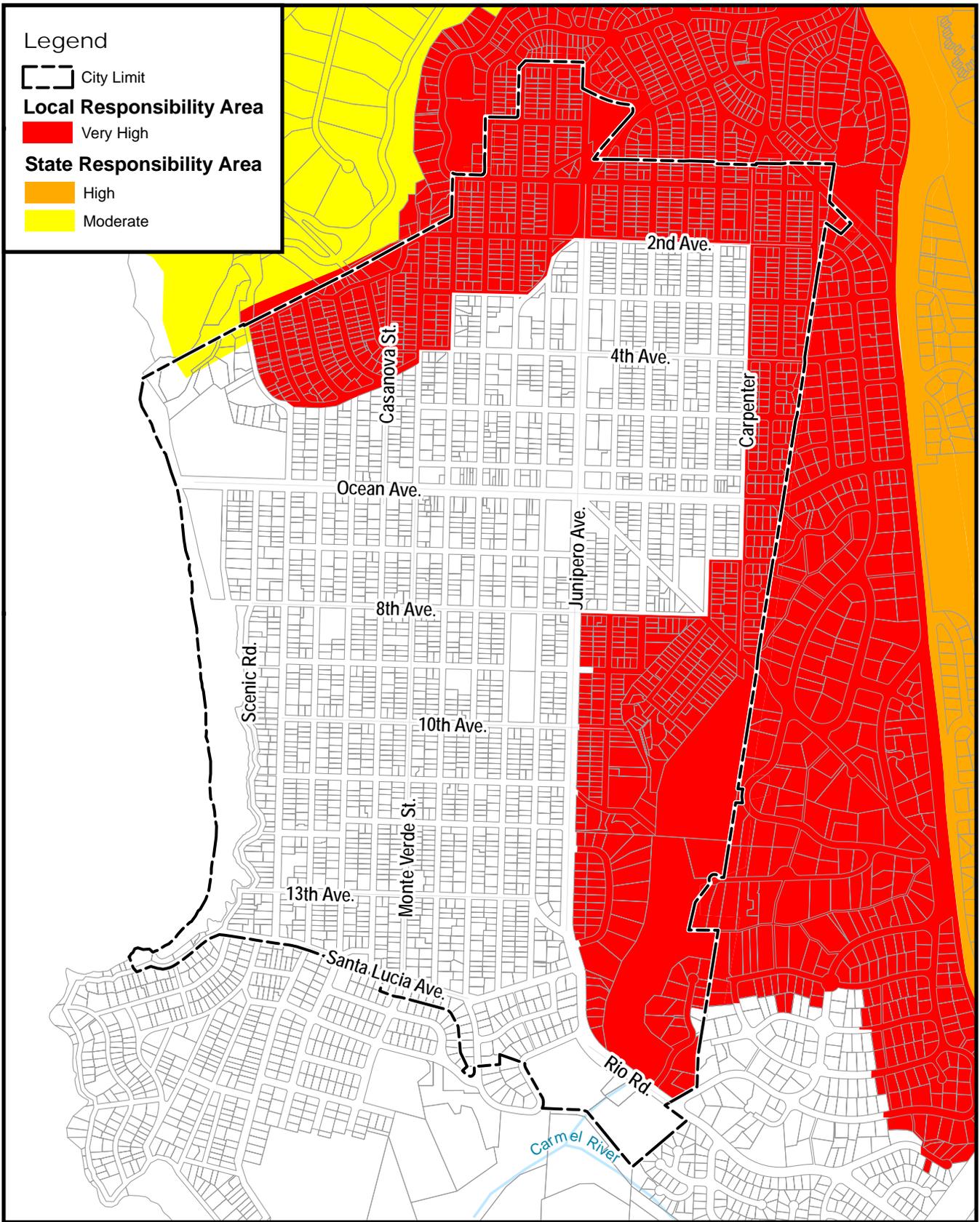
CARMEL-BY-THE-SEA GENERAL PLAN UPDATE

Areas Prone to Landslide

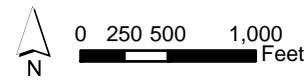
Figure 8.2



Source: City of Carmel-by-the-Sea (2009), and Federal Emergency Management Agency (2009)



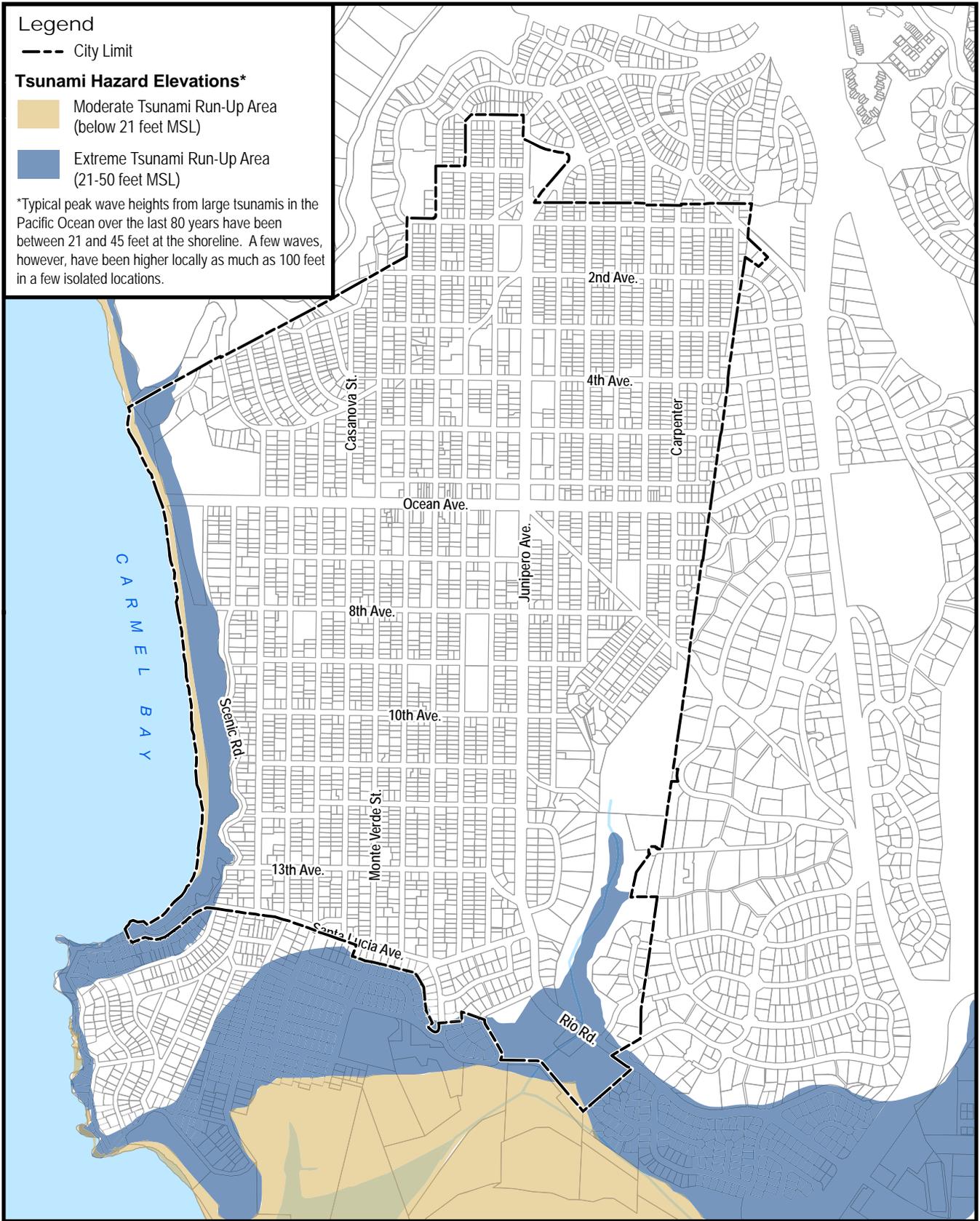
Source:FRAP (2007), & ESRI Data and Maps/StreetMap USA (2002)



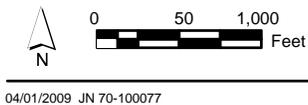
5/11/09 JN 70-100077

CARMEL-BY-THE-SEA GENERAL PLAN UPDATE
**State and Local Responsibility Area
 Fire Hazard Severity Zones**

Figure 8.4



Source: Monterey County Multi-Jurisdictional Hazard Mitigation Plan (2007)

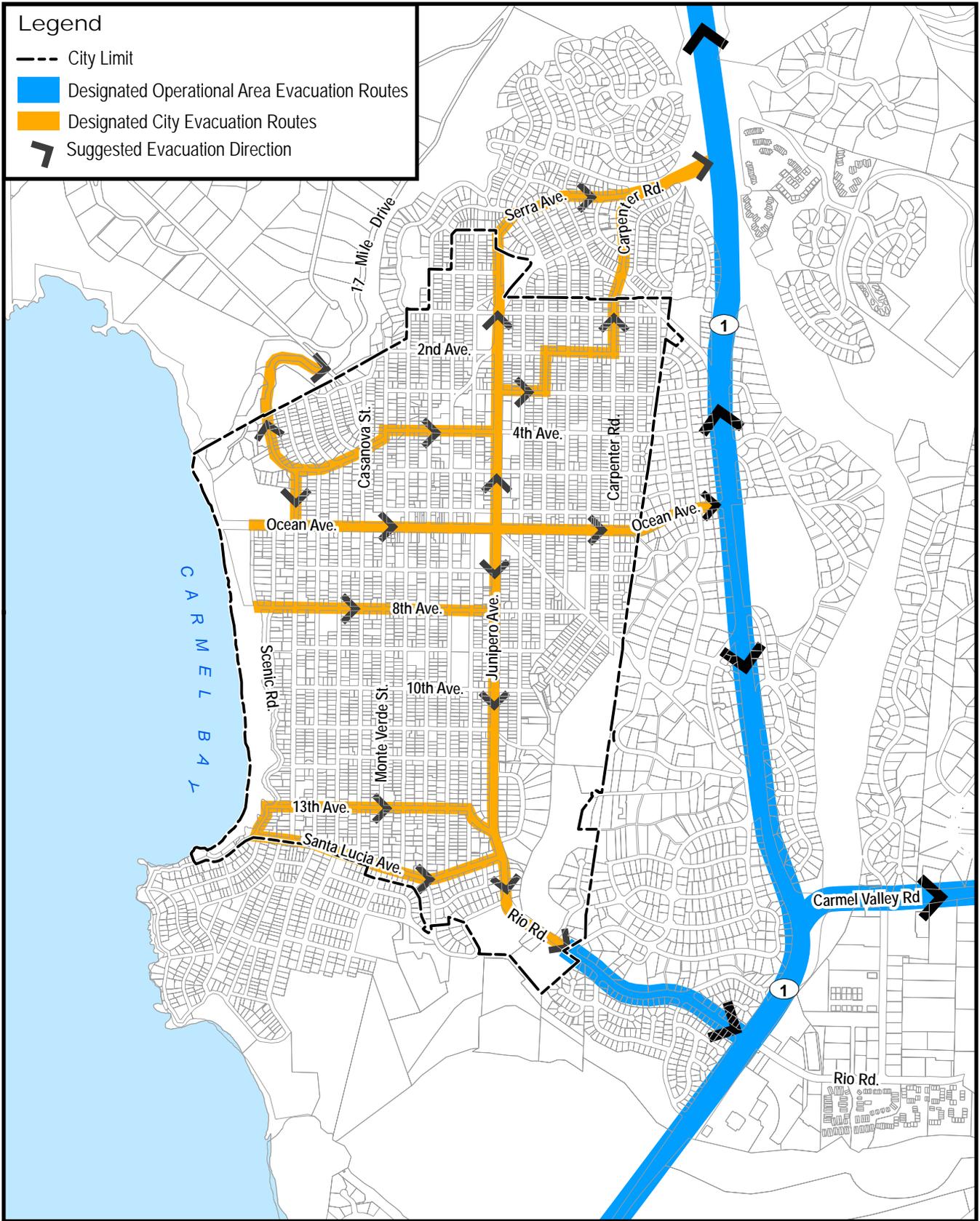


CARMEL-BY-THE-SEA GENERAL PLAN UPDATE

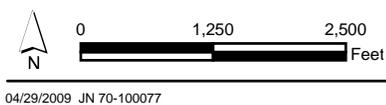
Tsunami Hazard Areas

Figure 8.5

04/01/2009 JN 70-100077



Source: City of Carmel-by-the-Sea (2009)



CARMEL-BY-THE-SEA GENERAL PLAN UPDATE

Evacuation Routes

04/29/2009 JN 70-100077

Figure 8.6



NOISE ELEMENT



Introduction and Purpose

The Noise Element of the City of Carmel-by-the-Sea's General Plan has been prepared pursuant to Section 65302(g) of the California Government Code. This section requires that each city's or county's General Plan shall contain a Noise Element. In preparing the Noise Element, the "Guidelines for the Preparation and Content of the Noise Element of the General Plan", prepared by the office of Noise Control, California Department of Health, have been closely followed.

The purpose of the Noise Element is to form the basis for the City's efforts in community noise control. The Noise Element is composed of the following parts:

- an evaluation of the present and future noise climate in Carmel;
- a discussion of the major noise sources in Carmel and some suggestions for their control;
- a section discussing the use of the Noise Element as a planning tool; and
- a section summarizing actions which the City can take to reduce existing noise levels and avoid future noise problems.

A major objective of the Noise Element is to provide guidelines to achieve noise compatible land use. As such, the Noise Element is most closely related to the Land Use, Housing, Circulation, and Open Space Elements. By identifying noise sensitive land uses and establishing compatibility guidelines for land use and noise, the Noise Element influences the general distribution, location, and intensity of future land use.

The circulation system within a city is one of the major sources of continuous noise; therefore, the existing and future circulation system identified in the Circulation Element will greatly influence the noise environment. When proper planning occurs circulation routes such as major streets and highways, along with truck routes, can be located to minimize noise impact upon noise sensitive land use.

Since noise can adversely affect the enjoyment of quiet activities in open space, the Noise Element is also closely related to the Open Space Element. Conversely, open space can be used as a noise buffer between incompatible land uses. This technique can reduce community noise levels and also provide usable open space for recreation.

This element also includes some of the findings gathered through the Community Survey (Survey). The Survey was prepared as part of the public outreach process to gain a broader response from the community, property owners, and businesses on issues facing Carmel. The complete Survey report can be found in Appendix A.



Issues of Local Significance

The greatest noise source in Carmel is the large volume of automobile traffic that travels through Carmel. Large buses, trucks and vehicles travel through residential neighborhoods and generate noise that is not in keeping with Carmel's village character. The Survey identified construction, delivery trucks, and garbage trucks as the top three most disturbing noise sources for Carmel's residents. The noise from traffic and buses was in the middle of the scale. While noises generated by animals and business district were identified as the least disturbing. Other noise sources identified in the Survey included car alarms and leaf blowers as sources of disturbing noise, beyond an occasional, acceptable limit.

Goals, Objectives and Policies

G9-1 ~~To p~~**Preserve Carmel's overall quiet environment; to reduce noise in Carmel to levels compatible with the existing and future land uses and to prevent the increase of noise levels in areas where noise sensitive uses are located.**

O9-1 Support programs to reduce community noise levels where possible to levels acceptable to the community.

P9-1 ~~Evaluate n~~Noise emission levels shall be considered alongside performance and cost, when purchasing City owned vehicles and construction equipment, ~~and require appropriate noise mitigation. This consideration should be balanced with the required performance and cost.~~

P9-2 Continuously update ~~Revise~~ the ~~present~~ noise ordinance to conform with guidelines established by the Office of Noise Control and the California Department of Health Services.

P9-A ~~The noise~~ Develop an ordinance shall clearly address that is comprehensive enough to cover all the identified sources of noise ~~and is to simple-simplify~~ to enforcement.

P9-B Ensure that construction activities are managed to minimize overall noise impacts on surrounding land uses.

P9-C Develop a system to monitor construction noise impacts on surrounding land uses.

O9-4 Develop a noise enforcement program to minimize disturbance of the community tranquility.



- P9-11** ~~Through the use of precision sound level metering equipment~~ Monitor sound levels on a routine basis in order to achieve, through a noise ordinance, reduction of unacceptable noise within Carmel.
- O9-2** Consider the compatibility of proposed land uses with noise environment when preparing community plans or reviewing specific development proposals.
- P9-3** ~~Review all new development plans for~~ Apply noise and land use compatibility with the noise environment. At a minimum use the “Land Use Compatibility for Community Noise Environments” (Figure 9.3) to guide this review ~~table and standards (Table 9.2 Land Use Compatibility for Community Noise Environments) to all new residential, commercial, and mixed-use proposals, including condominium conversions.~~
- P9-D** Require acoustical reports and evaluation of noise mitigation measures when necessary for projects that would substantially increase noise.
- P9-4** Develop standard noise mitigation measures that can be incorporated into new developments.
- P9-5** ~~The standard noise mitigation measures shall not preclude~~ Encourage ~~creative solutions~~ addressing unique situations when potential ~~conflicts between noise levels and land use~~ arise.
- P9-E** Evaluate an ordinance to require that interior noise in all new multifamily housing not exceed an Ldn of 45 dBA with the windows and doors closed (State of California Noise Insulation Standards) and extend the requirement to single-family homes.
- O9-3** Control unnecessary, excessive and annoying noises within the City where not preempted by Federal or State control.
- P9-6** ~~Protect residential areas from excessive noise from traffic, especially trucks and buses. Attempt to modify hours of truck delivery and tour bus patterns, construction activities, City owned equipment and vehicles, power equipment, and amplified sound equipment.~~
- P9-7** Establish noise performance standards for City owned equipment, air circulating and air conditioning equipment.
- P9-8** Endorse future efforts to reduce noise levels along Highway 1 to acceptable levels.



- ~~P9-9~~ Continue to monitor the Highway Improvement Project for State Route 1 (near Carmel) as discussed in the Circulation Element and ensure that when the all Project Highway 1 improvement projects in Carmel's vicinity proceeds, they include appropriate acoustical measures are included in the project design.
- ~~P9-10~~ Actively enforce the provisions of the California Motor Vehicle Code pertaining to vehicle noise emission.
- ~~P9-F~~ Continue to prohibit the use of gas-powered leaf blowers in the City.
- ~~Q9-4~~ Develop a noise enforcement program to minimize disturbance of the community tranquility.
- ~~P9-11~~ Through the use of precision sound level metering equipment monitor sound levels on a routine basis in order to achieve, through a noise ordinance, reduction of unacceptable noise within Carmel.



Supporting Information

Noise Scales and Definitions

Sound is described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by differentiating among frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dBA higher than another is perceived to be twice as loud and 20 dBA higher is perceived to be four times as loud, and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are illustrated on [Figure 9.1: Sound Levels and Human Response](#).

Many methods have been developed for evaluating community noise to account for, among other things:

- The variation of noise levels over time;
- The influence of periodic individual loud events; and
- The community response to changes in the community noise environment.

[Table 9.1: Noise Descriptors](#), provides a listing of methods to measure sound over a period of time. [Table 9.2 Land Use Compatibility for Community Noise Environments](#), provides a description of California noise standards for various land use categories.



Table 9.1: Noise Descriptors

Term	Definition
Decibel (dB)	The unit for measuring the volume of sound equal to 10 times the logarithm (base 10) of the ratio of the pressure of a measured sound to a reference pressure (20 micropascals).
A-Weighted Decibel (dBA)	A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz).
Equivalent Sound Level (L_{eq})	The sound level containing the same total energy as a time varying signal over a given time period. The L_{eq} is the value that expresses the time averaged total energy of a fluctuating sound level.
Maximum Sound Level (L_{max})	The highest individual sound level (dBA) occurring over a given time period.
Minimum Sound Level (L_{min})	The lowest individual sound level (dBA) occurring over a given time period.
Community Noise Equivalent Level (CNEL)	A rating of community noise exposure to all sources of sound that differentiates between daytime, evening, and nighttime noise exposure. These adjustments are +5 dBA for the evening, 7:00 PM to 10:00 PM, and +10 dBA for the night, 10:00 PM to 7:00 AM
Day/Night Average (L_{dn})	The L_{dn} is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the L_{eq} . The L_{dn} is calculated by averaging the L_{eq} 's for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 PM to 7:00 AM), by 10 dBA to account for the increased sensitivity of people to noises that occur at night.
L01, L10, L50, L90	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent and 90 percent of a stated time period.
Source: Cyril M. Harris, Handbook of Noise Control, 1979.	



Table 9.2: Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure (CNEL)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 – 60	55 - 70	70-75	75-85
Residential - Multiple Family	50 – 65	60 - 70	70 - 75	70 – 85
Transient Lodging - Motel, Hotels	50 – 65	60 - 70	70 - 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 - 70	70 - 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 – 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 – 85
Playgrounds, Neighborhood Parks	50 – 70	NA	67.5 - 75	72.5 - 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	NA	70 - 80	80 – 85
Office Buildings, Business Commercial, and Professional	50 – 70	67.5 - 77.5	75 - 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 - 80	75 - 85	NA

CNEL = community noise equivalent level
 Source: General Plan Guidelines, Office of Planning and Research, California, October 2003.

Notes:
 NORMALLY ACCEPTABLE - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
 CONDITIONALLY ACCEPTABLE - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
 NORMALLY UNACCEPTABLE - New Construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
 CLEARLY UNACCEPTABLE - New construction or development should generally not be undertaken.
 NA: Not Applicable

Ambient Noise Measurements

To quantify existing ambient noise levels in Carmel, 11 noise measurements were conducted throughout the City of Carmel on June 12, 2007. Locations of noise measurement sites were representative of typical existing noise exposure within the City of Carmel. [Figure 9.2: Noise Measurement Locations](#), shows the locations of each site. As shown in [Table 9.3: Noise Measurements](#), measured noise levels ranged from 41.4 dBA to 65.4 dBA.



Table 9.3: Noise Measurements

Site No.*	Location	Leq (dBA)	Time
1	Open space area at the end of Martin Road	45.1	11:13 AM
2	Guadalupe Street between 4th and 5th Avenue	41.4	11:53 AM
3	Junipero Avenue at the Police Station	44.3	12:14 PM
4a	Lincoln Avenue and Ocean Avenue at the Library	57.2	12:48 PM
4b	Lincoln Avenue and Ocean Avenue at the Library	53.6	8:40 PM
5	Scenic Drive between 8th and 9th Avenue	65.4	2:30 PM
6a	Dolores Street and 13th Avenue	45.5	2:44 PM
6b	Dolores Street and 13th Avenue	41.4	9:40 PM
7	Monte Verde Street between 11th and 12th Avenue	43.1	3:03 PM
8	Cassanova Street between 9th and 10 Avenue	58.5	3:42 PM
9	Carmelo Street between 2nd and 4th Avenue	46.2	4:08 PM
10a	Dolores and 2nd Avenue	41.6	4:48 PM
10b	Dolores and 2nd Avenue	46.3	9:20 PM
11	Construction Activity along Scenic Drive	64.6	2:00 PM
Note: * Noise levels were also taken during the evening per the City's requests. Site with both daytime and nighttime measurements are denoted by "a" and "b". Source: Noise Monitoring Survey conducted by RBF Consulting, June 12, 2007.			

The majority of the City consists of residential homes. The commercial areas within the City are concentrated along major thoroughfares such as Ocean Avenue. As indicated in the noise measurement level provided in [Table 9.3: Noise Measurements](#), noise levels within the residential areas of the City are well below 60 dBA. The noise levels within the residential portions of the City are considered “Normally Acceptable” based upon California Standards. The highest noise levels were recorded along Scenic Drive. However, this noise also takes into account the noise generated from the Pacific Ocean in addition to traffic traveling along Scenic Drive. Based upon the noise measurements, the noise levels at the commercial areas (site 3 and 4) were well below 65 dBA, which would be considered “Normally Acceptable” for commercial and public areas.

Major Noise Sources

Control or abatement of a noise problem can typically be accomplished in any one or a combination of three ways: reduce or remove completely the noise source; protect the receiver of the noise; or block the path between the source of the noise and the receiver to reduce the noise level. All of these options can be used to reduce the noise exposure in Carmel.



State Highway 1

The greatest generator of continuous high noise levels, Highway 1, is located east of Carmel, outside of the city limits. The noise generated by motor vehicles on Highway 1 is caused by a relatively large number of automobiles and trucks traveling at high speed. This high noise level coupled with the fact that residences are located close to the roadway results in a noise problem. The noise levels along Highway 1 in the yards of the nearest residents make conversation and normal vocal levels difficult. Even inside these homes with the windows and doors closed, highway noise is constantly audible as background level noise.

Truck and Bus Routes

Delivery trucks to the central business area of Carmel mainly use the following route: Carpenter Street, Second Avenue, Santa Fe Street, Third Avenue, Junipero Avenue, Fourth Avenue, San Carlos Street, Thirteenth Avenue and Rio road. As is shown in [Figure 9.2: Noise Measurement Locations](#) and [Table 9.3: Noise Measurements](#), noise levels along these streets ranged between 44.3 dBA (Junipero Avenue at 4th Avenue) to 45.5 dBA (Dolores Street at 13th Avenue). These noise levels are considered very low and are “Normally Acceptable” for all types of land uses, including residential uses (see [Table 9.2: Land Use Compatibility for Community Noise Environments](#)). A heavy truck can generate noises as high as 88 dBA (TRBNA 2009), however, the noise measuring equipment averages noise levels recorded, resulting in a lower reading.

Tour buses traveling through Carmel have also been identified by residents as a source of noise. Tour buses are directed in a loop pattern through Carmel on Carpenter street, Second Avenue, Santa Fe Street, Third Avenue, Junipero Avenue, Eighth Avenue, San Carlos Street, Thirteenth Avenue, and Rio Road. The tour bus route is similar to the designated truck route. The main problem with trucks and buses is that in a quiet residential area the noise emitted by these vehicles contrasts sharply against the low-level background noise.

Ocean Avenue

Ocean Avenue is one of the major access arterials of Carmel. Ocean Avenue presently carries an average daily traffic of 11,322 automobiles (more during seasonal periods and weekends) with a decreasing number of motor vehicles west of the business area. Truck traffic is prohibited on Ocean Avenue from Highway 1; therefore, the section of Ocean Avenue from Highway 1 to east of the central business area is used by automobiles only. Within the business area, trucks have destinations on Ocean, Junipero, Fifth, Sixth, Seventh and Eighth Avenues, and San Carlos, Lincoln, Mission, Dolores and Monte Verde Streets having to travel and unload throughout the business district. Residents living adjacent to Ocean Avenue are occasionally exposed to temporary, traffic generated, high noise levels. Noise measurements recorded along Ocean Avenue ranged from 53.6 dBA (evening) and 57.2 dBA (mid day) (see [Figure 9.2: Noise Measurement Locations](#) and [Table 9.3: Noise Measurements](#)). These noise levels are considered very low and are “Normally Acceptable” for all types of land uses, including residential uses (see [Table 9.2 Land Use Compatibility for Community Noise Environments](#)).



Individual Vehicles

One of the most annoying and illegal sources of noise in any community, including Carmel, is unmuffled or improperly muffled motor vehicles. Section 27150 of the California Motor Vehicle Code requires that all vehicles be equipped with a properly maintained muffler. Section 27151 makes it illegal to modify the exhaust system of any vehicle. Enforcement of these sections of the vehicle code does not require the use of a sound level meter to prove a violation. In addition to the muffler regulations, Section 23130.5 of the Vehicle Code sets quantitative noise emission limits for different vehicle classes. Enforcement of this section requires noise monitoring equipment and trained personnel. Since almost all the vehicles that violate the quantitative limits have faulty or modified exhaust systems, it is generally more cost effective for a city to cite vehicles under sections 27150 and 27151.

Trash Pick-Up

Noise from trash pickup and compacting results from the use of hydraulic equipment which raises and lowers the metal trash bins, as well as compacts their contents. Typical noise levels range from 80 to 85 dBA at 50 feet during the raising, lowering and compacting operations. A typical trash pickup takes approximately three minutes. The higher noise levels occur during approximately one-half of the operation. The City experiences this type of noise level from existing trash pick-operation, and while this service emits much higher noise levels than its surroundings, the impact of trash pick up service would be short-term and periodic.

Street Sweepers

Because of the slow speed of the sweepers and the need to sometimes sweep opposite to the traffic flow, it is imperative that the sweepers operate when traffic is at its lowest. The nominal operating speed for a street sweeper is 5 miles per hour. This ensures a thorough pickup of debris, but can provide frustrating traffic delays during busy traffic hours. Most cities find it nearly impossible to sweep busy arterial streets or commercial areas after 7:00 AM. In residential areas the opposite is true as streets tend to have less on-street parking during normal work hours. [Table 9.4: Street Sweeper Noise Levels](#), provides representative noise levels for two types of street sweepers. As indicated in [Table 9.5: Street Sweeper Noise Levels](#), noise levels can vary between product type and operation. The noise generated by street sweepers may cause annoyance to surrounding sensitive uses. Although the sweepers result in noise levels above 60 dBA it is not a sustained noise level. The operation of street sweepers would vary and is not anticipated to significantly increase the ambient noise levels within the City.

Table 9.4: Street Sweeper Noise Levels

Vehicle	Idling at 10 feet	Operating at 10 feet	Idling at 75 feet	Operating at 75 feet
Schwartz Sweeper	76.7 dBA	91.2 dBA	66.1 dBA	76.7 dBA
Johnston Sweeper	66.2 dBA	88.9 dBA	55.4 dBA	73.0 dBA

Source: City of Ashland, <http://www.ashland.or.us/Page.asp?NavID=9565>, July 17, 2007.

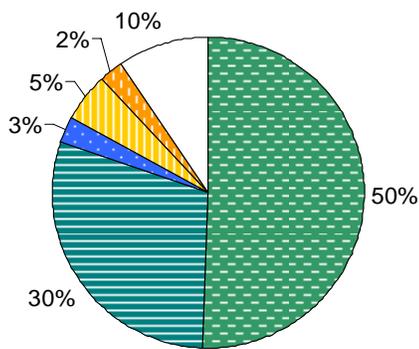


Community Perceptions About Noise

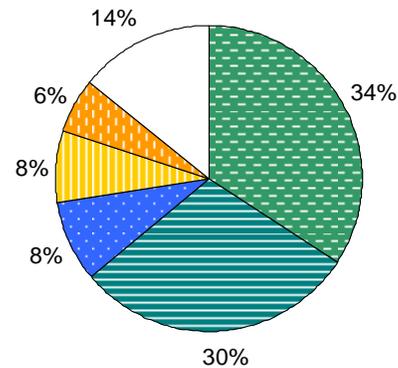
The Survey prepared as part of the General Plan update included a series of questions related to establishing community noise perception. A great majority of respondents (80 percent) perceived Carmel as a tranquil, quiet place with only occasional noise problems (64 percent). A small percentage of respondents (22 percent) believed that Carmel has an increasing noise problem. Similarly, a small percentage of respondents (22 percent) thought that the City should do more to control noise. Graph 9.1: Noise Perception, provides detail related to Carmel residents perception of noise.

Graph 9.1: Noise Perceptions

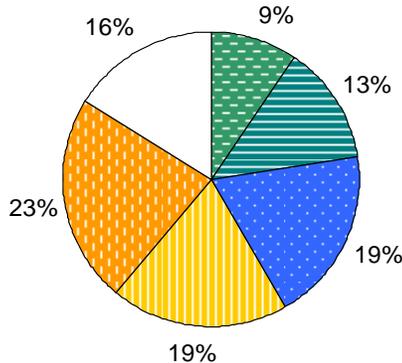
Tranquil, Quiet Place



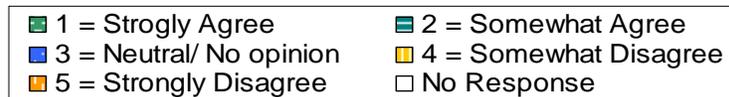
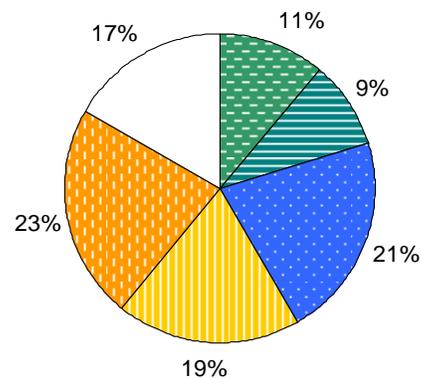
Occasional Noise Problems



Increasing Noise Problems



Increase Noise Control

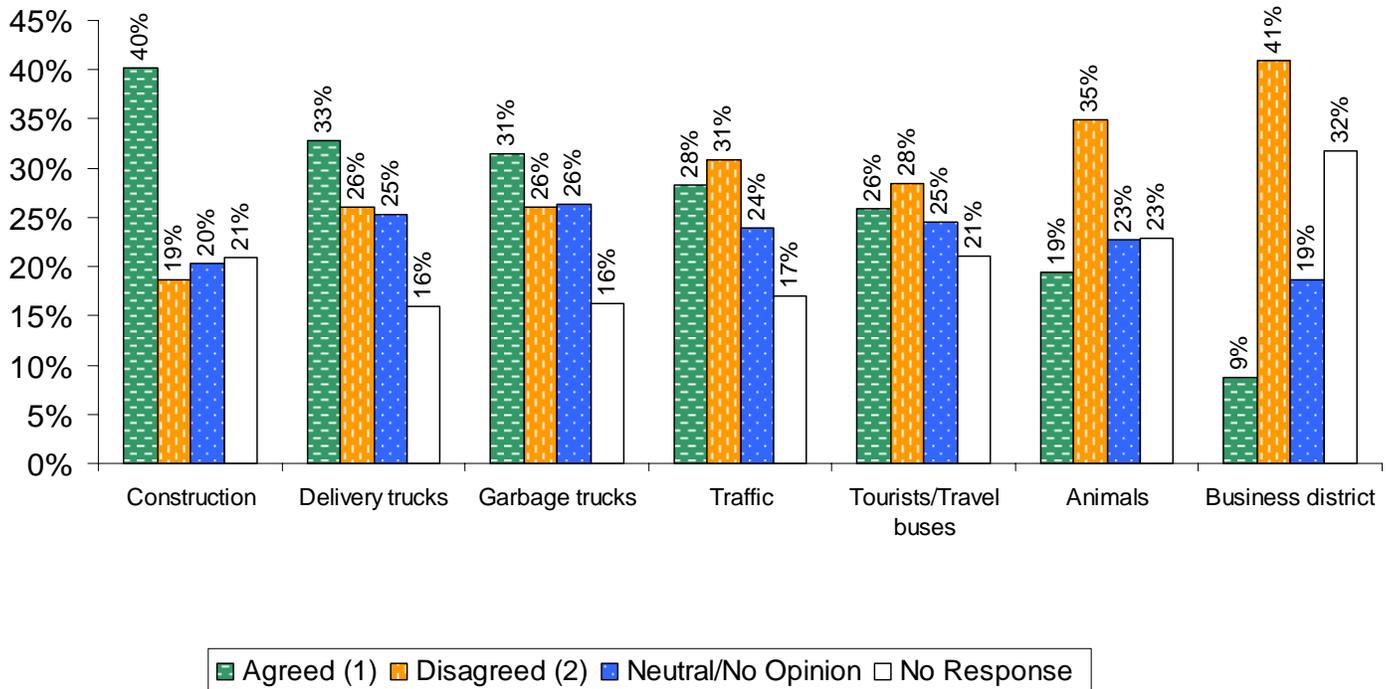


Construction, delivery trucks, and garbage trucks were identified as the top three most disturbing noise sources in Carmel. The noise from traffic and buses was in the middle of the scale. While



noises generated by animals and business district were identified as the least disturbing (see Graph 9.2: Disturbing Noise Sources). In addition, the narrative portion of responses also identified car alarms and leaf blowers as sources of disturbing noise, beyond an occasional, acceptable limit.

Graph 9.2: Disturbing Noise Sources



Notes:

(1) Agreed category for this graph combines the results of the strongly agreed and somewhat agreed categories. For a detailed breakdown of these categories, please refer to Appendix A.

(2) Disagreed category for this graph combines the results of the strongly disagreed and somewhat disagreed categories. For a detailed breakdown of these categories, please refer to Appendix A.

A lot of the miscellaneous noises above were identified as common problem in Carmel. Power saws, leaf blowers and other assorted power tools (such as branch shredders and street sweepers operated by the City) are often annoying to neighbors. The variety of power tools in use and because some are used exclusively outdoors, makes enforcement of fixed noise emission limits difficult. The hours during which these tools are used, however, can be regulated. Other activities which generate noise, and which may cause annoyance, include amplified music, public address systems, and refuse collection and are best controlled through the adoption of a quantitative community noise ordinance.



The Noise Element as a Planning Tool

The noise measurements for Carmel provide baseline information that will be very useful in the City's planning efforts. Some of the more important uses follow.

Exterior Noise Levels and Land Use Compatibility

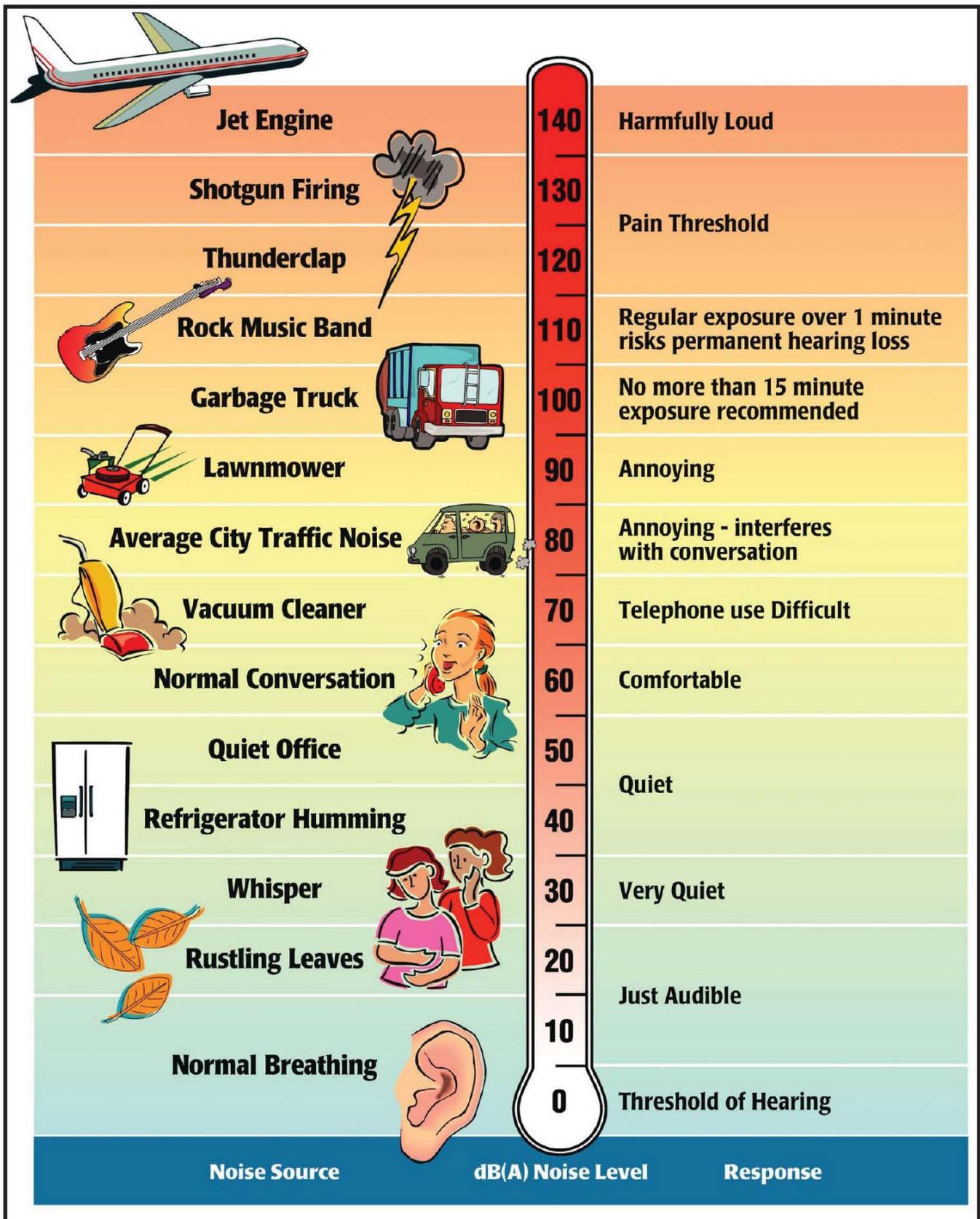
Over the years many studies have been performed to determine how much noise is acceptable for different land uses. [Table 9.2: Land Use Compatibility for Community Noise Environments](#), summarizes this information. The table indicates that there is often a large range of exterior noise levels for which a land use could be made compatible if the necessary noise reduction features are included in the design of the project. The land use compatibility table used in conjunction with the noise measurements will, therefore, provide additional input into the decision making process. Proposals to rezone parcels, for example, can be quickly evaluated for any potential conflicts with the existing noise environment.

The Noise Exposure Contours and the California Noise Insulation Standards

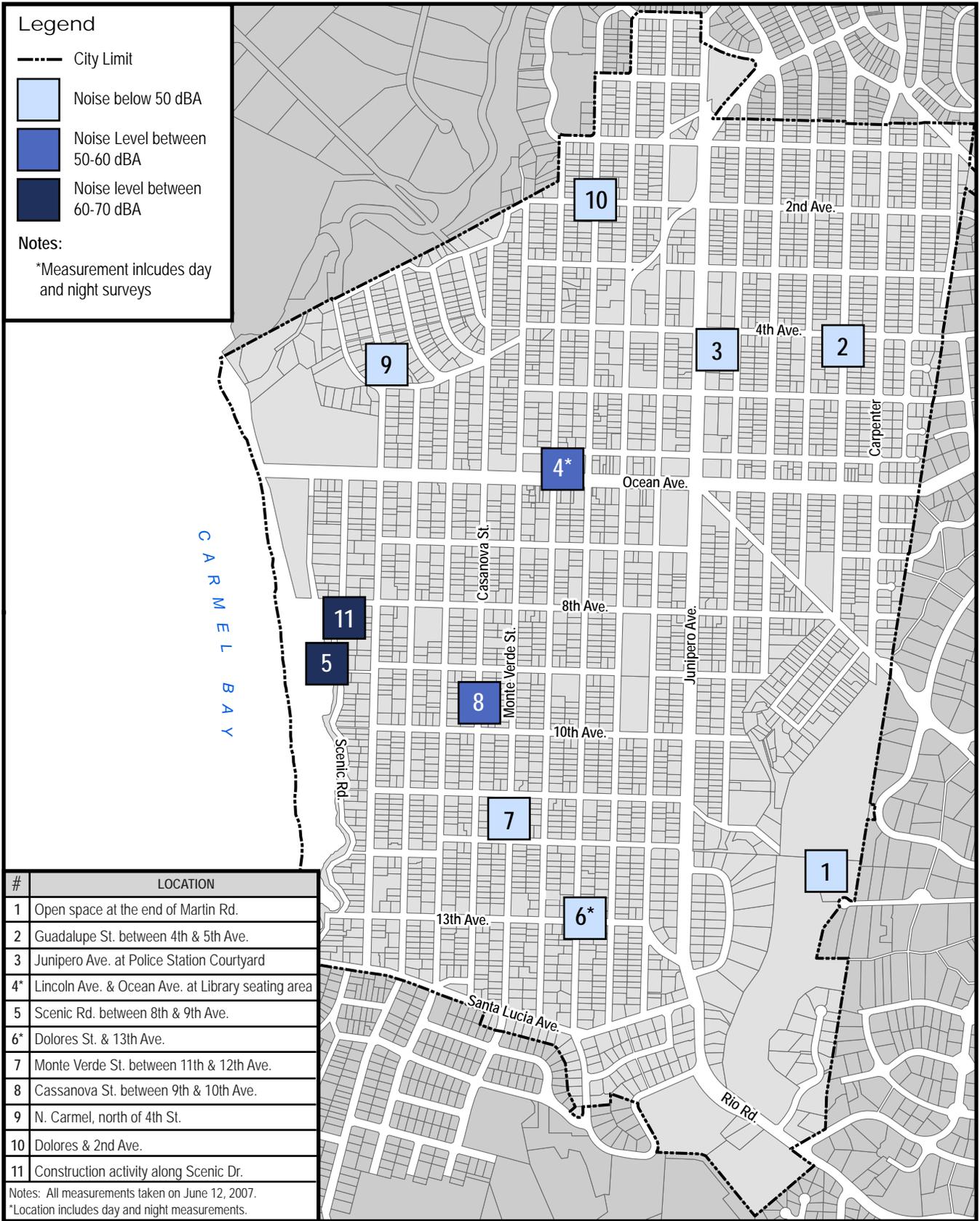
The California Noise Insulation Standard for Multi-Family Dwellings (Title 25 of the California Government Code) requires an acoustical report for dwellings proposed in areas where the CNEL exceeds 60 dBA. The purpose of the acoustical report is to demonstrate the manner by which the development will meet the standards for interior noise levels.

Noise Mitigation Measures

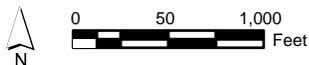
In some situations it is necessary to construct noise sensitive developments (e.g. residential, schools, hospitals) in noisy areas. In those cases noise control engineering can be used to help mitigate noise impacts in a way that does not interfere with structural, architectural, or building code requirements. The measures or combinations of measures used to mitigate noise fall into four major categories: site planning, architectural layout, noise barriers, and construction modifications. Noise mitigation measures should also be assessed against other community values such as open space, aesthetics, maintenance problems, etc. Each project has its own special problems, and mitigation measures which are cost effective for one project may not be for another. Regardless of the measures employed for a project, mitigation is generally cheaper and more effective if it is addressed during the design phase.



Source: Melville C. Branch & R. Dale Beland (1970), Environmental Protection Agency (1974)



Source: RBF Consulting (2007)



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Noise Measurement Locations

Figure 9.2



REFERENCES



REFERENCES

Printed References

Circulation Element

City of Carmel, 2000, *Consideration of the Carmel-by-the-Sea Bikeways Plan*, October 2000. (Carmel 2000)

City of Carmel, 2003, *City of Carmel-by-the-Sea, California: City-Wide traffic Safety Study*, October 2003. (Carmel 2003b)

Public Facilities and Services

California American Water, *2004 Comprehensive Planning Study*, Prepared by RBF Consulting, November 23, 2004. (Cal-Am 2004)

Carl Cherry Center for the Arts, *About the Carl Cherry Center for the Arts*, <<http://www.carlcherrycenter.org/index.php>> Accessed April 7, 2009. (Cherry 2009)

Carmel Forest Theater Guild, *About the Forest Theater*, <<http://www.foresttheaterguild.org/>> Accessed April 6, 2009. (Forest Theater 2009)

Carmel Foundation, *About Us, Programs, and Services*. <<http://www.carmelfoundation.org/index.html>> Accessed April 3, 2009. (Carmel Foundation 2009)

Carmel Mission, *Museum*, <<http://www.carmelmission.org/>> Accessed April 3, 2009. (Mission 2009)

Carmel Unified School District, *Info/Forms: The Community and the School District*, <<http://www.carmelunified.org/carmelunified/site/default.asp>> Accessed April 3, 2009. (CUSD 2009)

Carmel Youth Center, *About Us, Programs*, <<http://carmelyouth.com/>> Accessed April 3, 2009. (CYC 2009)

City of Carmel, 2007, *City of Carmel-by-the-Sea Drainage System – Existing Facilities*, January 2007. (Carmel 2007)

Harrison Memorial Library, *Library Information*, <<http://www.hm-lib.org/>> Accessed April 6, 2009. (HML 2009)

Sunset Center, 2009, *Sunset Center: Theater History*, <<http://www.sunsetcenter.org/>> Accessed April 3, 2009. (Sunset 2009)

Open Space and Conservation

City of Carmel, *Bi-Annual Review of City-Owned Property*, City of Carmel Department of Community Planning and Building, October 7, 2004. (Carmel 2004)



- City of Carmel, *City of Carmel-by-the-Sea Forest Management Plan*, City of Carmel Forestry Department, March 2001. (Carmel 2001)
- City of Carmel, Final Results of the Environmentally Sensitive Habitat Area Study Conducted for the City of Carmel-by-the-Sea, Jones & Stokes Associates, Inc., July 6, 1995. (Carmel 1995)
- City of Carmel, *Shoreline Management Plan*, City of Carmel, December 2003. (Carmel 2003)
- Monterey Bay Unified Air Pollution Control District, *2004 Air Quality Management Plan for the Monterey Bay Region*, MBUAPCD, September 2004. (MBUAPCD 2004)
- State of California, *State of California General Plan Guidelines 2003*, Governor's Office of Planning and Research, October 2003. (CA 2003)
- SWRCB, ASBS Draft Data Report: Complimentary Update to the August 2006 ASBS status Report, April 2008. (SWRCB 2008)
- SWRCB, California Marine Waters Areas of Special Biological Significance, Reconnaissance Survey Report – Carmel Bay, Monterey County, April 1979. (SWRCB 1979)
- SWRCB, Status Report: Areas of Special Biological Significance, Ocean Unit Division of Water Quality, August 2006. (SWRCB 2006)

Environmental Safety

- City of Carmel, City of Carmel-by-the-Sea Emergency Operations Plan, December 2008. (Carmel 2008).
- Federal Emergency Management Agency, 2006, *Tsunami*, <http://www.fema.gov/hazard/tsunami/index.shtml>, FEMA, April 2006. (FEMA 2006)
- Monterey County, *Draft Program EIR Monterey County 2006 General Plan*. August 18, 2006. (Monterey County 2006)
- Monterey County, Monterey County Operational Area Tsunami Incident Response Plan, June 2008. (Monterey County 2008)
- Monterey County, Multi-Jurisdictional Hazard Mitigation Plan, Monterey County, CA, September, 2007. (Monterey County 2007)
- Monterey County, Monterey County Operational Area Hazardous Materials Incident Response Plan, January 2007. (Monterey County 2007b)

Noise

- RBF Consulting, City of Carmel-by-the-Sea Noise Measurements, July 2007. (RBF 2007)
- Transportation Research Board of the National Academies, *Vehicle Noise Sources and Noise-Suppression Potential*, <<http://pubsindex.trb.org/document/view/default.asp?lbid=40119>>. Accessed April 15th, 2009. (TRBNA 2009)



Agencies and Persons Contacted

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Forest, Parks and Beach Department: Mike Branson, City Forester.

Public Works Department: Stu Ross (Superintendent), Clayton Neill.

Police Department: Chief George Rawson, Corporal Steve Rana

Fire Department: Sarah Gunter

Organizations and Individuals

California American Water: Gary Hofsheier, Operations Supervisor; Personal communication April 2009; materials received April 22, 2009. (Cal-Am 2009)

Carmel Area Wastewater District: Sanford Veile; Personal communication December 2008. (CAWD 2008)

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