3.4 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES

Cultural resources are defined as historic-period buildings, structures and objects, prehistoric or historic-period archaeological resources, tribal cultural resources, and paleontological resources. This analysis briefly describes the existing cultural setting in the vicinity of the proposed Strand and Pier Hotel Project (Project) and discusses known cultural resources on the Project site. Additionally, this section assesses the potential effects of the proposed mixed-use hotel development on cultural resources based on criteria of the California Environmental Quality Act (CEQA), as well as by the City of Hermosa Beach's (City's) regulations, policies, and design guidelines incorporated in the Hermosa Beach Municipal Code (HBMC). Data for this analysis were adapted from the Applicant-prepared Historical Resources Evaluation (Kaplan Chen Kaplan 2017), a Cultural Resource Assessment Report and Paleontological Assessment Memorandum prepared for the proposed Project by Applied Earthworks, PLAN Hermosa, and the City's Beach Preservation Ordinance (Ord. 98-1186 Section 4) (1998). Applied Earthworks completed an independent peer review of the Applicant-prepared Historical Resources Evaluation, which is included in the Cultural Resource Assessment Report (see Appendix E). Additionally, an Amec Foster Wheeler cultural resources specialist provided peer review of the Cultural Resource Assessment Report and Paleontological Assessment Memorandum prepared by Applied Earthworks.

3.4.1 Environmental Setting

Prehistoric Background

Humans have occupied mainland Southern California for the past 10,500 years, beginning with the Gabrieliño, which arrived in Southern California in 500 B.C. The Gabrieliño occupied territory that extended from the Los Angeles Basin – including the Project site – south to parts of Orange County, north to Topanga Canyon, and also included the four southern Channel Islands. The Gabrieliño exhibited a complex culture, social organization, religious beliefs, as well as art and material production. This tribe was known for excellent artisanship in the form of pipes, ornaments, cooking implements, inlay work, and basketry. Although few specifics are known of Gabrieliño life, their economic system managed food reserves (i.e., storage and processing), exchanged goods, and distributed resources. Population estimates gleaned from historic reports indicate there were possibly more than 100 mainland villages; Spanish reports suggest village populations ranged from 50 to 200 people (Bean and Smith 1978). Prior to Spanish migration the Gabrieliño population had been decimated by diseases, likely spread via coastal stopovers by early Spanish maritime explorers (Tac 1930). Additionally, multiple epidemics took a great toll on

Native American populations between approximately 1800 and the early 1860s (Porretta 1983), along with the cultural and political upheavals that came with European, Mexican, and American settlement (Goldberg 2001).

Due to the relatively long history of urban development, the full extent and density of Gabrieliño occupation of the immediate Project site is difficult to accurately characterize. However, based on the records searches for the area surrounding the Project site conducted by Applied Earthworks, no prehistoric sites are known to be within or in the vicinity of the Project site (see Appendix E).

Historical Setting

Initial European contact with the Gabrieliño began in 1542, followed by more intensive exploration in 1769, when Spanish explorer, Gaspar de Portola, passed through Gabrieliño territory. In 1771, Mission San Gabriel was established approximately 23 miles northeast of the Project site and it slowly integrated the Gabrieliño from the surrounding region. El Pueblo de La Reina de Los Angeles was established in 1781 approximately 16 miles northeast of the Project site; however, Spanish settlement in the vicinity of the Project site did not occur until the establishment of "Ranchos."

The Rancho era involved establishment of Ranchos of thousands of acres in area, owned by families who had been deeded the land by first the Spanish crown, and later the Mexican government. Hermosa Beach was part of *Rancho Sausal Redondo,* a 22,548-acre Mexican land grant given to Antonio Ygnacio Avila in 1837 by Juan Alverado, the governor of Alta California. *Rancho Sausal Redondo*, which was used mainly as grazing lands, included areas known today as Hawthorne, Hermosa Beach, Inglewood, Lawndale, Manhattan Beach, and Redondo Beach. In 1855, 7 years after the cession of California, the U.S. recognized Avila as the rightful owner of the Rancho. In 1858, following the death of Avila, Scottish native Robert Burnett purchased *Rancho Sausal Redondo* and combined it with the adjacent *Rancho Aguaje de la Centinela*. Cattle and sheep were raised on the land until 1884, when Daniel Freeman, who had been leasing a portion of the land, purchased the Rancho and sold the property as divided plots to real estate developers. Approximately 1,500 acres were sold to development agents, Moses Hazeltine Sherman and Eli Clark of the Hermosa Beach Land and Water Company (see Appendix E).

Development of Hermosa Beach and The Strand

The first 10 years of the 20th Century mark the early development the City. During this period, The Strand and Hermosa Pier were first constructed, hotels were developed, city hall, police and fire stations, schools, a post office, and a library were all established.

In 1901, the City was surveyed to build a 2-mile-long wooden boardwalk. In 1914, the portion of the boardwalk – now known as The Strand – was cemented with final segments of the boardwalk being completed, at the north end, in 1926. Hermosa Beach Land and Water Company first built Hermosa Pier in 1904, which was eventually reconstructed after it was partially destroyed during a storm in 1913. In 1907, the City was incorporated and acquired the 2-mile-long boardwalk and ocean frontage. During this time, 210 feet on each side of the Hermosa Pier were designated in perpetuity as recreational space for the benefit of the public.

Historic Period Architecture within the City

The City has not been comprehensively surveyed for historic architectural resources. However, during the preparation of the PLAN Hermosa EIR, a citywide windshield survey was conducted by certified architectural historians to examine existing architecture and identify examples of property types, styles, and methods of construction that represent key periods of development in the City.

Early 20th Century development in the City is characterized by Craftsman style (1906 to 1930) and Spanish Colonial and Mediterranean Revival-style (1920 to 1940) residential development. Generally, the residences are small-scale to allow for the maximum amount of yard space, patios, and courtyards to promote outdoor living. The majority of the City's early residential properties are single-family; however, there are a small number of duplexes, apartment buildings, and bungalow courts. Commercial architecture constructed in the City during the first three decades of the 20th Century, is characterized by unreinforced brick construction, parapets, and adaptable storefronts. During the Early 20th Century commercial properties were developed along Hermosa Avenue, Pier Avenue, and Pacific Coast Highway (El Camino Real). The Bijou Theater (formerly the Metropolitan Theater), constructed in 1923 on Hermosa Avenue, and the Surf City Hotel (formerly the Hermosa Hotel), constructed in 1924 on Pier Plaza, are two remaining commercial buildings from this early period of City's development; however, there are very few other remaining examples of such commercial structures (City of Hermosa Beach 2017b).

During the Post World War II era, there was some single- and multi-family residential infill within older residential tracts and newly subdivided tracts were improved. Architectural styles popular during this period were the Ranch, Minimal Traditional, and Mid-Century Modern. Commercial infill along the vacated railroad rights-of-way that were improved into roads also occurred during the Post-War Era. There are approximately four Mid-Century Modern commercial buildings along Aviation Boulevard, Hermosa Avenue, Pacific Coast Highway, and Pier Avenue. Mid-Century Modern design (1945-1965). These buildings are characterized by sleek, simplified geometry and asymmetrical, intersecting angular planes of masonry volumes

and glass curtain walls, locked together by a flat planar roof. Additionally, the Sea Sprite Motel, constructed in 1958 on the corner of The Strand and 10th Street, and is an example of a Mid-Century Modern style motel related to recreation (City of Hermosa Beach 2017b).

Designated Historical Resources within the City

Historic architectural resources include standing buildings, structures, and objects of historic or aesthetic importance. When a significant concentration of such resources occurs within a defined geographic space, a historic district may be defined.

The California Register of Historic Resources (California Register), which is maintained by the California Office of Historic Preservation (OHP), includes resources that are listed in or are formally determined eligible for listing on the National Register of Historic Places (NRHP), as well as some California State Landmarks and Points of Historical Interest. The eligibility criteria for listing in the California Register are similar to those for listing in the NRHP, but focus on the importance of the resources to California history and heritage. There are three buildings within the City that are listed in the California Register: Bijou Theater (1220-1235 Hermosa Avenue); Community Center (710 Pier Avenue); and Clark Building (861 Valley Drive).

The City's Historic Resources Preservation Ordinance in Hermosa Beach Municipal Code (HBMC) Chapter 17.53 is intended to identify and ensure the long-term protection and use of historical resources, such as historic buildings and structures, sites and places within the City that reflect special elements of the City's architectural, artistic, cultural, historical, political, and social heritage. As described in the LAND USE + DESIGN Element of PLAN Hermosa, there are three buildings that have been designated for protection under the City's Historic Resources Preservation Ordinance: Bijou Theater (1220-1235 Hermosa Avenue); Community Center (710 Pier Avenue); and Bank of America Building (90 Pier Avenue). Additionally, the Surf City Hostel (20–26 Pier Avenue) has been identified as a potential landmark that warrants further study per Section 17.53.040(B) of the City's Historic Resources Preservation Ordinance (Planning Commission Resolution No. 98-65).

Table 3.4-1. Historical Resources within the City of Hermosa Beach

Name	Address	Distance from the Project Site	California Register Status	City Historic Resources Preservation Ordinance Status
Bijou Theater	1220-1235 Hermosa Avenue	~180 feet east	Listed	Designated
Bank of America Building	90 Pier Avenue	~280 feet southeast	Not Listed	Designated
Surf City Hostel	20-26 Pier Avenue	~100 feet south	Not Listed	Warrants Further Study
Community Center	710 Pier Avenue	~0.4 miles east	Listed	Designated
Clark Building	861 Valley Drive	~0.4 miles east	Listed	Not Designated

- The *Bijou Theater* at 1229-1235 Hermosa Avenue is listed on the California Register and is also designated as a local landmark by the City. The building, which is currently occupied by Chase Bank, is located approximately 180 feet to the east and facing away from the Project site. The theater is located along Hermosa Avenue facing eastward with a view of Hermosa Avenue, on-street parking, the retail buildings and associated parking lot across Hermosa Avenue. Looking northward from the theater, the multi-story City-owned Parking Lot C (Lot C) is visible. The view to the south of the building includes the back side of retail and restaurant buildings that line Pier Plaza, and looking to the west, towards the Project site, the back side of Bijou Theater abuts 60 13th Street which houses Canoe Hospitality, LLC.

Bijou Theater opened as Metropolitan Theater in 1923. The movie theater showed its final film in 1966 and became Chase Bank in 2013.

- The *Bank of America Building*, which is also designated for protection under the City's Historic Resources Preservation Ordinance, is located approximately 280 feet southeast of the Project site. The building fronts Pier Plaza and Hermosa Avenue, with its entrance off of Pier Plaza. Businesses along both streets are visible from the Bank of America building, including CitiBank, to the north. Looking to the east from the building, views of Hermosa Avenue and adjacent retail and restaurant buildings are prominent. Southward views from the building include the adjacent parking lot and additional businesses. To the west, the building abuts a liquor store on Pier Plaza and has no view from the inside of the building. Due to the orientation of the building along Pier Plaza, the Project site is obscured from view from the interior of building and has no connection with the Project site in terms of surrounding environmental or overall historic context.

The building at 90 Pier Avenue has been designated as a potential historic landmark. It is currently occupied by Bank of America.

- *Surf City Hostel* (formerly Hermosa Hotel) is located 100 feet south of the Project site directly across Pier Plaza at 20-26 Pier Avenue. Looking to the north from the hostel is a view of Pier Plaza and the Project site, including the Mermaid Lounge parking lot and existing one- to two-story buildings along Pier Plaza. To the east, views from the Surf City Hostel overlook the buildings along Pier Plaza including Lighthouse Café and the Greenbelt Restaurant. To the south, the hostel overlooks a surface parking lot as well as local businesses, including the two-story Brother Burritos building and the Sea Sprite Motel and Apartments. Looking west, views include a small adjacent parking lot, Silvio's Brazilian BBQ restaurant, and the covered rooftop of

The Surf City Hostel, formerly Hermosa Hotel, is located on Pier Plaza directly across from the Project site.

Hennessey's Tavern. From the upper floor of the Hostel, Hermosa Beach, the Pier, and the Pacific Ocean can be seen.

- The *Community Center* is designated as a locally significant landmark by the City and is listed in the California Register. The Community Center is approximately 0.4 miles east of the Project site. Therefore, the Project site cannot be seen from the building and has no connection with the Project site in terms of surrounding environmental or overall historic context.

Hermosa Beach Community Center offers space for use by the community. The Center hosts meetings, dance lessons, classes, and more.

- The *Clark Building* is listed as a historical resource on the California Register; however, it is not designated as a locally significant landmark by the City. The Clark Building is also located approximately 0.4 miles east of the Project site. Therefore, the Project site cannot be seen from the building and has no connection with the Project site in terms of surrounding environmental or overall historic context.

The Clark Building is a historical resource listed on the California Register. The Clark Building is a multi-purpose hall that has a maximum capacity of 240 and is currently used for community classes, meetings, and small gatherings.

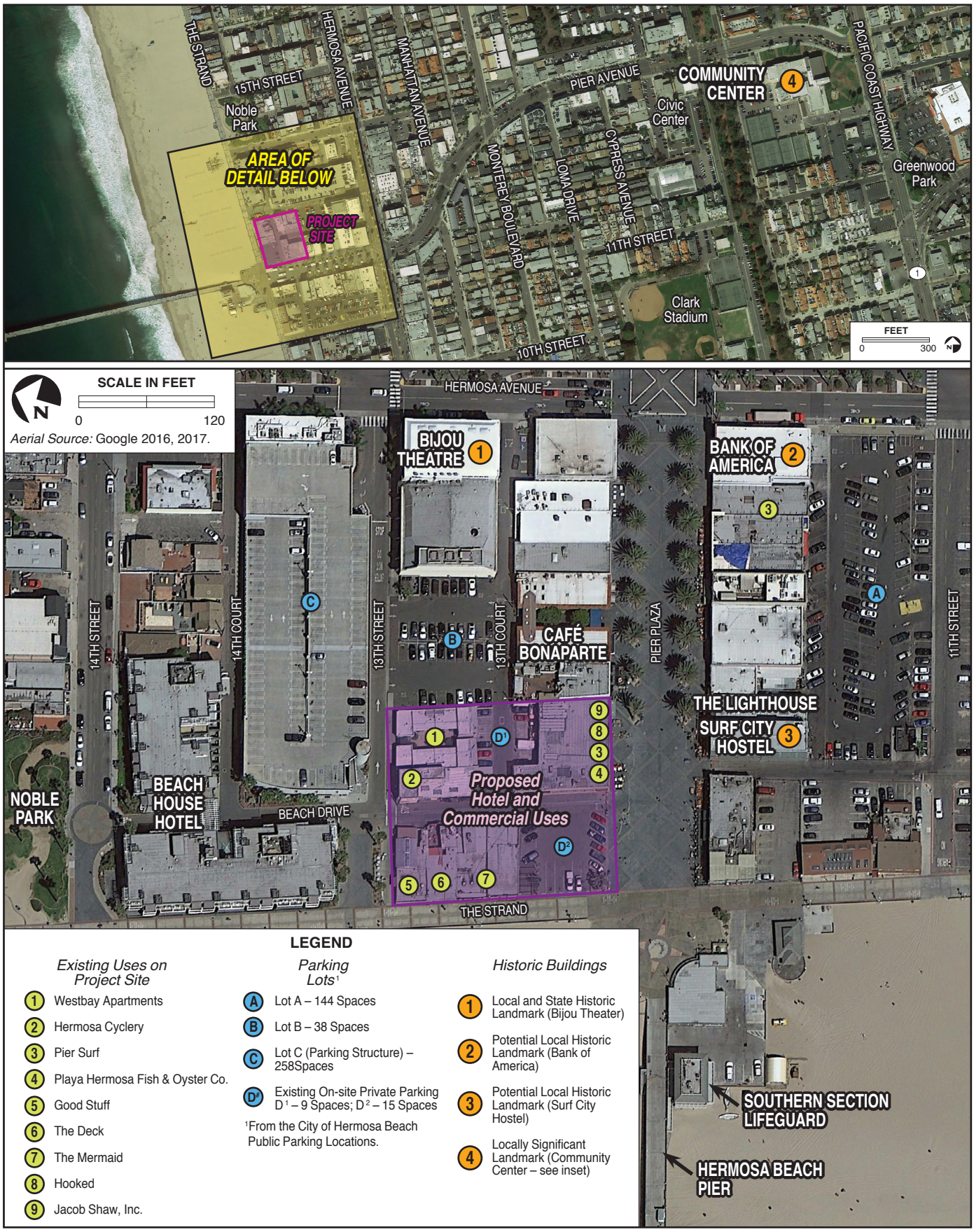
Architectural Resources within the Project Site

To document and assess the current conditions of older buildings and structures within the Project site, Kaplan Chen Kaplan conducted a Historic Resources Evaluation in December 2016. Kaplan Chen Kaplan (2017) obtained property-specific information from historical archives gathered at the Los Angeles Central Library, City directories, Los Angeles County Assessor Data, historic maps including Sanborn Fire Insurance maps, historic aerials, and building permit records maintained by the City. The information from these sources was used to establish construction dates, construction materials, and dimensions of buildings present on the site, ownership, names of architects and/or contractors, and alterations that occurred through time.

Based on data gathered from the architectural survey and archival research, California Register and City Landmark Criteria were used to assess the potential significance of the historic architectural resources at or in the vicinity of the Project site.

As previously described, Applied Earthworks, a qualified cultural resources firm, completed an independent peer review of the Applicant-prepared Historical Resources Evaluation, which is incorporated in the Cultural Resource Assessment Report (see Appendix E). To identify known historic architectural resources at or within the vicinity of the Project site, Applied Earthworks conducted a California Historical Resources Information System (CHRIS) record search in October 2016 at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. Additional sources consulted as part of the records search include: NRHP, California Register, California Historical Landmarks (CHL), California Points of Historical Interest (CPHI), City Historical Landmarks, City Historic Resources Map, and OHP Historic Property Data File (HPD) for Los Angeles County.

According to existing Sanborn Fire Insurance maps, the properties adjacent to the east of The Strand prepared for development, with the area divided into blocks and subdivided into smaller parcels. By 1927 most of the parcels along Pier Avenue had been developed. All of the parcels on The Strand between 13th Street and Pier Avenue were developed and included a bath house, restaurants, grocery store, and fishmonger. The building at 19 Pier Avenue – located on the Project site – contained a restaurant, beauty shop, grocery store, confectionary shop (i.e., candy shop), and a vacant storefront. Just south of the Project site, directly across Pier Plaza was the Pier Hotel (see Appendix E). Following their initial development, most of the buildings near The Strand have hosted commercial businesses including restaurants, bars, grocery stores, and retail spaces, with very few residential apartment units. Most of the original buildings have been demolished and reconfigured; however, the basic configuration of the buildings on The Strand between 13th Street and Pier Avenue has remained the same since the 1960s (Kaplan Chen Kaplan 2017).



amec foster wheeler

Historic Buildings in the Surrounding Vicinity

FIGURE 3.4-1

The record search for the Historic Resources Evaluation identified no known historic architectural resources at the Project site. Results of the architectural survey and archival research indicate that the Project site contains seven buildings and a surface parking lot that were constructed prior to 1953 (Kaplan Chen Kaplan 2017). Therefore, the buildings exceed the 50-year threshold for consideration as potential historic resources for the purposes of CEQA as well as other Federal, State, and local regulations and policies. The buildings and surface parking lot are located on six individual properties that include: 20 13th Street, 30 and 32 13th Street, 1250 The Strand, 1272 The Strand, 11 Pier Avenue, and 19 Pier Avenue. Each of the buildings on these properties is described in further detail below and assessed in terms of historic significance.

20 13th Street (Hermosa Cyclery)

The existing building located at 20 13th Street is a two-story vernacular-style[1] building, which was originally constructed as a one-story building in 1941 with a subsequent one-story add-on. The building appears to have had an original brick façade with trim elements; however, it has been stuccoed over with a rough texture finish. Additionally, the window assemblies have been replaced following the original construction of the building. The ground level of the building supports commercial uses such as retail, and the second floor supports more private spaces such as offices or residential uses.

The Hermosa Cyclery is located on the corner of 13th Street and Beach Drive. This two-story building would be demolished as a part of the proposed construction of the mixed-use hotel. Additionally, Beach Drive would be vacated as a part of the proposed Project.

Two ground level entrances to the building are located along 13th Street on the northern façade of the building. The exterior of the ground level floor is dominated by two large plate glass display windows that are located on either side of the centered entry door. The building is angled at the corner by the intersection of 13th Street and Beach Drive. The western façade of the building along Beach Drive is slightly shorter in length and features a single plate glass display window. The remainder of the frontage consists of a uniform stucco wall.

[1] Vernacular-style buildings are designed based on local needs, availability of construction materials and reflecting local traditions.

The second floor of the building is stuccoed with a rough texture finish, similar to the ground level. The northern façade of the second floor along 13th Street includes two sliding windows. Two other windows included in the original addition have been enclosed and stuccoed over. There is also a window on the second level of the angled side and two windows along the Beach Drive side.

The building at 20 13th Street is not eligible under any of the following California Register Criteria:

- **Criterion 1 or the City Landmark Criterion A.** The existing building does not exemplify any special attributes related to the City and there is no record of any historic events associated with the building.
- **California Criterion 2 or the City Landmark Criterion B**. There are no historic persons associated with the building.
- **California Register Criterion 3 or the City Landmark Criterion C.** The building does not represent a significant architectural style and is an unremarkable example of vernacular architecture within the City.
- **California Register Criterion 4 or the City Landmark Criterion D.** The building is unlikely to yield historic information in the future.
- **City Landmark Criterion E.** The building does not have any unique or singular physical characteristics that elevate them above other buildings in the City.

30 and 32 13th Street (West Bay Apartments)

The West Bay Apartments include eight single story studio apartments located on the northern edge of the proposed Project site facing 13th Street.

This property, which is located immediately adjacent to the east of the Hermosa Cyclery, contains two identical apartment buildings with a shared courtyard. Each building is a one-story vernacular-style building, with International-style influences, originally constructed in 1948. The northern façade of each building along 13th Street is divided into three distinct modules (i.e., segments) with a center module clad in painted vertical wood and the other modules consisting of painted brick. The models on either side of the painted vertical wood paneling are characterized by a set of horizontal tripartite windows with a slight flat canopy projecting out above. Entry

doors into the individual studio apartments are from the common shared courtyard area. Entry into the courtyard from the street is from the area between the two buildings, which is gated with a simple metal gate with vertical slats.

The two building at 30 and 32 13th Street are not eligible under any of the following California Register Criteria:

- **Criterion 1 or the City Landmark Criterion A.** The buildings at 30 and 32 13th Street served as residences since 1948 but do not exemplify any special attributes related to the City. No historic events are associated with either of the buildings.
- **California Criterion 2 or the City Landmark Criterion B**. There are no historic persons or residents associated with either of the buildings.
- **California Register Criterion 3 or the City Landmark Criterion C.** The buildings do not represent a significant architectural style and are an unremarkable example of vernacular architecture within the City.
- **California Register Criterion 4 or the City Landmark Criterion D.** The buildings are unlikely to yield historic information in the future.
- **City Landmark Criterion E.** The buildings do not have any unique or singular physical characteristics that elevate them above other buildings in the City.

1286 The Strand (Good Stuff)

This property at 1286 The Strand contains a vernacular-style one-story commercial building constructed in 1922. The building is an unremarkable stucco-clad building, simple in form and styling. Based on Los Angeles County Assessor records, it appears that the building was remodeled in 1955, with a number of additional modifications over the following decades. A large area for signage defines the upper horizontal band of the building and below it is a series of windows and entry doors that are slightly recessed and separated by vertical columns. None of the existing windows along either frontage of the building are original. The building is of no specific architectural style and there are no historic character defining features.

Good Stuff is located on the corner of 13th Street and The Strand in the northwest corner of the Project site. Patio seating is situated immediately adjacent to the north of the building (out of picture to the left) associated with the restaurant.

The building at 1286 The Strand is not eligible under any of the following California Register Criteria:

- **Criterion 1 or the City Landmark Criterion A.** The building does not exemplify any special attributes related to the City. No historic events are associated with the building.
- **California Criterion 2 or the City Landmark Criterion B**. There are no historic persons associated with the building.
- **California Register Criterion 3 or the City Landmark Criterion C.** The building does not represent a significant architectural style and is an unremarkable example of vernacular architecture within the City.
- **California Register Criterion 4 or the City Landmark Criterion D.** The building is unlikely to yield historic information in the future.
- **City Landmark Criterion E.** The building does not have any unique or singular physical characteristics that elevate it above other buildings in the City.

1272 The Strand (The Deck)

The building at 1250 The Strand is a vernacular-style one-story commercial building constructed in 1927. The western façade (i.e., front of the building) is divided into a horizontal upper level that contains signage for the building. This half of the building's western façade, which is a recent addition constructed by the most recent tenant, has a different finish that mimics weathered wood siding and contains the business name. Below the signage is a horizontal band of windows on each side of centered entry doors. None of the windows or doors are original; they are of a more modern style than that from 1927 or 1935. This building is not characteristic of a particular architectural style and there are there are no historical character-defining features.

The Deck, located between Good Stuff and the Mermaid Restaurant, is a one-story restaurant and bar located along The Strand facing The Strand and the Pacific Ocean.

The building at 1250 The Strand is not eligible under any of the following California Register Criteria:

- **Criterion 1 or the City Landmark Criterion A.** The building does not exemplify any special attributes related to the City. No historic events are associated with the building.

- **California Criterion 2 or the City Landmark Criterion B**. There are no historic persons associated with the building.
- **California Register Criterion 3 or the City Landmark Criterion C.** The building does not represent a significant architectural style and is an unremarkable example of vernacular architecture within the City.
- **California Register Criterion 4 or the City Landmark Criterion D.** The building is unlikely to yield historic information in the future.
- **City Landmark Criterion E.** The building does not have any unique or singular physical characteristics that elevate it above other buildings in the City.

1250 The Strand and 11 Pier Avenue (Mermaid Restaurant and Surface Parking Lot)

These properties contain a building as well as an existing paved asphalt surface parking lot. The building is a vernacular-style one-story commercial structure constructed in 1948. The lower third of the building's frontages are clad in brick with vertical wood siding above. Both of these materials were commonly used for vernacular buildings in the mid-20th century. The brick is not painted but the wood is painted a dark matte black and the windows and doors are tinted dark. The signage on this building is in the form of a canopy above each window, the width of which is dictated by the width of the window or door below. There is a building permit for construction of the canopies in 1962. A trellis is attached to the south side of the building in its parking lot. Historical photographs and maps of the area indicate that the paved asphalt surface parking lot was constructed between 1946 and 1953.

The Mermaid Restaurant is located along The Strand and looks out over the Pacific Ocean. The building is located immediately adjacent to an asphalt paved surface parking lot that provides valet parking service for the restaurant.

The building and surface parking lot at 1250 The Strand and 11 Pier Avenue are not eligible under any of the following California Register Criteria:

- **Criterion 1 or the City Landmark Criterion A.** Neither the building nor the parking lot exemplifies any special attributes related to the City. No historic events are associated with the building or the parking lot.

- **California Criterion 2 or the City Landmark Criterion B**. There are no historic persons associated with the building or the parking lot.
- **California Register Criterion 3 or the City Landmark Criterion C.** Neither the building nor the parking lot represents a significant architectural style and is an unremarkable example of vernacular architecture within the City.
- **California Register Criterion 4 or the City Landmark Criterion D.** Neither the building nor the parking lot is unlikely to yield historic information in the future.
- **City Landmark Criterion E.** Neither the building nor the parking lot has any unique or singular physical characteristics that elevate it above other buildings in the City.

19 Pier Avenue (Playa Hermosa Fish & Oyster Co., Pier Surf, Hooked, Jacob Shaw, Inc.)

The building at 19 Pier Avenue is a single-story commercial block constructed in 1922. The building is characterized by masonry construction with a brick exterior. The building features a parapet that is highest at the center of the Pier Avenue façade and the parapet slightly steps down twice on each side. A decorative element of the original building design is the band of brickwork that runs below the parapet on the south and west frontages. The band is a simple design created by a row of headers (short side of the horizontally laid brick), a row of stretchers (long side of the horizontally laid brick) with two alternating colors, a row of stretchers of a single color, another row of stretchers of two alternating colors, and a row of headers. The use of alternating headers and stretchers of different colors is employed at each corner of the building. The building has undergone numerous alterations including tenant improvements over the decades, and none of the original storefronts remain. There is a painting located on the west elevation of the building. Although it looks like a mural, the painting is on a frame that is attached to the building and does not appear integral to the building (Kaplan Chen Kaplan 2017). As such the painting is not integral to the building and could be relocated and preserved as necessary.

Playa Hermosa Fish & Oyster Co. (left), which recently replaced Killer Shrimp, currently occupies 19 Pier Avenue along with a number of additional store fronts including Pier Surf, Hooked, and Jacob Shaw, Inc. (right). This building is characterized by its masonry construction and decorative brickwork.

The most recent improvements to the building occurred in January 2017, when Playa Hermosa Fish & Oyster Co. replaced Killer Shrimp. These improvements, new signage, new painting, etc. are characteristic of the many tenant improvements over the decades, which largely include remodels of the display area and storefronts.

The building at 19 Pier Avenue is not eligible under any of the following California Register Criteria:

- **Criterion 1 or the City Landmark Criterion A.** The building does not exemplify any special attributes related to the City. No historic events are associated with the building.
- **California Criterion 2 or the City Landmark Criterion B**. There are no historic persons associated with the building.
- **California Register Criterion 3 or the City Landmark Criterion C.** The building does not represent a significant architectural style and is an unremarkable example of vernacular architecture within the City.
- **California Register Criterion 4 or the City Landmark Criterion D.** The building is unlikely to yield historic information in the future.
- **City Landmark Criterion E.** The building does not have any unique or singular physical characteristics that elevate it above other buildings in the City.

Archaeological Resources within the Project Site

Archaeological resources represent and document activities, accomplishments, and traditions of past cultures and link current and former inhabitants of an area. Archaeological resources may date from the historic or prehistoric period, and include deposits of physical remains of the past (e.g., artifacts, manufacturing debris, dietary refuse, and the soils in which they are contained) or areas where prehistoric or historic activity measurably altered the earth.

A CHRIS record search was conducted at the SCCIC in October 2016 to identify known archaeological resources and prior studies within 0.5 miles of the Project site. Additional sources consulted during the SCCIC records search include: NRHP, CPHI, CHL, California Register, OHP HPD, and Archaeological Determination of Eligibility (ADOE). Results of the record search revealed no archaeological resources – including historic and prehistoric archaeological resources – have been recorded within the Project site or within a 0.5-mile radius (see Appendix E).

Although the record search results indicate no archaeological resources have been recorded within a 0.5-mile radius of the Project site, a lack of known archaeological sites is not a reliable

indicator of archaeological sensitivity. In highly developed urban settings, the original ground surface is typically not available for inspection and prehistoric and historic archaeological deposits may be preserved at depth under existing buildings and structures. To determine the archaeological sensitivity of the Project site, Applied Earthworks created a landscape model that focused on landform type and age, hydrology, and depositional setting. The model was primarily based on geological maps and literature of the Los Angeles Basin, soil maps in the vicinity of the City, as well as topographic data (see Appendix E). Historical maps also were reviewed to determine the nature of the surface prior to development, to identify potential sources of water, to examine man-made impact to the extant surface, and delineate the extent of Holocene sediments found within the Project area. Prehistoric archaeological sensitivity was based on proximity to known cultural and natural resources, depositional setting, potential for intact Holocene sediments, and modern disturbance.

Prehistoric habitation sites within the vicinity of the Project site would have likely been located near Ballona Lagoon or south near the canyon where fresh water is more available. In contrast, smaller gathering areas are expected to be found in the coastal dune habitats that existed in the Project area prehistorically. This research suggests that the Project area has low to moderate sensitivity for prehistoric resources. Nevertheless, since the depth of Holocene sediments is unknown in this area, if native, undisturbed sediments are found below historic period deposits, a low potential exists for encountering buried prehistoric sites.

The archaeological sensitivity analysis also concluded that the southwest corner of the Project site, which currently is being used as a parking lot, exhibits a moderate to high potential for containing intact buried prehistoric archaeological deposits (see Appendix E). For the past 60 to 70 years, this area has contained a parking lot that appears to have undergone little to no modification. Undisturbed subsurface sediments underlying the parking lot have the potential to contain buried prehistoric cultural deposits. As such, it is possible that the parking lot is capping historical deposits related to the original building that was located at this site between the 1920s and 1950s. At the time the building was demolished, limited regulation allowed developers to bury structural refuse and leave subsurface portions of foundations intact. In addition, construction methods at the time allowed for only limited excavation to provide a stable surface for the parking. The severe cracking and poor shape of the parking lot surface seen today may be an indication that buried materials underlying the pavement are settling as they decompose. While there is a moderate to high possibility of finding buried material associated with the former building, no historical map or aerial photograph was found that could provide enough detail to show the exact location of features within the lots such as privies, basements, or outbuildings.

Paleontological Resources within the Project Site

The Project site is located within the Los Angeles Basin, a lowland plain at the northern end of the Peninsular Ranges geomorphic province of California (Yerkes and Campbell 2005). The Los Angeles Basin is underlain by a structural depression that includes more than 20,000 feet of accumulated terrestrial and marine sediments overlying Mesozoic metamorphic and plutonic igneous basement rocks (McCulloh and Beyer 2004; Norris and Webb 1976; Yerkes et al. 1965). In the vicinity of the Project area, the Los Angeles Basin is predominately underlain by Miocene deep marine deposits; Pleistocene marine terrace deposits; and Quaternary non-marine terrace, alluvial fan, floodplain, and Aeolian and beach sand deposits (Yerkes and Campbell 2005).

According to geologic mapping (Dibblee et al. 1999), the Project site is directly underlain by unconsolidated fine-grained dune and beach sand deposited during the Holocene. Paleontological resources have not been previously recorded within the Holocene dune and beach sand because deposits such as these typically have a low potential for fossilization of biologic material due to their young age. However, according to McLeod (2016) and Dibblee et al. (1999), these surficial Holocene deposits overlie older Pleistocene sedimentary deposits that may be sensitive for paleontological resources (Jacobs 2005; Woodring et al. 1946). The exact depth where the Pleistocene sedimentary deposits contact the overlying Holocene surficial dune and beach sand is unknown, but may be on the order of tens of feet below ground surface (ft bgs) (Dibblee et al. 1999). According to the Hydrogeologic Evaluation for the Project, the contact between Holocene and Pleistocene sedimentary deposits is described as gradational within the vicinity of the Project site (Thomas Harder & Co. 2016). However, the geotechnical report prepared for the proposed Project only describes the three soils borings at the Project site as Beach Sand down to a maximum depth of 50 feet and does not differentiate between Holocene and Pleistocene sediments (Byer Geotechnical, Inc. 2015).

A paleontological locality record search was conducted for the project at the Los Angeles County Museum of Natural History (LACM) (see Appendix E). The record search was supplemented by a review of the University of California Museum of Paleontology's (UCMP's) online database, which contains paleontological records for Los Angeles County. The results of the LACM and UCMP record search indicate that there are no previously recorded vertebrate localities within the Holocene dune and beach sand mapped at the surface of the Project area; however, several vertebrate localities were identified nearby from within older Quaternary sedimentary units, which are similar to the Pleistocene sedimentary deposits that underlie the Project area at depth (McLeod 2016; UCMP 2016).

LACM museum collections identify three vertebrate localities that were recorded in the vicinity of the Project area from within Pleistocene sedimentary deposits, including:

- **LACM 4444.** Located over 4 miles to the east of the Project site near Crenshaw Boulevard and 190th Street. Fossil specimens of horse (*Equus* sp.) and whale (Cetacea) recovered form a depth of 15 ft bgs.
- **LACM 1839.** Located over 5.5 miles to the southeast of the Project site near Crenshaw Boulevard and 236th Street. Specimen of horse, recovered from 35 ft bgs.
- **LACM 2035.** Located over 4 miles to the northeast of the Project site near Prairie Avenue and 139th Street. Fossil specimen of a mammoth (*Mammuthus* sp.) recovered from an unreported depth (McLeod 2016).

The UCMP online database (2016) contains records for at least 10 additional vertebrate fossil localities within other nearby older Quaternary sedimentary units (i.e., at a similar distance to the three localities described previously), including fossil specimens of a horse, lion, camel, saber-tooth cat, rodent, rabbit, sloth, bison, dire wolf, and bird.

Native American Outreach and Tribal Cultural Resources

As part of the cultural resource analysis for the proposed Project, Applied Earthworks contacted the Native American Heritage Commission (NAHC) in Sacramento on September 23, 2016, to request a review of their Sacred Lands Inventory File (SLF), which includes the Project site (see Appendix E). The NAHC responded on September 27, 2016 stating that the SLF search was completed with negative results, meaning that there are no previously identified sacred lands within the Project site. The NAHC requested that Native American individuals and organizations be contacted to collect information and/or hear concerns regarding cultural resource issues related to the proposed Project. A letter describing the Project and requesting information regarding the potential for cultural resources was sent on October 26, 2016. As described in further detail below, separate from the individual Native American outreach efforts, the City offered the Gabrieleño Band of Mission Indians-Kizh Nation and the Soboba Band of Luiseño Indians the opportunity for in-person consultation regarding possible significant effects of the proposed Project on tribal cultural resources in compliance with Assembly Bill (AB) 52 (Public Resources Code Section 21080.3.1).

Of the five groups and/or individuals contacted by Applied Earthworks, four responses were received. Mr. Andrew Salas of Gabrieleño Band of Mission Indians-Kizh Nation responded via email and noted that the Project lies within an area of Gabrieleño villages, such as *Engnovangna*

and *Waachnga*. Mr. Salas requested that a tribal monitor from the Gabrieleño Band of Mission Indians-Kizh Nation be present during ground disturbing construction work. Mr. Anthony Morales of the Gabrieleño/Tongva San Gabriel Band of Mission Indians stated that given the Project location along the coast, the area is sensitive for Native American resources. Mr. Morales recommended that an archaeological monitor and a Native American monitor from the Gabrieleño/Tongva San Gabriel Band of Mission Indians be present during construction activities. Ms. Sandonne Goad of the Gabrieleño/Tongva Nation stated that she would forward the information request to Mr. Sam Dunlap, who was the Cultural Director for the tribe; no response was received from Mr. Dunlap. Mr. Robert F. Dorame of the Gabrieleño Tongva Indians of California noted that he had completed a survey in the Hermosa Beach area and had recorded a large site in the location of a proposed desalination plant in El Segundo. He noted that the entire area is considered culturally sensitive due to its proximity to Redondo Beach, which had been a salt gathering and trading site for the Gabrieleño Tongva Indians. The information and/or concerns received from Native American individuals and organizations regarding cultural resource issues related to the proposed Project have been included in the EIR cultural resource analysis and mitigation measures. The Native American individuals and organizations with interest in potential cultural resources in Hermosa Beach will also be contacted during the 60-day public review period and notified that the Draft EIR is available for review.

In addition to and separate from the individual Native American outreach efforts requested by the NAHC, the City offered the Gabrieleño Band of Mission Indians-Kizh Nation and the Soboba Band of Luiseño Indians the opportunity for in-person consultation regarding possible significant effects of the proposed Project on tribal cultural resources in compliance with Assembly Bill (AB) 52 (Public Resources Code Section 21080.3.1). The City distributed a letter notifying the tribes of the proposed Project on December 8, 2016 (see Appendix E). The City has received no response from recipients to date and there has been no request for consultation as part of the AB 52 outreach process. Nevertheless, the analysis and mitigation measures discussed below address the concerns raised by the Gabrieleño Band of Mission Indians-Kizh Nation.

3.4.2 Regulatory Framework

Federal Regulations

National Historic Preservation Act (1966)

The NRHP was established by the National Historic Preservation Act of 1966 (NHPA) to help identify and protect properties that are significant cultural resources at the Federal, State, and/or local levels. Four criteria have been established to determine if a resource is significant to

American history, architecture, archaeology, engineering, or culture and should be listed in the National Register. These criteria include:

1) It is associated with events that have made a significant contribution to the broad patterns of our history;

2) It is associated with the lives of persons significant in our past;

3) It embodies the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;

4) It yields, or may be likely to yield, information important in prehistory or history.[2]

Districts, sites, buildings, structures, and objects of potential significance that are at least 50 years in age must meet one or more of the above criteria to be eligible for listing in the NRHP.

The proposed Project does not include any Federal lands. No Federal permits or authorizations are required for its implementation, and Federal funds will not be used. Therefore, the proposed Project is not considered a Federal undertaking for the purposes of the NEPA or a Proposed Action under the National Environmental Policy Act (NEPA), and no Federal laws or regulations governing cultural resources apply.

State Regulations

California Register

CEQA Section 15064.5(a)(3) states that a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register (Public Resources Code Section 5024.1; Title 14, CCR, Section 4852). Criteria of eligibility for the California Register include the following:

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2) Is associated with the lives of persons important in our past;

[2] *Guidelines for Completing National Register Forms*, National Register Bulletin 16, U.S. Department of Interior, National Park Service, September 30, 1986. This bulletin contains technical information on comprehensive planning, survey of cultural resources and registration in the NRHP.

3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4) Has yielded, or may be likely to yield, information important in prehistory or history.

Cultural resources that meet one or more of these criteria are defined as "historical resources" under CEQA (OHP 2005). Resources included in a local register of historical resources (pursuant to Public Resources Code Section 5020.1[k]), or identified as significant in an historical resources survey (meeting the criteria in Public Resources Code Section 5024.1[g]), also are considered "historical resources" for the purposes of CEQA. The California Register automatically includes "all properties formally determined eligible for, or listed in, the NRHP," and certain specific CHL and CPHI that have been evaluated and been recommended for inclusion on the California Register. Unless a resource listed in a survey has been demolished, lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the California Register. The fact that a resource is not listed in, or determined to be eligible for listing in the California Register, not included in a local register of historical resources, or identified in an historical resources survey, does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1.

Assembly Bill 52

Signed into law in September 2014, AB 52 of the Public Resources Code created a new class of resources – tribal cultural resources – for consideration under CEQA. Tribal cultural resources may include site, features, places, cultural landscapes, sacred places, or objects with cultural value to a California Native American tribe. AB 52 requires that the CEQA lead agency consult in good faith with California Native American tribes requesting consultation regarding projects that may impact tribal cultural resources. Under AB 52, a project with a potential to impact tribal cultural resources such that it would cause a substantial adverse change constitutes a significant effect on the environment unless mitigation reduces such effects to a less than significant level.

Codes Governing Human Remains

The disposition of human remains is governed by California Health and Safety Code Section 7050.5 and of the Public Resources Code Sections 5097.94 and 5097.98, and falls within the jurisdiction of the NAHC. If human remains are discovered, the County Coroner must be notified immediately and there should be no further disturbance to the site where the remains were found.

If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native Americans so they can inspect the burial site and make recommendations for treatment or disposal.

Local Regulations

PLAN Hermosa

The City's General Plan Update (PLAN Hermosa) has several policies regarding cultural and architectural heritage (City of Hermosa Beach 2017a).

PLAN Hermosa LAND USE + DESIGN ELEMENT

Goal 10. A strong sense of cultural and architectural heritage.

Policy 10.1. **Historic landmarks and districts.** Encourage the voluntary designation of potentially historic resources as landmarks or historic districts.

Policy 10.2. Protect designated landmarks. Continue to use the Certification of Appropriateness process for reviewing applications to demolish or alter designated landmarks.

Policy 10.5. Adaptive reuse and sustainable development. Promote historic preservation as sustainable development and encourage adaptive reuse of historic or older properties.

Policy 10.9. Salvage architectural features or materials. Encourage the preservation or reuse of historic architectural features on site or within the community.

Policy 10.10. Archaeological and paleontological resources. Recognize the prehistory and history of the city and strive to identify, protect, and preserve archaeological and paleontological resources.

City of Hermosa Beach Historic Resources Preservation Ordinance

The City's Historic Resources Preservation Ordinance in HMBC Chapter 17.53 is intended to identify and ensure the long-term preservation and use of historic resources, such as buildings and structures, sites and places within the City that reflect special elements of the City's architectural, artistic, cultural, historical, political, and social heritage.

In order to be eligible for consideration as a landmark, an historic resource must be at least 50 years old; with the exception that an historic resource of at least 30 years old may be eligible if the Council determines that the resource is exceptional, or that it is threatened by demolition, removal, relocation, or inappropriate alteration.

The resource must also meet one or more of the following criteria:

1) It exemplifies or reflects special elements of the City's cultural, social, economic, political, aesthetic, engineering, or architectural history; or

2) It is identified with persons or events significant in local, state, or national history; or

3) It embodies distinctive characteristics of a style, type, period, or method of construction, or is a valuable example of the use of indigenous materials or craftsmanship; or

4) It is representative of the notable work of a builder, designer, or architect; or

5) Its unique location or singular physical characteristic(s) represents an established and familiar visual feature or landmark of a neighborhood, community, or the City.

Neither PLAN Hermosa nor the HBMC set forth specific mitigation requirements for paleontological resources.

3.4.3 Impact Assessment and Methodology

Thresholds for Determining Significance

The following thresholds of significance for cultural resources are based on Appendix G of the 2018 CEQA Guidelines. For the purposes of the Environmental Impact Report (EIR), the proposed Project would have a significant adverse impact on cultural resources if:

a) The Project would cause a substantial adverse change in the significance of an historical resource as defined in CEQA Section 15064.5;
b) The Project would cause a substantial adverse change in the significance of a unique archaeological resource as defined in CEQA Section 15064.5;
c) The Project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature; and/or
d) The Project would disturb any human remains, including those interred outside of dedicated cemeteries.

In addition, the proposed Project would have a significant adverse impact on tribal cultural resources if:

a) The Project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or
    ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Historical Resources

The significance of a historical resource, and consequently the significance of any impacts, is determined by whether or not that resource meets the significance criteria outlined in the State CEQA Guidelines, as described above. A project is judged to have a significant effect on the environment if it may cause a substantial adverse change in the characteristics of an historical resource that convey its significance or justify its eligibility for inclusion in the California Register or a local register, either through demolition, destruction, relocation, alteration, or other means (CEQA Section 15064.5[b]). Direct impacts may occur by:

1) Physically damaging, destroying, or altering all or part of the resource;
2) Altering characteristics of the surrounding environment that contribute to the resource's significance;
3) Neglecting the resource to the extent that it deteriorates or is destroyed; or
4) The incidental discovery of cultural resources without proper notification.

Archaeological Resources

Guidelines for mitigating impacts to archaeological resources are provided in CEQA Section 15126.4. According to the State CEQA Guidelines, public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered for a project involving such an archaeological site:

1) Preservation in place (avoidance) is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.
2) Preservation in place may be accomplished by, but is not limited to, the following:
    - Planning construction to avoid archaeological sites;
    - Incorporation of sites within parks, greenspace, or other open space;
    - Covering the archaeological sites with a layer of chemically stable soil so that ground-disturbing activities will not impact the underlying native soils;
    - Deeding the site into a permanent conservation easement.
3) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code.
4) Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented and that the studies are deposited with the California Historical Resources Regional Information Center.

In general, the implementation of such measures will reduce impacts on archaeological resources to less than significant levels.

Paleontological Resources

According to CEQA, the threshold of significance for impacts to paleontological resources is reached when a project is determined to disturb or destroy scientifically important fossil remains, as defined by the Society of Vertebrate Paleontology (SVP) (2010). Significant paleontological resources are defined as "identifiable" vertebrate fossils, uncommon invertebrate, plant, and trace fossils that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, or biochronological data. These data are important because they are used to examine evolutionary relationships, provide insight on the development of and interaction between biological communities, establish time scales for geologic studies, and for many other scientific purposes (Scott and Springer 2003; SVP 2010).

Tribal Cultural Resources

CEQA provides recommendations for mitigating impacts to tribal cultural resources in CEQA Section 21080.4.3 of the Public Resource Code. According to these guidelines, public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in Public Resource Code Section 21080.3.2, the following examples of mitigation measures, if feasible, may be considered to avoid or minimize the significant adverse impacts:

1) Avoidance and preservation of the resources in place, including, but not limited to:
    a) Planning and construction to avoid the resource and protect the cultural and natural context; and
    b) Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

    a) Protecting the cultural character and integrity of the resource;
    b) Protecting the traditional use of the resource; and
    c) Protecting the confidentiality of the resource.

3) Permanent conservation easements of other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

4) Protecting the resource.

Methodology

The impact analysis for cultural resources is based on a review of information and analysis available in the Applicant-prepared Historic Resource Evaluation (Kaplan Chen Kaplan 2017), Cultural Resource Assessment Report prepared by Applied Earthworks (see Appendix E), PLAN Hermosa, and the Hermosa Beach Preservation Ordinance (Ord. 98-1186 Section 4) (1998). The architectural field survey and archival research conducted for the Historic Resources Evaluation involved the documentation and evaluation of the historic-period buildings and structures on the Project site for listing on the California Register and as a City of Hermosa Beach Historical Landmark. The architectural field survey included observations of the buildings on the Project

site field data collection, and photography. Other buildings and parcels on the block were also observed and adjacent blocks were given a reconnaissance level review. All of the field data and research data was analyzed by an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards for Architectural History. A qualified architect who meets the Secretary of the Interior's Professional Qualification Standards for Historic Architecture also reviewed the buildings. The Cultural Resources Assessment Report included a review of recent records searches performed for the Project site and immediate vicinity, archival research, and an archaeological sensitivity study. Finally, the archaeological sensitivity study assessed the Project site for the potential to encountered buried prehistoric and historic archaeological deposits during Project implementation.

The impact analysis for paleontological resources is based on a review of information and analysis available in the Paleontological Resource Assessment Memorandum prepared for the proposed Project (see Appendix E).

The impact analysis for tribal cultural resources is based on information provided during outreach with relevant Native American tribes, the findings of the Cultural Resources Assessment (see Appendix E) related to buried archaeological resources, the Project site's location relative to known tribal activities in the vicinity, site-specific geologic and topographic conditions, and the areal extent and depth of the Project's subsurface excavation.

3.4.4 Project Impacts and Mitigation Measures

Impact Description

Would the project cause a substantial adverse change in the significance of an historical resource as defined in CEQA Section 15064.5?

CUL-1 Construction of the proposed mixed-use hotel – including the demolition of existing buildings on the Project site – would not result in a substantial adverse change in the integrity of a historical resource on the Project site or in the vicinity of the Project site. Therefore, impacts would be *less than significant.*

The proposed Project would involve the demolition of seven buildings, a surface parking lot, and two City rights-of-way to construct a three-story mixed-use hotel with a 27-foot deep basement. As described in Section 3.4.1, *Existing Setting*, all seven buildings and the surface parking lot located within the Project site have been identified as ineligible for listing as historical resources under the criteria of the California Register. Additionally, neither the existing buildings nor the

existing paved asphalt parking lot currently located on the Project site are designated as a local landmark under the City's Historic Resources Preservation Ordinance. Therefore, the demolition of these buildings and the parking lot would not result in a significant impact under the thresholds noted above and the criteria set forth in CEQA Section 15064.5(b)(3).

As described in Table 3.4-1, the Bijou Theater and the Bank of American Building are located within the Project vicinity, between 200 and 300 feet from the site. These buildings have previously been determined to be historical resources listed in the California Registered and/or designated for protection under the City's Historical Resources Preservation Ordinance. Additionally, the Surf City Hostel (20-26 Pier Avenue) has been identified as a potential landmark that warrants further study per Section 17.53.040(B) of the City's Historic Resources Preservation Ordinance (Planning Commission Resolution No. 98-65). The architectural survey performed for the proposed Project determined that there are no other significant or potentially significant historical resources buildings in the Project vicinity. Construction of the proposed mixed-use hotel would not result in groundborne vibration or noise levels that could damage any of the surrounding historic buildings (see Section 3.10, *Noise*). Neither the Bijou Theater nor the Bank of America Building are visible from the Project site. There is no visual connectivity or relationship between the proposed Project and the Bijou Theater or the Bank of America Building. As such, development of the proposed mixed-use hotel would not distract from or otherwise affect the historic character of these buildings. Surf City Hostel (formerly Hermosa Hotel) is located 100 feet south of the Project site directly across Pier Plaza from the Project site. Looking to the north from the hostel is a view of Pier Plaza and the Project site, including the Mermaid Lounge building and parking lot, as well as various one-story buildings that front Pier Plaza (e.g., Killer Shrimp). As such, development of the proposed Project would change the character of the area surrounding this building from that of single story older structures and an open parking lot to one of a three-story mixed-use hotel with ground level restaurants and retail uses; however, the proposed hotel's scale would be compatible with the other existing two- to three-story buildings including the Hennessey's Tavern located immediately to the south at the end of Pier Plaza and the Beach House located to the north on The Strand as well as the Bijou Theater, City-owned Parking Lot C, etc. Further, as described in PLAN Hermosa the Downtown District is one of the most intensively developed areas in the City and a primary social and commercial activity center in Hermosa Beach, serving as a centralized location for social gatherings and the recreational activities of residents and visitors. The proposed Project would be consistent with this use and character and would not adversely affect the surrounding environment or any of any other character defining features of the Surf City Hostel or any other potentially significant

historic properties in the vicinity of the Project site. As such, construction of the proposed three-story hotel would have a *less than significant* impact on historic structures.

Impact Description

Would the project cause a substantial adverse change in the significance of a unique archaeological resource as defined in CEQA Section 15064.5?

CUL-2 Ground disturbing activities associated with Project construction – particularly excavation of the subterranean basements – could uncover significant prehistoric or historic archaeological deposits that qualify as cultural resources as defined in CEQA Section 15064.5. Damage or destruction of such archaeological resources would be a potentially significant impact. However, this impact would be *less than significant with mitigation*.

No prehistoric or historic archaeological resources have been recorded within the Project site or within the immediate Project vicinity. The closest documented archaeological resources are located between 4 and 5 miles inland of the Project site. Geologic history and historical positions of the coastline suggest that a coastal dune habitat may have existed at the Project site during prehistoric times when Native Americans were present in the region. The Cultural Resources Assessment prepared for this EIR finds that there is a potential for buried archaeological resources to be present in native, undisturbed late Holocene Age unconsolidated Eolian Deposits that underlie the site at depth (see Appendix E). Despite the findings of the geotechnical study conducted for the proposed Project, the depth at which these native, undisturbed sediments might be encountered is unknown. The Project site's subsurface material is Beach Deposits (Thomas Harder & Co. 2016, Figure 4) to an unknown depth. If excavation for the Project encounters the deeper native, undisturbed sediments within the earlier Eolian Deposits, there would be the potential to encounter buried prehistoric archaeological resources at that depth. These conditions suggest a low to moderate potential exists to impact prehistoric archaeological resources if the project disturbs native, undisturbed Holocene Age unconsolidated Eolian Deposits during excavation.

The archaeological sensitivity analysis conducted by Applied Earthworks also determined that over the past 60 to 70 years, the southwest corner of the Project site has contained a surface parking lot that appears to have undergone little to no modification. It is possible that the parking lot is capping historic archaeological deposits related to the building that was present in this area between the 1920s and 1950s. As such, the southwest corner of the Project site exhibits a moderate to high potential for containing intact historic archaeological deposits. Consequently,

excavation of the proposed 27-foot-deep subterranean basement, as well as trenching of utilities associated with the mixed-use hotel, would have the potential to encounter buried archaeological deposits. Nevertheless, with the implementation of MM CUL-2a and -2b any inadvertently discovered resources would be protected and curated if encountered during Project construction. Accordingly, this impact would be considered *less than significant with mitigation*.

Mitigation Measures

MM CUL-2a ***Archaeological Monitoring Plan.*** *Prior to any excavation on the Project site, an Archaeological Monitoring Plan shall be developed by a City-approved qualified archaeologist for review and approval by the City. Archaeological monitoring during construction at the Project site shall be conducted by a City-approved qualified archaeological monitor(s), familiar with the types of prehistoric and historical archaeological resources that could be encountered within the Project site. The Archaeological Monitoring Plan shall identify specific locations on the Project site where an archaeological monitor(s) shall be required during ground disturbing activities. These locations shall include, but not be limited to, the area beneath the existing surface parking previously undisturbed soils beneath the foundations of the existing development on the Project site. Following the completion of excavation and trenching activities within these locations, the archaeological monitor(s) shall no longer be required at the Project site throughout the remainder of construction.*

This Archaeological Monitoring Plan shall also include a Treatment Plan that sets forth explicit criteria for evaluating the significance of resources inadvertently discovered during construction. In the event that an archaeological monitor(s) determines that the find may qualify for listing in the California Register, the Treatment Plan shall identify appropriate data recovery methods and procedures. The Treatment Plan shall also include requirements for a final technical report on all cultural resource studies and requirements for curation of artifacts and other recovered remains, if necessary.

MM CUL-2b ***Inadvertent Discoveries.*** *In the event of any inadvertent discovery of prehistoric or historic-period archaeological resources during construction, ground-disturbing activities in the immediate vicinity of the discovery, as determined by the City-approved qualified archaeological monitor(s), shall stop. Construction activities shall temporarily be redirected to areas located more than 50 feet from the find. The City-approved qualified archaeological monitor(s) shall evaluate the*

significance of the discovery based on the Treatment Plan prior to resuming any activities that could impact the discovery. In the event that prehistoric era archaeological resources are identified, the City-approved qualified archaeological monitor(s) shall immediately contact the appropriate contacts from the Native American tribes including the Gabrieleño Band of Mission Indians-Kizh Nation and the Soboba Band of Luiseño Indian Gabrieleño/Tongva Nation. Any required testing or data recovery shall be directed by a City-approved qualified professional archaeologist pursuant to the Treatment Plan. Work shall in the immediate vicinity of the find not resume until authorization is received from the City.

Plan Requirements and Timing. Prior to the issuance of any City permits related to on-site preparation, demolition, grading, or construction, an Archaeological Monitoring Plan shall be prepared for review and approval by the City. The plan shall identify areas within boundaries of the Project site – including off-site trenching areas – that shall require monitoring. The plan shall also identify the appropriate depth of archaeological monitoring activities. In the event that previously unknown archaeological resources are identified, the plan shall prescribe protocol for stopping work within the immediate vicinity, contacting the appropriate Native American tribes in the event of prehistoric discoveries, and documenting and/or recovering the artifact.

Monitoring. The City shall review and approve the Archaeological Monitoring Plan and City permit compliance staff shall ensure that a City-approved archaeological monitor(s) is on-site when required by the plan.

Residual Impacts

With the implementation of MM CUL-2a and CUL-2b the potential for impacts to archaeological resources would be less than significant. If the event of an unanticipated discovery there would be a clear Treatment Plan and any required testing or data recover would be completed as necessary.

Impact Description

Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

CUL-3 Construction of the proposed Project would disturb Holocene dune and beach sand geologic deposits that have a low potential for paleontological resources. However, the excavation may also extend into deeply buried Pleistocene sedimentary deposits that have a moderate to high potential to contain paleontological resources which would be impacted by ground disturbance. However, this impact would be *less than significant with mitigation*.

Paleontological resources have not been previously recorded in the Holocene dune and beach sand that characterize surficial deposits in the Project site. However, several fossil localities have been documented within 5 miles of the Project site in Quaternary older alluvium, similar to the Pleistocene sedimentary deposits that underlie the Project area at depth. Project-related excavation for the subterranean basement would reach up to 30 ft bgs. The depth at which the Pleistocene sedimentary deposits underlie the Holocene dune and beach sand is unknown but may be on the order of tens of ft bgs (Dibblee et al. 1999). The LACM reports that deeper excavation in the Project area that extends into the older Pleistocene deposits may encounter significant paleontological resources. Therefore, the potential to destroy or disturb deeply buried paleontological resources during construction is low but is considered a potentially significant impact. Application of MM CUL-3a and -3b would reduce potentially significant impacts to unanticipated paleontological resources encountered in the Project area. In the event significant fossils are unexpectedly discovered during Project ground disturbance, then further mitigation through the implementation of MM CUL-3c, -3d, and -3e would reduce potential impacts to a *less than significant* level.

Mitigation Measures

MM CUL-3a Construction Worker Awareness Training. *Prior to the commencement of construction-related activities, all construction personnel involved in excavation or trenching shall receive a worker's environmental awareness training on paleontological resources prepared by a qualified professional paleontologist, approved by the City. A qualified professional paleontologist is defined as a paleontologist meeting the criteria established by the Society for Vertebrate Paleontology. The training shall provide descriptions and illustrations of Pleistocene terrace deposits (i.e., San Pedro Sand, horizontally- and cross-bedded fine to medium grained, tan to orange sand and silt deposited in a shallow marine environment) as well as illustrative examples of the fossil resources that may be encountered in the Project site. The training shall also outline steps to*

follow in the event that a fossil discovery is made, provide contact information for the retained qualified professional paleontologist, and discuss applicable laws and penalties for removal or disturbance of fossils materials found on-site. The training may be presented in person, videotaped, or presented in an informational PowerPoint or brochure for future use by field personnel not present at the start of Project construction.

MM CUL-3b ***Construction Monitoring.*** *Because of the potential for encountering Pleistocene terrace deposits beneath Holocene coastal sediment deposits during Project construction activities, a qualified professional paleontologist, approved by the City, shall be on-call for the duration of excavation associated with the subterranean basement. In the event that Pleistocene terrace deposits are encountered by construction workers or on-site geotechnical engineers the City-approved, qualified professional paleontologist shall be required on site for all future excavation activities within that sediment type. The frequency and duration of monitoring will be determined by the qualified professional paleontologist and shall be based on the rate of excavation and grading activities, the materials being excavated, and the depth of excavation, and if found, the abundance and type of fossils encountered. Monitoring shall consist of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, collecting wet or dry screened sediment samples of promising horizons for smaller fossil remains. If a potentially significant fossil is found,*

MM CUL-3c ***Unanticipated Fossil Discovery.*** *If a potentially significant fossil is discovered during excavation activities, the qualified paleontological monitor shall be allowed to temporarily divert or redirect grading and excavation activities in the area of the exposed fossil to facilitate evaluation and, if necessary, salvage. If the fossil is determined to be significant, MM CUL-3c and MM CUL-3d should be implemented to protect and document the paleontological resources in the Project area. Work may not resume within 50 feet of the resource until approval by the qualified professional paleontologist.*

MM CUL-3d ***Fossil Preparation and Curation.*** *Upon completion of fieldwork, any collected significant fossils as determined by the qualified professional paleontologist shall be prepared in a properly equipped paleontology laboratory to a point ready for curation. Preparation will include the careful removal of excess matrix from fossil materials and stabilizing and repairing specimens, as necessary. Following*

laboratory work, all fossils specimens will be identified to the lowest taxonomic level, cataloged, analyzed, and delivered to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County, for permanent curation and storage. Accompanying notes, maps, and photographs shall also be filed at the repository. The cost of curation is assessed by the repository and is the responsibility of the applicant.

MM CUL-3e ***Paleontological Monitoring Report.*** *At the conclusion of laboratory work and museum curation, a brief final report shall be prepared describing the results of the paleontological mitigation monitoring efforts associated with the Project. The report shall include a summary of the field and laboratory methods, an overview of the Project area geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the museum repository.*

Plan Requirements and Timing. Prior to the issuance of any City permits related to on-site preparation, demolition, grading, or construction a City-approved qualified paleontologist shall be retained to provide a worker training and to be on-call to investigate any unanticipated discoveries.

Monitoring. The City shall approve the paleontologist and City permit compliance staff shall ensure that the worker training has been completed prior to the commencement of Project construction activities.

Residual Impacts

With the implementation of MM CUL-3a and -3b as well as MM CUL-3c, -3d, and -3e if necessary the potential for impacts to paleontological resources would be less than significant. If the event of an unanticipated discovery there would be construction monitoring, fossil preparation and curation, and the completion of a paleontological monitoring report that would document the find.

Impact Description

Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

CUL-4 **While highly unlikely, Native American human remains may be inadvertently uncovered during Project construction. However, in the event of this occurrence, the City and Project applicant would immediately cease activity in the vicinity of the discovery and comply with existing regulations. Therefore, impacts would be reduced to *less than significant*.**

Although human remains have not been identified previously in the Project vicinity, the immediate vicinity surrounding the Project site could have been used as a gathering and processing site by Native Americans. Therefore, while highly unlikely, it is possible that human remains could be preserved in undisturbed late Holocene Age unconsolidated Eolian Deposits that underlie the site at depth. Therefore, while highly unlikely, the possibility exists that such remains could be uncovered during construction of the proposed Project.

Specifically, California Health and Safety Code Section 7050.5 requires that in the event that human remains are discovered within the proposed Project site, disturbance of the site shall be halted. A qualified professional archaeologist shall inspect the remains and confirm that they are human, and if so, shall immediately notify the coroner in accordance with Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. If the coroner determines the remains are Native American, the coroner shall contact the NAHC. As provided in Public Resources Code Section 5097.98, the NAHC shall identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

With compliance to existing regulations prescribed in California Health and Safety Code Section 7050.5, CEQA Section 15064.5, and Public Resources Code Section 5097.98, impacts to human remains would be *less than significant*.

Impact Description

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or

A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

CUL-5 Tribal cultural resources, as defined in Public Resources Code Section 21074, may be inadvertently uncovered during Project construction. Damage or destruction of such tribal cultural resources would be a potentially significant impact. However, impacts would be reduced to *less than significant with mitigation.*

According to a review of the NAHC's SLF and outreach with four Native American representatives, there have been no previously identified tribal cultural resources at the Project site or in the immediate Project vicinity. However, the Project vicinity was a favorable environment for Native American settlement. Gabrieleño/Tongva San Gabriel Band of Mission Indians indicated that the Project site is sensitive for tribal cultural resources given its location along the coast and within an area of historic use by Gabrieleño villages, such as *Engnovangna* and *Waachnga*, which were believed to adjoin and overlap during late Prehistoric and Protohistoric Periods. The Gabrieleño villages were centered in the Los Angeles Basin and extended as far east as the San Bernardino-Riverside area. The Gabrieleño Tongva Indians of California also noted that the entire area is considered culturally sensitive due to its proximity to Redondo Beach, which had been a salt gathering and trading site for the Gabrieleño Tongva Indians. Therefore, there is the potential to encounter buried prehistoric archaeological resources if excavation beneath the Project site disturbs native, undisturbed Holocene Age unconsolidated Eolian Deposits. With the implementation of MM CUL-2a and CUL-2b, impacts to tribal cultural resources would be reduced to *less than significant*.

Cumulative Impacts

A cumulative impact to cultural resources would result if the impacts associated with the proposed Project, when combined with other pending, approved, and recently completed projects within the City and the neighboring Beach Cities, the City of Redondo Beach and the City of Manhattan Beach resulted in significant impacts to cultural resources, paleontological resources, or tribal cultural resources. Excavation and other ground disturbing activities conducted at all projects within the Beach Cities would cumulatively increase the potential for these resources to be altered, disturbed, or otherwise damaged. The potential to create adverse cumulative impacts

to such resources depends on the nature of each project, including its specific site and surroundings.

However, all pending, approved, or recently completed projects are required to comply with the regulations cited in the analysis above in the event resources are known or discovered during construction. These regulations include Public Resources Code Section 21083.2 or Public Resources Code Section 21084.1 and CEQA Section 15064.5. Nearly all of the cumulative projects are located within developed areas where surface archaeological resources have likely been previously displaced or otherwise disturbed by development activities. Projects would have a greater potential to impact previously undiscovered subsurface archaeological resources if construction excavations would reach previously undisturbed, native soils. However, in the areas where projects that may have potential for significant impacts, existing regulations require that if resources are encountered they would be avoided or a data recovery plan to adequately recover scientifically consequential information would be implemented consistent with state law (refer to Section 3.4.3, *Impact Assessment and Methodology, Archaeological Resources*).

Similarly, in the paleontological resources, it is likely that many of the cumulative projects in the area, particularly those with potential for substantial excavation, would be subject to environmental review. If potential for significant impacts on paleontological resources is identified, mitigation measures similar to those proposed for the proposed Project would be implemented. With implementation of mitigation measures by related projects and the proposed Project, cumulative impacts on paleontological resources would be less than significant, and the proposed Project's contribution to such impacts would not be cumulatively considerable.

3.5 GEOLOGY AND SOILS

This analysis describes underlying geology and soils at the proposed Strand and Pier Hotel Project (Project) site and vicinity, including potential geologic hazards (e.g., faults or unstable soils). These conditions are discussed in the context of potential hazards that could affect the proposed Project or surrounding community within the City of Hermosa Beach (City). Information for this analysis is derived from a site-specific geotechnical engineering report prepared for the Project (Byer Geotechnical, Inc. 2015). Other sources of information include the Existing Conditions Report for the City's recently adopted General Plan (PLAN Hermosa), Public Safety Element of PLAN Hermosa (City of Hermosa Beach 2017), Southern California Earthquake Data Center, Department of Conservation California Geological Survey (CGS) (formerly known as the Division of Mines and Geology), and California Emergency Management Agency (Cal EMA).

3.5.1 Existing Setting

Regional Geology

The City is located within the Los Angeles physiographic basin of coastal Southern California, an alluvial lowland, sometimes referred to as the coastal plain (i.e., a lowland filled with depositions of clay, silt, sand, or gravel as a result of tectonic processes). The Los Angeles Basin is approximately 70 miles long and 10 miles wide, and is bound on the north and east by the Santa Monica, San Gabriel, and Santa Ana mountains, and on the west and south by the Pacific Ocean and the Palos Verdes Hills. Prior to approximately 5 million years ago, this basin was submerged under the ocean and much of the sediment was deposited in a marine environment (City of Hermosa Beach 2014).

The City is underlain by Holocene-age dune sands located west of the adjacent older alluvial deposits of the Los Angeles Basin. Beneath the surficial dune sands is the Pleistocene-age San Pedro Formation, consisting of unconsolidated and semi-consolidated stratified sands with some clays, silts, and gravels. The late Pliocene-age Pico Formation, consisting of marine siltstones and sandstones, sits beneath the San Pedro Formation. Beneath the Pico Formation is the early Pliocene-age Repetto Formation, consisting of siltstones with layers of sandstones and conglomerates. Beneath the Repetto Formation is the Miocene-age Puente Formation, which contains the primary oil reservoir in the region (City of Hermosa Beach 2014).

Topography within the City is characterized by rolling hills and ranges in elevation from sea-level at the coast to approximately 200 feet above sea-level at inland locations (City of Hermosa Beach 2014).

Geologic Hazards

The primary effects of geologic hazards (e.g., earthquakes) are fault ground ruptures and ground shaking. Secondary hazards include liquefaction, landslide-induced earthquakes, expansive soils, erosion, subsidence, and differential settlement. Although tsunamis are typically triggered by seismic events, the effects that would be experienced in the City are consistent with flooding events; therefore, the potential for an earthquake along onshore or offshore faults to create tsunami hazards at the Project site is discussed in Section 3.7, *Hydrology and Water Quality*.

Faults and Fault Rupture

Faults are characterized by the CGS as "active," "potentially active," or "inactive," according to the most recent seismic activity of the fault. There are numerous faults in Southern California that are categorized as "active" or "potentially active." Faults from past geologic periods of mountain building that do not display evidence of recent offset (i.e., displacement or discontinuity in geological rock masses) are considered "potentially active" and faults that have historically produced earthquakes or show evidence of movement within the past 11,000 years (i.e., within the Holocene time period) are known as "active faults" (Byer Geotechnical, Inc. 2015).

Fault rupture describes the sudden release of elastic energy that results from the sliding of one part of the Earth's crust past another. The resulting fracture is known as a fault, while the sliding movement of earth on either side of a fault is called fault rupture. Fault rupture begins below the ground surface at the earthquake hypocenter, typically between 3 and 10 miles below the ground surface in California. If an earthquake is large enough, the fault rupture will actually travel all the way to the ground surface, damaging structures built across its path (City of Hermosa Beach 2014). Although the City is located in a seismically active region, there are no known active faults within the City limits, and the City is not susceptible to fault rupture (City of Hermosa Beach 2017). The potential for surface rupture on the Project site is expected to be very low since no faults have been identified in this area (Byer Geotechnical, Inc. 2015). Forty-eight faults were found within a 100-kilometer radius search area from the Project site, including the Newport-Inglewood, Santa Monica, Anacapa-Dume, Malibu Coast, and the Palos Verdes faults. The closest active fault is the Palos Verdes Fault, located approximately 1.7 miles west of the Project site.

The Alquist-Priolo Earthquake Fault Zoning Act regulates development near active faults to mitigate the hazard of surface fault rupture. The Act requires areas within 500 feet of a known active fault to be designated Earthquake Fault Zones and requires geologic reports for all proposed buildings used for human occupancy within 1,000 feet of the zone. There are no Alquist-Priolo Earthquake Zones within the City, including the Project site (CGS 2016). The nearest Alquist-

Priolo Special Studies Zone is located approximately 6 to 7 miles northeast of the City and is associated with the Newport-Inglewood Fault.

Seismic Ground Shaking

Seismic ground shaking is defined as motion that occurs as a result of energy released during faulting which could potentially result in the damage or collapse of buildings and other structures, depending on the magnitude of the earthquake, the location of the epicenter, and the character and duration of the ground motion (City of Hermosa Beach 2014). The characteristics of the underlying soil and rock, the locations of existing structure; and the building materials used are important factors affecting the potential for damage due to seismic ground shaking. Earthquake magnitudes are quantified using the Richter scale, which is a logarithmic scale whereby each whole number increase in Richter magnitude represents a tenfold increase in the amplitude of the seismic wave generated by an earthquake. For example, at the same distance from a fault, the shaking during a magnitude 5.0 earthquake will be 10 times larger than a magnitude 4.0 earthquake while the amount of energy released would increase by a factor of 32. Earthquakes of Richter magnitude 6.0 to 6.9 are classified as moderate, those between 7.0 and 7.9 are classified as major, and those of 8.0 or more are classified as great.

Historically the City has experienced ground shaking from a number of seismic events over the last 150 years, including previous earthquakes in 1812, 1827, 1852, 1855, 1857, 1893, 1933, 1936, 1952, 1956, 1965, 1971, 1974, 1977, 1987, 1991, and 1994. The seismic events in 1812 and 1857 are thought to have occurred along the Mojave Segment of the San Andreas Fault and caused significant damage to developed areas of Southern and Central California. Those earthquakes were estimated to have had magnitudes of approximately 7.1 and 7.8 on the Richter scale, respectively. The 1952 Tehachapi earthquake had an estimated magnitude of 7.7 on the Richter scale. The Newport-Inglewood Fault has been the source of several earthquakes in the last 70 years, with magnitudes ranging from 4.7 to 6.4 on the Richter scale. The largest of these was the March 1933 Long Beach earthquake with a magnitude of 6.4 (Southern California Earthquake Data Center 2013). It caused surface fault rupture, serious damage to weak masonry structures, and killed 115 people at its epicenter located approximately 30 miles southeast of the City. The most recent regional seismic event was the January 1994 Northridge earthquake with a magnitude of 6.8 (Southern California Earthquake Data Center 2013). The epicenter of this event was approximately 25 miles northeast of the City; however, no surface fault ruptures were observed in the City during ground shaking. (City of Hermosa Beach 2014).

Active faults within the region of the City that are capable of producing strong ground shaking on the Project site include the Newport-Inglewood, Santa Monica, Anacapa-Dume, Malibu Coast,

and the Palos Verdes faults. The closest active fault to the Project site, the Palos Verdes Fault – located approximately 1.7 miles west, is capable of producing a maximum moment magnitude of 7.3 (Byer Geotechnical, Inc. 2015). However, no known earthquakes have occurred along the Palos Verdes Fault in the past 200 years.

Liquefaction and Lateral Spreading

Liquefaction is a form of earthquake-induced ground failure that occurs primarily in relatively shallow, loose, granular, water-saturated soils. Liquefaction is defined as the transformation of a granular material from a solid state into a liquefied state as a consequence of increased pore pressure, which results in the loss of grain-to-grain contact. Unconsolidated silts, sands, and silty sands are most susceptible to liquefaction. Almost any saturated granular soil can induce an increase in pore water pressures when shaken, and subsequently, these excess pore water pressures can lead to liquefaction if the intensity and duration of earthquake shaking are great enough. During recent large earthquakes where liquefaction occurred (e.g., Taiwan, Loma Prieta, Mexico City, and Sea of Japan), structures that were most vulnerable to liquefaction included buildings with shallow foundations, railways, buried structures, retaining walls, port structures, utility poles, and towers. In addition, lateral spreading can occur when potentially liquefiable soils are present and exposed in conjunction with a sloping ground surface. If liquefiable soils in the slope are continuous, the toe of the slope is unsupported, and the soils liquefy, the result may be temporary instability resulting in movement of sediments on the slope, causing slope failure.

The Redondo Beach Quadrangle Seismic Hazard Zones Map identifies the Project site within an area where historic occurrence of liquefaction or geological, geotechnical, and high groundwater conditions indicate a potential for permanent ground failure due to liquefaction (CGS 1999). Further, the site-specific geotechnical engineering report indicates that at various depths between 12 and 40 feet below ground surface (ft bgs) there exists 2.5-foot-thick layers of soil and several 1-foot-thick layers of soil that may be susceptible to liquefaction (Byer Geotechnical, Inc. 2015). However, the Project site is not located adjacent to sloping ground surfaces and a lateral spreading hazard is not indicated for the potentially-liquefiable alluvial soils; therefore, the potential for lateral spreading at the Project site is considered very low (Byer Geotechnical, Inc. 2015).

Landslides and Slope Instability

A landslide describes the downhill movement of masses of earth material under the force of gravity. Factors contributing to landslide potential include steep slopes, unstable terrain, and proximity to earthquake faults (City of Hermosa Beach 2014). The stability of slopes is affected by a number of factors including gravity, rock and soil type, amount of water present, and amount

of vegetation present. Events that can cause a slope to fail include sudden movements such as those during a seismic event; modification of the slope by nature or humans; undercutting caused by erosion; and changes in hydrologic characteristics, including heavy rains that can saturate the soil. The Redondo Beach Quadrangle Seismic Hazard Zones Map does not identify the Project site, which is developed and has a generally flat topography, within an area where previous occurrence of landslide movement, or topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacement (CGS 1999).

Expansive Soils

Expansive soils consist largely of clays, which can greatly increase in volume when saturated with water and shrink when dried. The potential for soil to undergo shrink and swell is greatly enhanced by the presence of a fluctuating, shallow groundwater table. Expansive soils tend to swell with seasonal increases in soil moisture in the winter months and shrink as soils become drier in the summer months. Repeated shrinking and swelling of the soil can lead to stress and damage of structures, foundations, fill slopes, and other associated facilities. No underlying expansive clays or soils exhibiting shrink-swell characteristics have been discovered within the City; however, since no comprehensive soil mapping exists for the City, expansive and collapsible soils are analyzed on a project-by-project basis (City of Hermosa Beach 2014).

The Project site is located within the Beach Sand soils. This soil type has a low potential for expansion (Byer Geotechnical, Inc. 2015). Expansion index tests conducted on soil samples collected from the Project site yielded a value of 14 (very low) (Byer Geotechnical, Inc. 2015).

Erosion Susceptibility

Erosion of exposed soils and rocks occurs naturally as a result of physical weathering caused by water and wind action. Currently, the Project site is developed and most of the land surface is covered by impervious materials such as buildings and concrete (e.g., sidewalks) and asphalt (e.g., Mermaid Restaurant surface parking lot) pavements. Therefore, due to the very small quantity of soil currently exposed at the surface, and the level nature of the site, the potential for substantial erosion hazards is low.

Subsidence

Subsidence is the downward shift of the ground surface relative to a datum, such as mean sea level. Subsidence may be caused by mineral dissolution, earth extraction activities, geological faulting, seasonal effects that cause changes in soil moisture content, or the withdrawal of pressurized fluids (e.g., groundwater, oil, or gas from subsurface aquifers). The City is located within an area of

known subsidence associated with withdrawal of groundwater and petroleum. As such, areas of the City may be susceptible to subsidence from further groundwater withdrawal, oil production, and differential settlement of uncertified fills or landfills within the City.

In *Seismic Hazard Zone Report 031*, CGS estimated that the historically highest groundwater level at the Project site was 10 ft bgs or less (Byer Geotechnical, Inc. 2015). Based on the geotechnical engineering report for the Project site, groundwater was encountered at approximate depths of 8 to 11 ft bgs (Byer Geotechnical, Inc. 2015). However, groundwater levels may also differ across the site because of fluctuations in groundwater levels due to tides, as well as variations in climate, irrigation, development, and other factors not evident at the time of exploration (Byer Geotechnical, Inc. 2015).

Differential Settlement

Differential settlement is the process whereby soils settle non-uniformly, potentially resulting in stress and damage to utility pipelines, building foundations, or other overlying structures. Such movement can occur in the absence of seismically induced ground failure, due to improper grading and soil compaction or discontinuity of underlying fill and naturally occurring soils. However, strong ground shaking often greatly exacerbates soil conditions already prone to differential settlement, resulting in distress to overlying structures. Elongated structures, such as pipelines, are especially susceptible to damage as a result of differential settlement. Native soils throughout the City are relatively dense and therefore are not prone to seismically induced settlement (City of Hermosa Beach 2014).

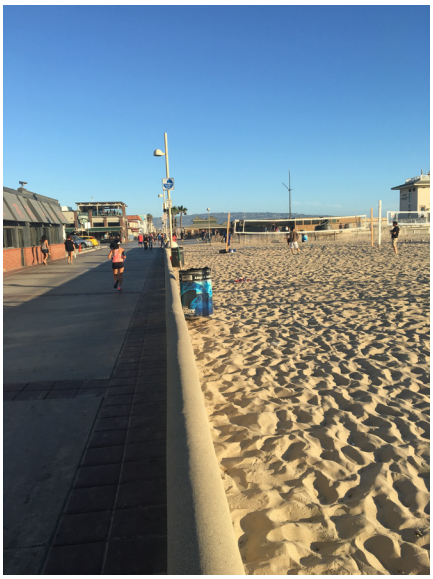
Naturally occurring soil underlying the Project site consists of beach sand that is characterized as medium dense to very dense. Fill was not encountered in the borings drilled on the Project site, but could be expected on-site in areas such as utility trench backfills (Byer Geotechnical, Inc. 2015).

Site Description and Topography

The Project site is located along the low-lying waterfront of the City which rises just above mean sea level. The topography of the site is level with a slight slope to the west, where the site drains to the Pacific Ocean located 300 feet west across a wide sandy beach. Past grading on the Project site has consisted of placing minor amounts of fill to prepare a level pad for the existing structures (Byer Geotechnical, Inc. 2015).

Site Soils

A geotechnical engineering report was prepared for the proposed Project that analyzed the existing soils underlying the Project site (Byer Geotechnical, Inc. 2015). This report determined that the Project site is located entirely within the natural beach sand deposits, common for the coastline. Beach sand consists of poorly- to well-graded sand that is saturated below groundwater (Byer Geotechnical, Inc. 2015). Groundwater is composed of a mixture of seawater from the west and fresh groundwater from the West Coast Basin Barrier injection wells (Thomas Harder & Co. 2016). The geotechnical engineering report included the results of three soil borings that were drilled to depths of 35, 45.5, and 50.5 ft bgs at the Project site (approximately 20 feet below the 30.5-foot excavation for the proposed subterranean basement). Groundwater was encountered at depths of 8 to 11 ft bgs. Results from the deepest soil boring to 50.5 feet are described below:



The Project site is located directly adjacent to The Strand at sea level. Soils underlying the Project site are composed of the beach sand soils.

Strand and Pier Hotel Site (Soil Boring 1 at 50.5 ft bgs):

- Ground surface to 10 ft bgs– medium dense, fine sand, some medium sand
- 10 feet to 15 ft bgs – medium dense to dense, fine sand, some medium sand
- 15 to 30 ft bgs – medium dense to dense, fine sand, some medium sand
- 30 feet to 35 ft bgs – medium dense, fine to medium sand, trace coarse sand
- 35 feet to 50.5 ft bgs (maximum exploration depth) – very dense, fine to coarse sand

3.5.2 Regulatory Setting

Federal Regulations

Several Federal regulations apply to geologic hazards. These laws regulate reduction of earthquake hazards; soil erosion; water quality discharged from construction sites; and set standards for design and construction. Applicable laws include:

Earthquake Hazards Reduction Act (1977)

The purpose of this Act is to reduce the risks to life and property from future earthquakes in the U.S. through establishment and maintenance of an effective earthquake hazards reduction

program. To accomplish this goal, the Act established the National Earthquake Hazards Reduction Program. The National Earthquake Hazards Reduction Program Act substantially amended this program in November 1990 by refining the description of agency responsibilities, program goals, and objectives.

Federal Soil Conservation Law (16 U.S. Code [USC] 590a)

By Congressional policy, this law provides permanently for the control and prevention of soil erosion by preventative measures, including but not limited to engineering operations, methods of cultivation, growing of vegetation, and changes in land use.

Clean Water Act Section 402 (National Pollutant Discharge Elimination System [NPDES] Program)

This Act mandates that certain types of construction activity comply with the requirements of the U.S. Environmental Protection Agency's (USEPA's) NPDES program. Under State Water Resources Control Board (SWRCB) enforcement, the Los Angeles Regional Water Quality Control Board (RWQCB) implements the NPDES program in Los Angeles County. The program requires a General Construction Activities Permit, including implementation of established Best Management Practices (BMPs) for management of stormwater, erosion control, and/or siltation. More information regarding this regulation is provided in Section 3.7, *Hydrology and Water Quality*.

Uniform Building Code

The Uniform Building Code (UBC) is published by the International Conference of Building Officials and forms the basis for California's building code, as well as about half of the state building codes in the U.S. It has been adopted by the California Legislature with amendments to address the specific building conditions and structural requirements for California, as well as provide guidance on foundation design and structural engineering for different soil types. The UBC defines and ranks the regions of the U.S. according to their seismic hazard potential. There are four types of regions defined by Seismic Zones 1 through 4, with Zone 1 having the least seismic potential and Zone 4 having the highest. The City of Hermosa Beach is located within Seismic Zone 4.

State Regulations

State policies and regulations have been developed in California concerning types of development, building standards, and locations of seismic hazards. These regulations include:

Alquist-Priolo Earthquake Fault Zoning Act (1972)

The purpose of this Act is to regulate types of development near active faults to mitigate the hazard of surface rupture. Under this Act, the State Geologist is required to delineate earthquake fault zones along known active faults in California.

California Building Code (CBC) (2007)

The State of California provides a minimum standard for building design through the CBC, which is based on the UBC, but has been modified to account for California's unique geologic conditions. The CBC is selectively adopted by local jurisdictions, based on local conditions. Chapter 16 of the CBC contains specific requirements for seismic safety. Chapter 18 of the CBC regulates excavation, foundations, and retaining walls. Chapter 33 of the CBC contains specific requirements pertaining to site demolition, excavation, and construction to protect people and property from hazards associated with excavation cave-ins and falling debris or construction materials. Chapter 70 of the CBC regulates grading activities, including drainage and erosion control.

Seismic Hazards Mapping Act

In order to address the effects of strong ground shaking, liquefaction, landslides, and other ground failures due to seismic events, the State of California passed the Seismic Hazards Mapping Act of 1990. Under the Seismic Hazards Mapping Act, the State Geologist is required to delineate "seismic hazard zones." Cities and counties must regulate certain development projects within these zones until the geologic and soil conditions of the project area are investigated and appropriate mitigation measures, if any, are incorporated into development plans. The State Mining and Geology Board provides additional regulations and policies to assist municipalities in preparing the Safety Element of their General Plan and encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety. Under Public Resources Code Section 2697, cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard.

Local Regulations

PLAN Hermosa

PLAN Hermosa provides development policies, including public safety policies to protect the community from avoidable risk and harm by natural and man-made hazards. As described in Section 1.9, *Relationship to Recent General Plan Update and Pending Update of City Local*

Coastal Plan, PLAN Hermosa was adopted by the City Council on August 22, 2017. The policies directly related to reducing impacts to geology and soils include:

PLAN Hermosa PUBLIC SAFETY ELEMENT

Goal 1. Injuries and loss of life are prevented, and property loss and damage are minimized.

Policy 1.1 Evaluate risks. Buildings and infrastructure will be periodically evaluated for seismic, fire, flood, and coastal storm hazard risks and identified risks will be minimized by complying with CBC standards and other applicable regulations.

Policy 1.2 Prepare geotechnical reports. Geotechnical reports will be prepared for new development projects in areas with the potential for liquefaction or landslide.

Policy 1.10 Consider site-specific soil conditions. Require new structures to consider site-specific soil conditions.

City of Hermosa Beach Municipal Code

Chapter 15 of the City of Hermosa Beach Municipal Code (HBMC) contains the City's building code, which sets minimum design and construction standards for existing and new development. Applicable sections include:

Chapter 15.04.010 – Adoption of California Building Code. The City of Hermosa Beach Building Code adopts by reference the *California Building Code, 2013 Edition*, which sets the minimum design and construction standards for new development within the state. The *California Building Code, 2013 Edition* adopts by reference the *International Building Code, 2013 Edition*, as published by the California Building Standards Commission and the International Code Council including "Seismic Hazard Maps," as published by the U.S. Geological Survey (USGS).

Chapter 15.36 – Seismic Strengthening of Buildings Having Unreinforced Masonry Bearing Walls. The City of Hermosa Beach Building Code promotes public safety and welfare by reducing the risk of death or injury that may result from the effects of earthquakes on existing unreinforced masonry bearing wall buildings. The provisions of the chapter require existing seismically unreinforced buildings to be retrofitted and provide minimum seismic reinforcement standards for new buildings.

3.5.3 Impact Assessment and Methodology

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the 2017 California Environmental Quality Act (CEQA) Guidelines. For purposes of this Environmental Impact Report (EIR), implementation of the proposed Project may have a significant adverse geological impact if it would do any of the following:

a) The project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:
    i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
    ii. Strong seismic ground shaking
    iii. Seismic-related ground failure, including liquefaction
    iv. Landslides
b) The project would result in substantial soil erosion or the loss of topsoil.
c) The project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
d) The project would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.
e) The project would have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

Methodology

The proposed Project was evaluated for geological risk based on a Project site-specific geotechnical engineering report (Byer Geotechnical, Inc. 2015), as well as information provided by the Existing Conditions Report for the City's recently adopted General Plan (PLAN Hermosa), Public Safety Element of PLAN Hermosa (City of Hermosa Beach 2017), Southern California Earthquake Data Center, Cal EMA, and CGS maps. Regional and onsite geologic and soil conditions was compared to relative risk of potential geologic hazards under the proposed Project which could affect the proposed Project or surrounding community.

The Initial Study (see Appendix A) prepared for the proposed Project determined that the Project would not result in impacts associated with rupture of a known fault because the City is not located

within a fault-rupture hazard zone delineated by the Alquist-Priolo Earthquake Fault Zoning Map, and no major active faults are located within close proximity to the City or Project site. The Project site and surrounding area is characterized by relatively flat topography, where the potential for landslides to occur at the Project site is very low. Additionally, the Project site is not mapped by the City as being located in an Earthquake-Induced Landslide Zone; therefore, no impacts related to landslides would occur. As previously described, the Project site is not located adjacent to sloping ground surfaces and the potential for lateral spreading at the Project site is considered very low; therefore, the Project would not be located on a geologic unit or soil that is unstable and potentially result in on- or off-site lateral spreading. Potential impacts related to soils that may become unstable as a result of the Project, possibly resulting in on- or off-site liquefaction, subsidence, or collapse are discussed in the Project impact analyses below. The proposed Project would not require the use of septic systems or other alternative wastewater disposal systems because the Project would include sewer utilities that would be connected directly to the local municipal wastewater treatment system. Therefore, no impact would occur in relation to soils incapable of supporting the use of septic systems or other alternative wastewater disposal systems or other alternative wastewater disposal systems. As described in Section 3.5.1, *Environmental Setting*, the geotechnical engineering report (Byer Geotechnical, Inc. 2015) determined that the Project site is located within the Beach Sand soils, which have a low potential for expansion. Expansion index tests conducted on soil samples collected from the Project site yielded a value of 14 (very low) (Byer Geotechnical, Inc. 2015). Therefore, no impact would occur in relation to the Project site being located on an expansive soil that would potentially create a substantial risk to life or property. Additionally, the proposed Project would be built in compliance with the City's PLAN Hermosa Public Safety Element and applicable building and construction codes (e.g., CBC, HBMC). Based on the previous findings of the Initial Study and geotechnical engineering report, this EIR will not include further discussion for thresholds (ai), (aiv), (d) through (e).

3.5.4 Project Impacts and Mitigation Measures

Impact Description

Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving: strong seismic ground shaking or seismic-related ground failure, including liquefaction?

GEO-1 Liquefaction of underlying soils during a major seismic event and ground shaking could undermine the structural integrity of the proposed mixed-use hotel. However, with compliance with applicable regulations (e.g., CBC, HBMC, etc.) and implementation of appropriate geotechnical mitigation measures, this impact would be *less than significant with mitigation.*

Seismic activity and/or strong ground shaking resulting from movement of regional or local faults could damage proposed future structures on the Project site, exposing occupants, surrounding buildings, and beach-goers to hazards associated with the Palos Verdes, Newport-Inglewood, Santa Monica, Malibu Coast, and/or Anacapa-Dume or other faults. The seismic hazard zones map for the Redondo Beach Quadrangle (CGS 1999) identifies the Project site to be located in an area designated as having a historic occurrence of liquefaction or a potential for permanent ground failure due to liquefaction. As such, the proposed Project and future occupants could be exposed to potentially significant impacts due to seismic-related ground failure, particularly liquefaction. Seismic settlement would develop if liquefaction of the saturated subsurface soils underlying the proposed building's foundation system were to occur during a seismic event. The liquefaction analysis indicates a potential for liquefaction that could result in up to 3.2 inches of settlement in the event of a strong local earthquake, weakening foundations with potential for building collapse (Byer Geotechnical, Inc. 2015). However, the Project would be required to comply with CBC and HBMC Chapter 15.36 (*Seismic Strengthening of Buildings Having Unreinforced Masonry Bearing Wall*s), as well as site specific measures MM GEO-1a and -1b, which would require compliance with the recommendations in the geotechnical engineering report prepared for the proposed Project. MM GEO-1a and -1b would require specific construction techniques to ensure that the proposed foundation and hotel building would be structurally sound and less likely to collapse in the event of unstable geologic conditions, such as ground shaking or liquefaction. Further, in compliance with the CBC and HBMC, modern buildings are designed to resist ground shaking through the use of shear panels, moment frames, and reinforcement; additional precautions may be taken, including strapping water heaters and securing furniture to walls and floors (Byer Geotechnical, Inc. 2015). As such, potential risks associated with exposing people or structures to seismic-induced liquefaction hazards would be reduced to be *less than significant with mitigation*.

Mitigation Measure

Implementation of the following mitigation measure based on the findings of the geotechnical engineering report (Byer Geotechnical, Inc. 2015) would reduce impacts from seismic-related ground failure and liquefaction to a less than significant level.

MM GEO-1a ***Foundation Design.*** *The foundation design shall comply with the design specifications in the Project geotechnical engineering report prepared by Byer Geotechnical, Inc. in 2015. The foundation shall be designed to distribute the building loads uniformly onto the supporting subgrade, and to reduce the potential for liquefaction-induced settlement to a level that is less than significant. These design specifications can be found in the Conclusions and Recommendations Section of the geotechnical engineering report (see Appendix G, Pages 11-22).*

Plan Requirements and Timing. The foundation design shall be provided to and reviewed by the City Department of Building and Safety prior to the issuance of a building permit and the commencement of construction activities. The City Department of Building and Safety shall ensure that the foundation design meets the design specification in the Project geotechnical engineer report and the requirements of the California Building Code (CBC) and the Hermosa Beach Municipal Code (HBMC).

Monitoring. A City-approved geotechnical engineer and City permit compliance staff shall observe and ensure compliance with the design concepts, specifications, and recommendations during grading and construction. Foundation excavations shall be observed and approved prior to placing steel, forms, or concrete. Bottoms for fill, compaction of fill, temporary excavations, and shoring shall be observed.

MM GEO-1b ***Retaining Walls Design.*** *The Applicant shall install cantilever retaining walls based on design specifications outlined in the Project geotechnical engineering report prepared by Byer Geotechnical, Inc. in 2015 (see Appendix G). Interior and exterior retaining walls, shall be waterproofed to prevent moisture intrusion, seepage, and leakage through use of waterproofing paints, compounds, or sheeting, as appropriate. Landscaped areas above retaining walls shall be sealed or properly drained to prevent moisture contact with the wall or saturation of wall backfill.*

Plan Requirements and Timing. Retaining wall designs prepared by a City-approved geotechnical engineer, based on recommendations outlined in the Project geotechnical engineering report, shall be provided to the City Department of Building and Safety for review and approval prior to the issuance of a building permit and the commencement of construction activities.

Monitoring. A City-approved geotechnical engineer and City permit compliance staff shall observe and ensure compliance with the design concepts, specifications, and recommendations during construction.

Residual Impacts

The CBC and HBMC include comprehensive requirements and standards to ensure that all development is constructed to provide the maximum level of protection feasible and minimize the risk to life and property. Accordingly, compliance with existing CBC and HBMC standards along with recommended mitigation measures based on the findings of the Project-specific geotechnical engineering report would reduce the risk of impacts to *less than significant* for typical geological risks.

Although the occurrence probability of a larger-than-expected earthquake with corresponding high ground acceleration is low, it is not zero; consequently, any structure built in California is susceptible to failure during large seismic events. No matter which standards are followed or mitigation implemented, there would still be a potential for structural failure during an earthquake. Despite this immitigable risk of larger-than-expected earthquakes, implementation of recommended mitigation measures would reduce the risk of impact to *less than significant* for typical geological risks.

Impact Description

Would the project result in substantial soil erosion or the loss of topsoil?

GEO-2 During construction, excavation for the proposed subterranean parking structure could result in soil erosion from ground disturbance or groundwater intrusion, as well as subsidence due to groundwater dewatering. Once operational, soil erosion could potentially result from improper Project site drainage, causing soil instability and undermining the structural integrity of the proposed hotel building and subterranean parking garage. However, with implementation of mitigation measures, this impact would be *less than significant with mitigation*.

Project construction would demolish the existing buildings and pavements within the Project site potentially exposing underlying soils to wind and water erosion. Excavation of up to 42,700 cubic yards of soil (to a depth of up to 30.5 feet below existing grade; refer to Section 2.5.3, *Excavation*), for construction of the two subterranean levels of the parking garage. Additionally, utility trenching would also be required adjacent to the Project site (refer to Section 2.4.8, *Utilities*),

which may result in the potential for more limited soil erosion. As discussed in Section 3.7, *Hydrology and Water Quality*, mitigation measures MM HYD-1a through -1c would require implementation of erosion control and sediment management practices during construction as outlined in the site-specific Stormwater Pollution Prevention Plan (SWPPP), including BMPs such as use of temporary debris basins, gravel bag berms, sand bagging, hydraulic mulching, erosion control blankets, silt fencing, and soil stabilizers, as well as potentially scheduling major grading operations during dry months. In addition, as discussed in Section 3.7, *Hydrology and Water Quality*, under Impact HYD-2, either a pressed pile shoring system or a soil and groundwater freeze pipe system (which would create a frozen impermeable soil layer) would be used temporarily to maintain the groundwater level at a minimum of 10 feet below the subterranean basement levels and facilitate the construction of the foundation system. Ground freezing in particular is a chosen method of dewatering when minimizing subsidence is critical. For example, ground freezing was specifically selected for an infrastructure project in Boston that created a 3.5-mile tunnel to underground Interstate 93. It was critical to minimize subsidence during this in order to avoid impacts to the paved roads, railways, and developments above the tunnel. Therefore, with the implementation of the proposed dewatering systems associated with the construction of the proposed Project, there would be no Project-related impacts associated with soil erosion due to groundwater intrusion or subsidence due to groundwater dewatering.

During operation, potential soil erosion caused by improper drainage could result in instability and undermining of structures. However, as discussed in Section 3.7, *Hydrology and Water Quality*, under Impact HYD-3, the proposed Project would include a 17,400-gallon cistern system to capture and treat stormwater runoff from parking areas, roadways, building roofs, and hardscapes, which would also serve as a reservoir for greywater recycling for secondary uses (e.g., landscape irrigation and architectural water features, water for mechanical cooling towers, and water for toilet flushing). Therefore, there would be no substantial Project-related impacts associated with soil erosion and instability as a result of improper drainage.

Compliance with mitigation measures MM HYD-1a through -1c requiring implementation of erosion control and sediment BMPs during construction, as outlined in the site-specific SWPPP, would reduce potential impacts related to soil erosion to *less than significant with mitigation*.

Mitigation Measures

Implementation of the mitigation measures MM HYD-1a through -1c would apply and would reduce impacts from potential soil erosion to a less than significant level.

Residual Impacts

Implementation of the above-mentioned standard regulatory hydrology and water quality mitigation measures MM HYD-1a through -1c would also reduce impacts related to soil erosion to less than significant.

Impact Description

Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

GEO-3 During excavation and construction of the subterranean parking garage, excavated earthen walls of up to 30.5 feet high have the potential to collapse if proper shoring techniques are not followed. Collapse could result in significant impacts to the proposed Project or adjacent buildings, involving subsidence or otherwise creation of unstable soils. However, with compliance with applicable regulations (e.g., CBC, HBMC, etc.) and implementation of appropriate geotechnical mitigation measures this impact would be *less than significant with mitigation*.

Project-related excavation activities would involve shoring to prevent collapse or potential undermining of neighboring buildings.

Whenever excavation is made adjacent to existing streets, utilities and structures, there is the potential for movement. Due to the close proximity of the proposed building to the property lines, the relatively small setback of the building from the property lines, as well as the depth of excavation and exposure to beach sand, sloping back of the excavation wall is not feasible and shoring would be required. Shoring of soils is necessary to provide the structural support for neighboring buildings so that soils do not collapse or otherwise become unstable, resulting in structural damage and endangerment of people and property. Shoring involves providing supports to hold the soil back, thereby providing sufficient support to maintain soil strength and to prevent unstable soil conditions that could potentially cause subsidence. Improper shoring of soils would present the greatest potential for soil collapse at the Project site and would

to flow toward them. No vehicular surcharge[1] shall be allowed within 3 feet of the top of the cut.

MM GEO-3b Monitoring of Excavations Near Existing Streets*. The existing structures located immediately adjacent to proposed Project site shall be inspected and documented for structural integrity by a qualified, City-approved, geotechnical engineer prior to the issuance of a building permit and the commencement of construction. Based on the results of that inspection, a monitoring program shall be developed by the geotechnical engineer to detect any excessive movement early during construction. The program shall include optical surveying of the shoring and adjacent streets and buildings to detect any horizontal or vertical movement.*

Plan Requirements and Timing. An inspection report on findings of existing structures shall be prepared by a qualified, City-approved, geotechnical engineer for City review prior to the issuance of a building permit. Excavation monitoring plan/program, including optical surveying of shoring and adjacent streets and buildings, shall be provided to the City Department of Building and Safety for review prior to issuance of a building permit and the commencement of excavation activities.

Monitoring. Monitoring activities shall be implemented as outlined in the City-approved excavation monitoring program through the duration of excavation activities.

Residual Impacts

After implementation of CalOSHA, CCR, CBC, and HBMC standards for excavation, as well as mitigation measures MM GEO-3a and -3b based on the findings of the Project-specific geotechnical engineering report, impacts related to potential subsidence from creation of unstable soil conditions or potential collapse of excavated slopes would be reduced to a less than significant level because they will meet all code requirements and industry practices for reducing potential for liquefaction-induced settlement.

Cumulative Impacts

A cumulative impact related to geology and soils would result if Project impacts, when combined with other past, present, and future projects, would cumulatively increase the potential for the

[1] Geotechnical engineers use surcharge to improve weak, compressible soil by subjecting the site to a load (generally in the form of added fill) that exceeds the loading to be applied by the finished construction.

therefore have the potential for unstable soil impacts to the buildings on the Project site and neighboring properties.

All excavation activities for the proposed Project would be required to adhere to mandatory regulations set forth by the California Occupational Safety and Hazard Administration (CalOSHA), which specify excavation requirements to prevent impacts to life and safety of construction workers during excavation. These regulations include all requirements of Title 8, California Code of Regulations (CCR) Section 1541 (General Requirements). All excavation activities would also be required to adhere with all provisions of the HBMC and CBC, including Section 3304 of Chapter 33 of the CBC, which includes requirements for safeguards at work sites to ensure stable excavations and cut or fill slopes. Further, implementation of mitigation measures outlined in the Project geotechnical engineering report would reduce impacts from potential collapse of excavated slopes or potential subsidence from creation of unstable soil conditions to *less than significant with mitigation*.

Mitigation Measures

Implementation of the following mitigation measures based on the findings of the site-specific geotechnical engineering report for the proposed mixed-use hotel would reduce impacts from potential collapse of excavated slopes or subsidence from potential creation of unstable soil conditions to a less than significant level.

MM GEO-3a ***Temporary Shoring.*** *Temporary shoring shall be designed and installed to meet all specifications described in the Project geotechnical engineering report prepared by Byer Geotechnical, Inc. in 2015 (see Appendix G).*

Plan Requirements and Timing. Temporary shoring designs prepared by a City-approved geotechnical engineer, based on recommendations outlined in the Project geotechnical engineering report, shall be provided to the City Department of Building and Safety for review and approval prior to the issuance of a building permit and the commencement of construction activities.

Monitoring. A qualified, City-approved, geotechnical engineer and a City-approved permit compliance consultant shall be present during grading to monitor temporary slopes. Water shall not be allowed to pond on top of the excavations nor

number of residents and visitors to be exposed to geologic hazards. The geographic context for analysis of impacts on development from groundshaking or unstable soil conditions including landslides, liquefaction, subsidence, collapse, or expansive soil is generally site-specific. In accordance with City requirements, all future development within the City, as listed in Table 3.0-1, 3.0-2, and 3.0-3 would be required to undergo analysis of each site's geological and soil conditions prior to construction. This analysis would include investigations of native soils onsite and the structural stability of any proposed subterranean structures to ensure each individual project is designed and engineered to withstand reasonably foreseeable seismic activity or unstable soil conditions and would meet the most current and stringent building safety requirements. Additionally, because all projects would be required to undergo an analysis of site-specific geological and soil conditions and because restrictions on development would be applied in the event that geological or soil conditions pose a risk to safety, it is anticipated that the cumulative risks of soil instability, subsidence, collapse, and/or expansive soil would not be substantial. Although the occurrence probability of a larger-than-expected earthquake with corresponding high ground acceleration is low, it is not zero. Consequently, any structure built in the seismically active region of Southern California is inherently at risk to damage during major seismic events. However, the application of current HBMC and CBC standards would ensure that cumulative impacts associated with geology and soils would be *less than significant*. As such, implementation of the proposed Project would not contribute to a cumulatively considerable impact.