3.4 CULTURAL RESOURCES

As a result of the Initial Study, the City of Long Beach (City) determined that the proposed Kroc Community Center (proposed project) had the potential to result in impacts to cultural resources.[1] Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report. This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to cultural resources and identify alternatives.

The analysis of cultural resources consists of a summary of the regulatory framework that guides the decision-making process, a description of the existing conditions at the proposed project area, thresholds for assessing the level of significance of impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation. Potential impacts to cultural resources at the proposed project site were evaluated in accordance with Section 15063 of the State California Environmental Quality Act (CEQA) Guidelines.[2] Cultural resources at the proposed project site were evaluated with regard to queries of the South Central Coastal Information Center (SCCIC), located at California State University, Fullerton, for the presence of recorded historical and/or archaeological resources; the Natural History Museum of Los Angeles County for the presence of paleontological resources; and the Native American Heritage Commission (NAHC) for the presence of Native American sacred sites. Published and unpublished literature was reviewed. An intensive-level historical resources survey to define an impact area and to determine if any buildings, structures, objects, or districts may potentially be identified as historical resources was performed on December 5, 2007, and was summarized in a Cultural Resources Technical Report that was prepared for the proposed project in November 2008 and revised in January 2009 (Appendix C, *Cultural Resources Technical Report*).

3.4.1 Regulatory Framework

Federal

National Historic Preservation Act[3]

Enacted in 1966 and most recently amended in 2000, the National Historic Preservation Act (NHPA) declared a national policy of historic preservation and instituted a multifaceted program, administered by the Secretary of the Interior, to encourage the achievement of preservation goals at the federal, state, and local levels. The NHPA authorized the expansion and maintenance of the National Register of Historic Places (NRHP), established the position of State Historic Preservation Officer and provided for the designation of State Review Boards, set up a mechanism to certify local governments to carry out the purposes of the NHRA, assisted Native American tribes to preserve their cultural heritage, and created the Advisory Council on Historic Preservation (ACHP). Section 106 of the NHPA states that federal agencies with direct or indirect jurisdiction over federally funded, assisted, or licensed undertakings must take into account the effect of the undertaking on any historic property that is included in, or eligible for inclusion in, the NRHP and that the ACHP must be afforded an opportunity to comment through a process outlined in the ACHP regulations in Title 36 of the Code of Federal Regulations (CFR), Part 800, on such

[1] City of Long Beach, Department of Development Services. 16 July 2008. *Kroc Community Center Initial Study*. Prepared by: Sapphos Environmental, Inc., Pasadena, CA.

[2] *California Code of Regulations*. Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[3] *United States Code*, Title 16, Section 470: "National Historic Preservation Act."

undertakings. No federal involvement is included in the proposed project; therefore, the Section 106 process is not applicable.

National Register of Historic Places

The NRHP was established by the NHPA of 1966 as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment."[4] The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American or regional/local history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A property is eligible for the NRHP if it is significant under one or more of the four established criteria:[5]

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

(B) It is associated with the lives of persons who are significant in our past;

(C) It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; and/or

(D) It has yielded, or may be likely to yield, information important in prehistory or history.

Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, and properties that are primarily commemorative in nature are not considered eligible for the NRHP unless they satisfy certain conditions. In general, a resource must be 50 years of age to be considered for the NRHP, unless it satisfies a standard of exceptional importance.

Secretary of the Interior's Standards for the Treatment of Historic Properties

Evolving from the *Secretary of the Interior's Standards for Historic Preservation Projects with Guidelines for Applying the Standards,* which were developed in 1976, the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings* were published in 1995 and codified as 36 CFR 67. Neither technical nor prescriptive, these standards are "intended to promote responsible preservation practices that help protect our Nation's irreplaceable cultural resources."[6] Preservation acknowledges a resource as a document of its history over time and emphasizes

[4] *Code of Federal Regulations*, Title 36, Part 60.2: "Effects of Listing under Federal Law."

[5] *Code of Federal Regulations*, Title 36, Part 60.4: "Criteria for Evaluation."

[6] Weeks, Kay D., and Anne E. Grimmer. 1995. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstruction Historic Buildings.* Washington DC: U.S. Department of the Interior, National Park Service.

stabilization, maintenance, and repair of existing historic fabric. Rehabilitation, while also incorporating the retention of features that convey historic character, also accommodates alterations and additions to facilitate continuing or new uses. Restoration involves the retention and replacement of features from a specific period of significance. Reconstruction, the least used treatment, provides a basis for recreating a missing resource. These standards have been adopted, or are used informally, by many agencies at all levels of government to review projects that affect historic resources.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency, and to provide a summary to any Native American tribe claiming affiliation.

State

California Environmental Quality Act[7]

Pursuant to CEQA, an historical resource is a resource listed in, or eligible for listing in, the California Register of Historical Resources (CRHR). In addition, resources included in a local register of historical resources or identified as significant in a local survey conducted in accordance with state guidelines are also considered historical resources under CEQA, unless a preponderance of the facts demonstrates otherwise. According to CEQA, the fact that a resource is not listed in or determined eligible for listing in the CRHR or is not included in a local register or survey shall not preclude a lead agency, as defined by CEQA, from determining that the resource may be an historical resource as defined in California Public Resources Code (PRC) Section 5024.1.[8] Pursuant to CEQA, a project with an effect that may cause a substantial adverse change in the significance of an historical resource may have a significant effect on the environment.[9]

CEQA also applies to effects on archaeological sites. Archaeological sites may be eligible for the CRHR, and thus would qualify as historical resources under CEQA. If an archaeological site does not satisfy the criteria as an historical resource, but does meet the definition of a unique archaeological resource, it is also subject to CEQA. A unique archaeological resource is defined as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:[10]

(1) It contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.

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[7] *California Public Resources Code*, Division Thirteen, Statutes 21083.2 and 21084.1.

[8] *California Code of Regulations*, Title 14, Chapter 3, CEQA Guidelines, Section 15064.5(a).

[9] *California Code of Regulations*, Title 14, Chapter 3, CEQA Guidelines, Section 15064.5(b).

[10] *California Public Resources Code*, Section 21083.2(g).

(2) It has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) It is directly associated with a scientifically recognized important prehistoric or historic event or person.

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change."[11] Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historical resources surveys, or designated by local landmarks programs may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:[12]

(1) It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) It is associated with the lives of persons important in our past.

(3) It 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.

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

Resources nominated to the CRHR must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance.[13] It is possible that a resource whose integrity does not satisfy NRHP criteria may still be eligible for listing in the CRHP. Similarly, resources that have achieved significance within the last 50 years may be eligible for inclusion in the CRHR provided that enough time has lapsed to obtain a scholarly perspective on the events or individuals associated with the resource.[14]

[11] *California Public Resources Code*, Section 5024.1(a).

[12] *California Public Resources Code*, Section 5024.1(c).

[13] Office of Historic Preservation. Undated. "Technical Assistance Bulletin 6: California Register and National Register, A Comparison (for purposes of determining eligibility for the California Register)." Available at: www.ohp.parks.ca.gov

[14] Office of Historic Preservation. Undated. "Technical Assistance Bulletin 6: California Register and National Register, A Comparison (for purposes of determining eligibility for the California Register)." Available at: www.ohp.parks.ca.gov

California Historical Landmarks[15]

California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the County Board of Supervisors (or the city or town council in whose jurisdiction it is located); be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. The specific standards now in use were first applied in the designation of CHL 770. CHLs 770 and above are automatically listed in the CRHR.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

- The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- Associated with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

California Points of Historical Interest[16]

California Points of Historical Interest (CPHI) are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. CPHI designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the CRHR. No historical resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a CPHI, a resource must meet at least one of the following criteria:

- The first, last, only, or most significant of its type within the local geographic region (city or county).
- Associated with an individual or group having a profound influence on the history of the local area.

[15] Office of Historic Preservation, Department of Parks and Recreation. "California Historical Landmarks Registration Programs." Available at: www.ohp.parks.ca.gov

[16] Office of Historic Preservation, Department of Parks and Recreation. "California Points of Historical Interest Registration Programs." Available at: www.ohp.parks.ca.gov

- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

Native American Heritage Commission

Section 5097.91 of the PRC established the NAHC, whose duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of Native Americans on private lands. Section 5097.98 of the PRC specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

Government Code Sections 6254(r) and 6254.10

These sections of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports, maintained by, or in the possession of the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the Native American Heritage Commission, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a Native American tribe and a state or local agency."

Health and Safety Code, Sections 7050 and 7052

Health and Safety Code, Section 7050.5 declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

Penal Code, Section 622.5

Penal Code, Section 622.5 provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands, but specifically excludes the landowner.

Public Resources Code, Section 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

Local

City of Long Beach Municipal Code

The City has a Cultural Heritage Commission Ordinance (Title 2, Chapter 2.63) that establishes a landmark designation process, as well as the requirement for permits and/or certificates of appropriateness issued by the Cultural Heritage Commission for all "exterior physical changes" to

landmark structures or contributors to designated historic districts. As of October 2008, 130 landmarks and 17 historic districts have been designated.

A resource must meet one or more of the following criteria of significance[17] in order to be designated as a landmark or landmark district:

- (A) It possesses a significant character, interest, or value attributable to the development, heritage or cultural characteristics of the city, the Southern California region, the state or the nation; or
- (B) It is the site of an historic event with a significant place in history; or
- (C) It is associated with the life of a person or persons significant to the community, city, region or nation; or
- (D) It portrays the environment in an era of history characterized by a distinctive architectural style; or
- (E) It embodies those distinguishing characteristics of an architectural type or engineering specimen; or
- (F) It is the work of a person or persons whose work has significantly influenced the development of the city or the Southern California region; or
- (G) It contains elements of design, detail, materials, or craftsmanship that represent a significant innovation; or
- (H) It is a part of or related to a distinctive area and should be developed or preserved according to a specific historical, cultural or architectural motif; or
- (I) It represents an established and familiar visual feature of a neighborhood or community due to its unique location or specific distinguishing characteristic; or
- (J) It is, or has been, a valuable information source important to the prehistory or history of the city, the Southern California region or the state; or
- (K) It is one of the few remaining examples in the city, region, state or nation possessing distinguishing characteristics of an architectural or historical type.[18]

3.4.2 Existing Conditions

The existing conditions for paleontological, archaeological, historic resources and human remains are characterized at the project level of detail. For clarity of analysis and presentation, prehistoric period resources are presented as archaeological resources and historic period resources are presented as historical resources. The Prehistoric Period is defined as the era prior to European contact with native populations, which occurred in the proposed project area in the years 1769 to 1797. Archaeologists generally use the year 1782 as the beginning of the historic period.

3.4.2.1 Paleontological Resources

The geology of the proposed project site consists of a thin layer of Quaternary Alluvium underlain by surficial sediments of older Quaternary terrace deposits, primarily terrestrial but with some marine components (Pico Formation). This terrace deposit is considered to have high sensitivity for paleontological resources. Although the actual depth of these potentially sensitive terrace deposits within the proposed project site is unknown, the location of the closest known previously recorded

[17] City of Long Beach, Cultural Heritage Commission Ordinance, Title 2, Chapter 2.63.050.

[18] Two additional criteria relating to the designation of historic trees as landmarks have recently been added to the City of Long Beach Municipal Code, but they are not relevant to this report and were excluded for that reason.

fossil (identified as LACM 7493) indicates that these deposits may be found very close to the surface. LACM 7493 was found almost directly east of the southern portion of the proposed project site along East Pacific Coast Highway just west of Grand Avenue, and consisted of a specimen of fossil camel (*Camelops*) found at a depth of 8.5 feet below the surface. Several other specimens have also been found in the nearby area. LACM 3260, located east-southeast of the proposed project area along Anaheim Street produced a specimen of fossil bison (*Bison*) at an unknown depth. LACM 1021 (same as LACM 1932) and LACM 3245 were found just east of the north end of the proposed project area along Spring Street near the intersection with Cherry Avenue. LACM 1021 consisted of a fossil mammoth (*Mammuthus*) from an unknown depth, and LACM 3245 produced extensive fossil fish fauna at 37 feet below the surface.

Surface grading or very shallow excavations within the uppermost layers of soil and Quaternary Alluvium are unlikely to uncover significant fossil vertebrates. However, based on the fossil findings previously mentioned, it is likely that deeper excavations of more than 10 feet extending down into older Quaternary terrace deposits may encounter significant fossil vertebrate remains.

These findings are the result of an assessment of in-house data from the Natural History Museum of Los Angeles County[19] and the Geologic Map of the Long Beach Quadrangle[20] to ascertain the potential for paleontological resources at the proposed project site. The Geologic Map of the Long Beach Quadrangle was reviewed to identify the rock units that underlay the proposed project site. The Natural History Museum conducted a thorough search of its paleontology collection records for the locality and specimen data for the proposed project area. The records search indicates that there are no known vertebrate fossil localities recorded within the proposed project site.

3.4.2.2 Archaeological Resources

A records search was conducted at SCCIC, located on the California State University, Fullerton campus, to determine the presence of known archaeological resources within the proposed project site. The U.S. Geological Survey (USGS) 7.5-Minute Series, Long Beach, California, Topographic Quadrangle[21] was reviewed for previously recorded archaeological resources within the proposed project area and within a 1-mile radius. The results of the records search indicate that the proposed project site has never been surveyed for the presence of archaeological resources. Twenty previous archaeological assessments were conducted within 1 mile from the proposed project area resulting in the recordation of one archaeological resource (CA-LAN-837). The single previously recorded resource, CA-LAN-837, is a prehistoric site consisting of a shell midden deposit on the western edge of Signal Hill,[22] approximately a 0.5 mile north of the proposed project area. Consultation was undertaken with the NAHC to identify the presence of known Native American sacred sites. According to the NAHC, no Native American cultural resources are in the sacred lands file for the proposed project site.[23]

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[19] McLeod, Samuel A., Natural History Museum of Los Angeles County, Los Angeles, CA. 29 March 2006. Letter to Natasha Tabares, Sapphos Environmental, Inc., Pasadena, CA.

[20] Dibble, Thomas W. Jr. 1996. Geologic Map of the Long Beach Quadrangle, Los Angeles County, California. Santa Barbara, CA.

[21] U.S. Geological Survey. [1964] Photo revised 1981. 7.5-Minute Series, Long Beach, California, Topographic Quadrangle. Reston, VA.

[22] Fenega, G., Archaeological Research, Inc. 1973. Archaeological Site Survey Record for LAN-837. On file at Sapphos Environmental, Inc., Pasadena, CA.

[23] Singleton, Dave, Native American Heritage Commission, Sacramento, CA. 8 November 2007. Letter to Amy Commendador-Dudgeon, Sapphos Environmental, Inc., Pasadena, CA.

It is unlikely that the proposed project site has the potential to yield archaeological resources due to the historical development of the proposed project area. The ground surface has been highly disturbed by the placement of a petroleum refinery in the northeastern portion of the proposed project area, as well as by construction of buildings in the 1920s and 1930s along the western and southern borders,[24] and the development of the Pacific Electric Railroad along the northern border. In addition to these disturbances, modern grading and excavations required for the Hamilton Bowl / Chittick Field storm water retention basin has likely eliminated the potential for in situ archaeological resources within the proposed project area.

3.4.2.3 Historical Resources

Historic Overview

The City is located in southwestern portion of the County of Los Angeles (County), which dates its earliest non-native settlements in 1771, when Spanish missionaries established Mission San Gabriel Archangel. Ten years later, el Pueblo de Nuestra Señora la Reina de Los Angeles de Porciuncula was founded by colonizers from Mexico in what is now downtown Los Angeles.[25] During the Spanish and subsequent Mexican reign over Alta California, the southern portion of the present-day County of Los Angeles was held in a variety of land grants. Originally part of a 1784 grant to Juan Manuel Nieto, the majority of what now comprises the City was eventually divided into two ranchos, Rancho Los Alamitos and Rancho Los Cerritos, divided by present day Alamitos Avenue.

Long Beach (originally Willmore City) was founded in 1881 from a small portion of the Rancho Los Cerritos as William Willmore's American Colony project. The southern manager for the California Immigrant Union, Willmore was a promoter not only of local real estate but also of the Southern California lifestyle, a concept that was initially overstated but ultimately lasting.[26] As did other promoters in emerging Southern California towns, Willmore capitalized on key locale-specific assets; Willmore City was touted as a healthful seaside resort in newspapers throughout the country. Despite extensive marketing, Willmore's efforts were not successful, and ownership defaulted to Jotham Bixby in 1884. Bixby sold the town to a new syndicate called the Long Beach Land and Water Company, who changed the colony's name to Long Beach. In 1887, the Long Beach Development Company took ownership of the land.[27]

In addition to the promise of a healthful climate and picturesque seascape, the tourist trade and stream of settlers were influenced by the establishment of accessible railway transportation. Competition between the two primary railway companies—the Atchison, Topeka, and Santa Fe and the Southern Pacific—spurred on tourism and settlement and culminated in fares dropped as low as one dollar from the Missouri Valley. The resulting real estate boom in Southern California lasted from 1886 to 1888 and saw the founding of more than 60 new towns in Southern California, and the arrival of approximately 137,000 tourists-cum-residents. By 1889, the real estate boom had collapsed.[28]

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[24] U.S. Geological Survey. 1925. 7.5-Minute Series, Long Beach, California, Topographic Quadrangle. Obtained through Environmental Data Resources, Inc., Milford, CT.

[25] Robinson, W.W. 1959. *Los Angeles from the Days of the Pueblo*, p. 5. San Francisco, CA: California Historical Society.

[26] McWilliams, Carey. 1946. *Southern California: An Island on the Land.* Layton, UT: Gibbs Smith, pp. 96, 119.

[27] Weinman, Lois J., and Gary E. Stickel. 1978. *Los Angeles–Long Beach Harbor Areas Cultural Resource Survey*. Page 63. Prepared for: U.S. Army Corps of Engineers, Los Angeles, CA.

[28] McWilliams, Carey. 1946. *Southern California: An Island on the Land.* Layton, UT: Gibbs Smith, pp. 113–122.

Long Beach sought its share of the new prosperity with promoters and business people able to tout the availability of local rail transportation as an inducement. Trains had been serving the general area since 1869 when Phineas Banning constructed a 22-mile railway from Los Angeles to San Pedro. In 1891, the City Council allowed the Los Angeles Terminal Railroad Company to install a rail line along Ocean Boulevard to connect Long Beach with Los Angeles.[29] By 1898, Southern Pacific had taken over the Long Beach Railroad line along Second Street at Pacific Avenue. From 1895 to 1902, the geographic boundary of most development within Long Beach expanded northwest to Anaheim Street (north) and Monterey Avenue (west) to accommodate the growing population, which had increased to approximately 4,000 residents.

By the turn of the 20th century, Long Beach's economy seemed fully dependent on tourism. In the early 20th century, however, another industry began to emerge in Long Beach to rival tourism. In 1905, the Los Angeles Dock and Terminal Company purchased the 800 acres of marshland that had been included in the original sale of the town to the Long Beach Development Company (1887) and began to improve the area in preparation for shipping. Beginning in 1906, the San Gabriel River was dredged, and a 1,400-foot turning basin and three channels were created.[30] A 500-foot-long municipal wharf was constructed on Channel 3 in 1911, and the Port of Long Beach opened in June 1911. The City regained its substantially improved, 800 acre of marshlands-turned-harbor in early 1917 after devastating floods in 1914 and 1916 caused the collapse of the Los Angeles Dock and Terminal Company. The harbor ultimately played a role in wartime shipping, including the transportation of ships, food, clothing, and munitions, as well as the construction of ships and submarines, among the many other World War I support efforts in which Long Beach residents engaged. The following year, Long Beach and the U.S. Army Corps of Engineers (USACOE) permanently established regular navigation between the Los Angeles and Long Beach inner harbors by improving the Cerritos Channel.[31,32]

In addition to the tourism trade and nascent shipping industry at the harbor, agriculture played a role in Long Beach's economy. Willmore's vision of a seaside resort town with light agricultural uses was close to being a reality; however, agriculture was not as important economically in Long Beach as it was in many other Southern California cities and towns. Many small-scale family farms, some with livestock, were scattered throughout the rural areas of the city. Other small- and mid-sized farms, ranches, and dairies thrived to the north and east of the growing downtown core as far as Anaheim Street and east to about Temple Avenue in the early 20th century and later at Signal Hill.[33]

A series of annexations to Long Beach in the 1900s, including the absorption of Alamitos Beach (1905) to the east, Carroll Park (1908), and Belmont Heights (1911); convenient transportation; seaside amenities; and a burgeoning harbor industry helped increase the permanent local

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[29] Johnson Heumann Research Associates. 1988. *Expanded Downtown Long Beach Historic Survey, Final Report*. City of Long Beach, Office of Neighborhood and Historic Preservation, p. 13.

[30] Weinman, Lois J., and Gary E. Stickel. 1978. *Los Angeles–Long Beach Harbor Areas Cultural Resource Survey*. Page 63. Prepared for: U.S. Army Corps of Engineers, Los Angeles, CA.

[31] Weinman, Lois J., and Gary E. Stickel. 1978. *Los Angeles-Long Beach Harbor Areas Cultural Resource Survey*. Page 64. Prepared for: U.S. Army Corps of Engineers, Los Angeles, CA.

[32] Berner, Loretta. 1990. "A Step Back in Time." In *Shades of the Past. Journal of the Historical Society of Long Beach*, ed. Lorette Berner. Long Beach, CA, p. 67.

[33] Ward, Harry E. 1976. Untitled. In *Long Beach As I Remember It, 1776–1976*, ed. by Donald E. Van Liew. Los Alamitos, CA: Hwong Publishing Company, p. 45.

population.[34,35] Sanborn maps indicate that from 1902 to 1905, Long Beach's population tripled from approximately 4,000 to 12,000. By 1910, the population was 17,809,[36] and the city had expanded to approximately 10 square miles.[37]

In 1921, the discovery of oil in Signal Hill by the Shell Oil Company brought radical changes to Long Beach, as the ownership, production, and sale of oil became the city's primary economic industry.[38] The field in Signal Hill proved remarkably rich in oil, producing 859 million barrels of oil and more than 100 million cubic feet of natural gas in the first 50 years. Speculators, promoters, and experienced oilmen descended on Signal Hill, competing for mineral leases.[39] Although Signal Hill was an unincorporated island within the City, the building boom resulting from oil production in Signal Hill had a dramatic effect on Long Beach's population.[40] From 1920 to 1925, the population more than doubled, growing from 55,000 in 1920 to an estimated 135,000 in 1925.[41,42] The discovery of oil had created millionaires out of ordinary citizens and investors, and the effects were felt throughout the City, particularly downtown and along the shoreline.

After the 1929 stock market crash, Long Beach's diversified economy allowed the city to weather the first years of the Depression relatively well. In the decade leading up to the stock market crash, between 1920 and 1929, Long Beach's population tripled. Development slowed significantly after the crash, as it did in communities across the country, accompanied by a corresponding drop in the rate of population increase, slowing new construction.

In March 1933, the City was hit by a magnitude-6.3 earthquake that toppled masonry buildings, shook houses and apartments off their foundations, damaged and destroyed schools and churches, and disabled the City's natural gas service. Aftershocks continued for over a year. Reconstruction was financed with federal reconstruction grants and loans, which, coupled with the activity generated through rebuilding, rejuvenated the local economy.[43] Many buildings that were repaired or reconstructed during this period incorporated the Art Deco or Streamline Moderne styles popular at the time. In 1935, funding provided by the federal Works Progress Administration

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[34] Mullio, Cara, and Jennifer Volland. 2004. *Long Beach Architecture: The Unexpected Metropolis*. Page 23. Santa Monica, CA: Hennessey and Ingalls.

[35] Weinman, Lois J., and Gary E. Stickel. 1978. *Los Angeles-Long Beach Harbor Areas Cultural Resource Survey*. Page 63. Prepared for: U.S. Army Corps of Engineers, Los Angeles, CA.

[36] U.S. Census Bureau. 1910. Census records for the City of Long Beach. Available at: City of Long Beach Office of Neighborhood and Historic Preservation.

[37] Harshbarger, Tom. 1999. "History in a Seashell." In *California State University Long Beach, University Magazine Online*, 3(1). Available at: http://www.csulb.edu

[38] Robinson, W.W. 1948. *Long Beach: A Calendar of Events in the Making of a City*. Page 14. Reprinted by: Title Insurance and Trust Company, Los Angeles, CA. Available at: City of Long Beach Office of Neighborhood and Historic Preservation.

[39] Berner, Loretta. 1995. "Al Brown Remembers the Pike." In *Shades of the Past. Journal of the Historical Society of Long Beach*, ed. by Loretta Berner. Long Beach, CA, pp. 18–19.

[40] Robinson, W.W. 1948. *Long Beach: A Calendar of Events in the Making of a City*. Page 14. Reprinted by: Title Insurance and Trust Company, Los Angeles, CA. Available at: City of Long Beach Office of Neighborhood and Historic Preservation.

[41] Johnson Heumann Research Associates. 1988. *Expanded Downtown Long Beach Historic Survey, Final Report*. Page 14. City of Long Beach, Office of Neighborhood and Historic Preservation.

[42] U.S. Census Bureau. 1920. Census records for the City of Long Beach. Available at: City of Long Beach Office of Neighborhood and Historic Preservation.

[43] Mullio, Cara, and Jennifer Volland. 2004. *Long Beach Architecture: The Unexpected Metropolis*. Page 31. Santa Monica, CA: Hennessey and Ingalls.

(which later became the Works Projects Administration) was used to build and improve parks and transportation facilities, as well as civic and recreational buildings throughout the City, and the Art Deco style was the prominent style of architecture used.

Development of the Proposed Project Site

The recreational area known as Hamilton Bowl / Chittick Field is situated at the intersection of East Pacific Coast Highway and Walnut Avenue, just northeast of downtown Long Beach. The area was well known to flood and was first designated as a drainage reservoir in 1915. This section of Long Beach suffered a damaging flood in 1935, which led to the construction of Hamilton Bowl and an associated pump station by the USACOE in 1936.[44] The site, formerly known as "the sump," was enlarged and improved to hold the excess storm water discharge from the Los Angeles River watershed. The site was designed to be used during the summer months for recreation and to act as a drainage reservoir during the rainy season.[45,46] A comparison of the Sanborn maps dated 1923 and 1950 indicates that approximately 72 parcels, many of which contained single-family dwellings, were cleared to make room for the project.[47] The purpose of the Art Deco–style Low-flow Pump Station was to pump the excess water back into the Los Angeles River channel when storm waters receded.

A dedication ceremony for the facility planned for October 1936 was cancelled due to heavy rains, presaging a series of local flood events in subsequent years.[48] The following year, another season of torrential rains caused havoc throughout Long Beach, causing the Hamilton Bowl to overflow and forcing the evacuation of numerous families from their homes. The City attempted to transfer ownership and management of the Hamilton Bowl over to the County Flood Control District; however, after initialing agreeing to annex the facility to the flood control district, the County refused, arguing it was the City's responsibility to manage the site.[49,50] Despite enlarging the Hamilton Bowl to a depth of 50 feet, the basin notoriously flooded during the 1930s and 1940s.[51,52] By 1954, officials had come to the realization that the pump station was too small for the amount of rain that fell each year and plans were underway to relieve the stress put forth on the station.[53] At that time, accumulated floodwaters were pumped from the bowl through a gravity line to a pumping station 2.5 miles west and then into the flood control channel.[54] A new pump station, located along Gaviota Avenue and north of East Pacific Coast Highway, was constructed circa 1972.

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[44] *Press-Telegram*. "City's Water Reserve Stored Here; Flood Drainage Project Ready; Plans for Hamilton Bowl Dedication are Being Made by Long Beach City Officials." 5 October 1936.

[45] *Press-Telegram*. "Drain Bowl Annexed to Flood Zone." 24 August 1937.

[46] *Press-Telegram*. "Flood Drainage Project Ready." 5 October 1936.

[47] Sanborn Map Company. [1923] 1950. "Long Beach, California." Volume 2, Map 243.

[48] *Press-Telegram*. "Hamilton Bowl Dedication Cancelled; Affair Postponed as Rain Leaves Reservoir in Muddy Shape" 23 October 1936.

[49] *Press-Telegram*. "Drain Bowl Annexed to Flood Zone." 24 August 1937.

[50] *Press-Telegram*. "Sump Upkeep Ruled Duty of the City; County Disclaims Responsibility for Hamilton Drain Bowl." 18 December 1937.

[51] *Los Angeles Times*. "More Gale Dean Hunted" 26 September 1939.

[52] *Los Angeles Times*. "Army to Act in Power Strike" 23 February 1944.

[53] *Los Angeles Times*. "Drain System to L. B. to be Started Soon." 6 June 1954.

[54] *Los Angeles Times*. "Drain System for L. B. to be Started Soon." 6 June 1954.

A single-family residence, designated bachelor quarters on the original blueprints, was constructed in 1953 near the southeast corner of Walnut Avenue and Alamitos Avenue. Although the parcel is sectioned off from the Hamilton Bowl with a chain-linked fence, it was once considered to be part of Hamilton Bowl. The residence was constructed to house the caretaker of the Hamilton Bowl and was later remodeled in 1963 and renamed operator quarters on the blueprints. It is unclear for how long the residence was directly connected to the drainage sump, but the residence is now privately owned and is not part of the proposed project. It was about this same time that public restrooms for the recreational field were constructed. According to historic aerials, the public restrooms were constructed sometime between 1953 and 1960 and were remodeled at a later time (date unknown).

Art Deco Architecture

The rebuilding of Long Beach following the devastating earthquake of 1933 was heavily influenced by the architectural style that became known as Art Deco. Art Deco was introduced to America in 1922 when the *Chicago Tribune* held a competition for the design of its new building. Eliel Saarinen designed the second place winner, an ethereal skyscraper with characteristics of Art Deco design, which was highly influential upon architects in the United States. The style was popularized worldwide by the Paris 1925 *Exposition Internationale des Arts Décoratifs et Industriels Modernes*. Art Deco designs incorporated stylized classical forms, zigzags, and vertical accents.[55,56] In the United States, this type of architecture was particularly favored by the federal Works Progress Administration (which later became the Works Projects Administration), who combined it with Beaux Arts classicism to produce the PWA Moderne[57] style often used for government buildings in the 1930s.

The Low-flow Pump Station built in 1935/1936 incorporates stylistic elements of Art Deco design. Art Deco buildings are characterized by smooth wall surfaces broken by piers and enlivened zigzags, chevrons, low-relief geometrical patterns, often in the form of parallel straight lines, and stylized floral motifs. Ornamentation is mostly concentrated around window and door openings with stylized string courses along roof edges or parapets.[58] Roofs are flat or step back and up in a series of increments. As opposed to the Streamline Moderne style, which gained popularity in the 1930s, a vertical emphasis is often pronounced in the Art Deco style.[59]

Resource Characterization

A records search for the proposed project was conducted at the SCCIC to determine the known presence of historical resources within the proposed project site. The USGS 7.5-Minute Series, Long Beach, California, Topographic Quadrangle was reviewed for previously recorded historical resources within the proposed project area and within a 0.5-mile radius. In addition, the Historic

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[55] McAlester, Virginia, and Lee McAlester. 1984. *A Field Guide to American Houses*. Page 465. New York, NY: Alfred A. Knopf.

[56] Gowans, Alan. 1991. *Styles and Types of North American Architecture*. New York, NY: HarperCollins.

[57] PWA refers to the Public Works Administration established in 1933 and was intended to fund the construction of public works projects. Similarly, the WPA was established in 1932 under the Herbert Hoover (originally called the Reform Finance Corporation) and employed people on relief until 1943. WPA employees constructed many public buildings, projects, and roads. Although separate entities, both the WPA and the PWA funded similar construction projects and were often mistaken for one another.

[58] Blumenson, John J.-G. 1977. *Identifying American Architecture*. Page 77. New York, NY: W.W. Norton & Company.

[59] McAlester, Virginia, and Lee McAlester. 1984. *A Field Guide to American Houses*. Page 465. New York, NY: Alfred A. Knopf.

Resources Inventory was reviewed for previously recorded historical resources within the proposed project site and surrounding vicinity. The records search revealed that the proposed project site has not been previously surveyed for historical resources, and no historical resources have been designated or listed within the project site and surrounding vicinity. The field survey and background research indicated that the proposed project site has been developed as a park as early as the 1930s. The intensive-level historical resources survey of the proposed project site resulted in the determination that the there are three buildings and one site located within the proposed project site boundaries and that one of these, the Low-flow Pump Station, qualifies as a historical resource as defined by CEQA:

- Low-flow Pump Station (1935/36)
- Hamilton Bowl Pump Station (circa 1972)
- Public Restrooms (between 1953 and 1960)
- Hamilton Bowl (1935/1936)

The Low-flow Pump Station, the Public Restrooms, and the Hamilton Bowl are older than 45 years of age and were carried forward for evaluation of historical significance: The third building within the proposed project site, the Hamilton Bowl Pump Station, was not evaluated for historical significance because it was constructed during the 1970s and is therefore less than 45 years old. In addition, a field inspection and preliminary research of the Hamilton Bowl Pump Station indicated that the building is not of exceptional historical or architectural importance.

Low-flow Pump Station (Walnut Avenue, Parcel No. 7216-012-902). Located at the western edge of the proposed project site along Walnut Avenue, the Low-flow Pump Station was constructed 1935/1936 and displays Art Deco styling. Character-defining features of the pump station include the following:

- Poured concrete walls
- Buttresses with vertical scoring
- Metal sash windows
- Flat roof
- Geometric designs along roofline

The Low-flow Pump Station was constructed during a key time in Long Beach's architectural history. Although the pump station was not constructed as a direct result of the 1933 Long Beach Earthquake, it was constructed at a time when the City was being rebuilt. The pump station exhibits integrity as a good example of Art Deco architecture.

The Low-flow Pump Station was a direct result of the flooding that occurred in that area of Long Beach. The sump, as the area was once called, was located south of East 20th Avenue and west of Walnut Avenue and was created in 1919 to support flood waters. The area was expanded in 1935 and the pump station was constructed. The funding for the pump station was part of a large construction effort put forth by USACOE. Although there is no evidence showing that the Low-flow Pump Station was constructed under the Works Progress Administration or any other New Deal program, it was a federally funded project. During this time, many public buildings were constructed using the Art Deco style. The Low-flow Pump Station exhibits integrity of location, design, setting, materials, workmanship, feeling, and association, and retains all of its character-defining features including smooth concrete walls, metal sash windows, flat roof, buttresses with vertical scoring, and geometric designs along the roofline.

The Low-flow Pump Station satisfies the definition of a historical resource pursuant to CEQA (State CEQA Guidelines Section 15064.5(3)). It meets Criterion 3 for listing in the CRHR for its embodiment of the distinctive characteristics of an Art Deco style industrial building constructed by the federal government in Long Beach during the 1930s. In addition, the Low-flow Pump Station appears eligible for listing in the NRHP under Criterion C at the local level of significance as an example of a federal industrial building built in the Art Deco style in the 1930s. The Low-flow Pump Station also qualifies for designation as a City Landmark under three criteria: Criterion A, for its historical importance as a record of local and federal government flood control efforts; Criterion D, for its portrayal of Long Beach in the 1930s when the Art Deco style was highly influential; and Criterion E, for its embodiment of the distinguishing characteristics an architectural type, a public industrial building in the Art Deco style.

Public Restrooms (Walnut Ave, Parcel No. 7216-012-902). The Public Restrooms were built between 1953 and 1960 and display post-war utilitarian styling. Located on a sloped site, the Public Restrooms project over the ground on exposed metal supports. The building is rectangular in plan, with poured concrete walls covered in stucco, a shed roof, horizontal metal louver windows, and a metal staircase that spans a flood control ditch. The Public Restrooms were constructed within the Hamilton Bowl / Chittick Field to support its recreational function as a field that is actively used during the summer months. Alterations to the building include replacements of doors, window screens, and lighting with vandal-proof equivalents.

An example of a modest, post-war utilitarian style, the Public Restrooms are not historical resources as defined by CEQA. The building does not meet the criteria for listing in the CRHR or the NRHP. The building has not made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (Criterion A/1); it is not associated with the lives of persons important to local, California, or national history (Criterion B/2); it does not possess high artistic values or embody the distinctive characteristics of a type, period, region, or method of construction (Criterion C/3); and it has no potential to yield information important to the prehistory or history of the local area, California, or the nation (Criterion D/4). In addition, the building does not meet any of the criteria of significance for designation as a City Landmark.

Hamilton Bowl (Walnut Avenue, Parcel No. 7216-012-902). Established in 1935 on a property formerly known as "the sump" and developed as a winter reservoir / retention basin and summer park, the Hamilton Bowl is a simple catch basin for storm water discharge from the Los Angeles River watershed. The basin measures approximately 1,200 feet by 800 feet. In addition to three buildings, the property contains softball fields, stadium lights, and bleachers. It is in fair condition and retains a modest level of integrity.

The Hamilton Bowl is not a historical resource as defined by CEQA. The Hamilton Bowl does not meet the criteria for listing in the CRHR or the NRHP. When considered in light of a context of local flood water control, engineering achievements, USACOE projects, or the development of recreational facilities, the Hamilton Bowl has not made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (Criterion A/1); it is not associated with the lives of persons important to local, California, or national history (Criterion B/2); it does not embody the distinctive characteristics of a type, period, region, or method of construction, nor does it possess high artistic value (Criterion C/3); and it has no potential to yield information important to the prehistory or history of the local area, California, or the nation (Criterion D/4). In addition, the Hamilton Bowl does not meet any of the criteria of significance for designation as a City Landmark or Landmark District.

3.4.2.4 Human Remains

A records search was conducted at SCCIC for the presence of former historic period cemeteries within the vicinity of the proposed project site. In addition, historic maps were reviewed for the presence of historic cemeteries.[60,61,62] No evidence of former cemeteries on the proposed project site was discovered. A records search with NAHC did not yield the presence of known Native American sacred sites, including informal burials within the proposed project site.[63]

3.4.3 Impact Analysis

3.4.3.1 Paleontological Resources

Appendix G of the State CEQA Guidelines indicates that a project may have a significant effect on the environment if it would directly or indirectly destroy a unique paleontological resource or a unique geological feature.

The proposed project would be expected to result in significant impacts to cultural resources related directly or indirectly to the destruction of a unique paleontological resource or unique geologic feature, therefore requiring the consideration of mitigation measures. The proposed project site is located within an area underlain by older Quaternary terrace deposits, which are considered to have high sensitivity for paleontological resources and, therefore, have the potential to reveal important vertebrate fossils that can contribute to the life history of the area. While the precise depth of these older Quaternary terrace deposits within the proposed project site is unknown, they are likely on or near the surface of the Hamilton Bowl, which is a man-made basin. Therefore, implementation of the proposed project is anticipated to result in excavations into these older Quaternary terrace deposits. As a result, the proposed project has the potential to result in significant impacts to cultural resources related directly or indirectly to the destruction of a unique paleontological resource, therefore requiring the consideration of mitigation measures to reduce impacts to below the level of significance.

3.4.3.2 Archaeological Resources

Archaeological resources under CEQA may meet the definition of either a historical resource or an unique archaeological resource. A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. Substantial adverse change in the significance of a historical resource is defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired. The significance of a historical resource would be significantly impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the

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[60] U.S. Geological Survey. 1925. 7.5-Minute Series, Long Beach, California, Topographic Quadrangle. Obtained from: Environmental Data Resources, Inc., Milford, CT.

[61] U.S. Geological Survey. 1947. 15-Minute Series, Downey, California, Topographic Quadrangle. Obtained from: Environmental Data Resources, Inc., Milford, CT.

[62] U.S. Geological Survey. 1951. 7.5-Minute Series, Long Beach Vicinity 20F3, Topographic Quadrangle. Obtained from: Environmental Data Resources, Inc., Milford, CT.

[63] Singleton, Dave, Native American Heritage Commission, Sacramento, CA. 8 November 2007. Letter to Amy Commendador-Dudgeon, Sapphos Environmental, Inc., Pasadena, CA.

CRHR, a local register of historic resources pursuant to Section 5020.1(k) of the PRC, or a historical resources survey meeting the requirements of Section 5024.1(g) of the PRC. With regard to unique archaeological resources, CEQA states that when a project will cause damage to a unique archaeological resource, reasonable efforts must be made to preserve the resource in place or leave the resource in an undisturbed state. Mitigation measures are required to the extent that a unique archaeological resource may be damaged or destroyed by a project.

The proposed project would not result in significant impacts to cultural resources related to a substantial adverse change in the significance of a prehistoric archeological resource. It is not anticipated that the excavations associated with the proposed project will encounter undisturbed, native soils. There are no known prehistoric resources within the proposed project area. Due to the level of disturbance that has occurred with historical development and construction, agriculture and landscaping, it is unlikely that such resources are present within the proposed project area.

3.4.3.3 Historical Resources

Under CEQA, a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. Substantial adverse change in the significance of a historical resource is defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired. The significance of a historical resource would be significantly impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR, a local register of historic resources pursuant to Section 5020.1(k) of the PRC, or historical resources survey meeting the requirements of Section 5024.1(g) of the PRC. In general, a project that follows the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and associated guidelines shall be considered as mitigated to below the level of significance.[64]

The proposed project would result in a significant direct impact to one historical resource, the Low-flow Pump Station, which would be demolished as a result of implementation of the proposed project The Low-flow Pump Station, is a historical resource as defined by CEQA [PRC 5024.1, 14 CCR Section 4850(d)(1)].

Demolition of a historical resource would result in a significant adverse change to cultural resources related to historical resources, therefore requiring the consideration of mitigation measures. Although not capable of reducing impacts to below the level of significance, one mitigation measure (Cultural-2) has been identified that would reduce project impacts on the one historical resource to the maximum extent practicable.

The incremental impact of the proposed project, when evaluated in relation to past, present, or reasonably foreseeable, probable future projects, would be expected to cause significant impacts to historical resources in the City. Therefore, implementation of the proposed project would cause an incremental impact when considered with the related past, present, or reasonably foreseeable, probable future project.

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[64] Weeks, Kay D., and Anne E. Grimmer. 1995. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstruction Historic Buildings*. Washington, DC: U.S. Department of the Interior, National Park Service.

3.4.3.4 Human Remains

While a significance threshold for impacts to human remains is not explicitly stated in CEQA, Appendix G of the State CEQA Guidelines indicates that any disturbance of human remains could potentially be considered an impact to cultural resources, particularly with respect to Native American graves and burials.

The proposed project would not be expected to directly or indirectly disturb human remains, including those interred outside of formal cemeteries. The results of the archaeological records search, review of historic maps,[65] the NAHC Sacred Lands File search,[66] and the intensive level historical resources survey indicate that no historic period or Native American burial grounds are located within or in proximity to the proposed project site. Although there are no known burial sites within the proposed project area, the potential disruption of an unanticipated encounter of human remains during ground-disturbing activities constitutes a significant impact requiring the consideration of a mitigation measure (Cultural-3).

3.4.4 Mitigation Measures

Paleontological Resources

Measure Cultural-1

The impacts to cultural resources related directly or indirectly to the destruction of a unique paleontological resource from the project shall be reduced to below the level of significance through the salvage and disposition of paleontological resources that result from all earthmoving activities involving disturbances of the older Quaternary terrace deposits. Ground-disturbing activities include, but are not limited to, drilling, excavation, trenching, and grading. If paleontological resources are encountered during ground-disturbing activities, the applicant, under the direction of the City of Long Beach Department of Development Services, shall be required to and be responsible for salvage and recovery of those resources consistent with standards for such recovery established by the Society of Vertebrate Paleontology.[67]

Because the precise depth of strata considered highly sensitive for paleontological resources is unknown, the applicant, under the direction of the City of Long Beach Department of Development Services, shall be responsible for and shall ensure implementation of construction monitoring by a qualified paleontological monitor during all earthmoving activities that involve disturbance of native soil (i.e., soil that has not been artificially introduced and has not accumulated through Hamilton Bowl's function as a flood control basin). The paleontological monitor shall coordinate a pre-construction briefing to provide information regarding the protection of paleontological resources. Construction personnel shall be trained in procedures to be followed in the event that a fossil site or fossil occurrence is encountered during construction.

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[65] Environmental Data Resources, Inc. 2007. Historical Topographic Map Report for Kroc Community Center, Long Beach, CA 90806. Inquiry Number 2015389.1. Milford, CT.

[66] Singleton, Dave, Native American Heritage Commission, Sacramento, CA. 6 September 2007. Letter to Amy Commendador-Dudgeon, Sapphos Environmental, Inc., Pasadena, CA.

[67] Society of Vertebrate Paleontology. Accessed 11 December 2008. "Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources: Standard Guidelines." Available at: http://www.vertpaleo.org/society/polstatconformimpactmigig.cfm

An information package shall be provided for construction personnel not present at the initial pre-construction briefing.

Should a potentially unique paleontological resource be encountered, a qualified paleontologist shall be contacted and retained by the City of Long Beach. The Society for Vertebrate Paleontology defines a qualified paleontologist as

> "A practicing scientist who is recognized in the paleontologic community and is proficient in vertebrate paleontology, as demonstrated by:
>
> 1. Institutional affiliations or appropriate credentials,
> 2. Ability to recognize and recover vertebrate fossils in the field,
> 3. Local geological and biostratigraphic expertise,
> 4. Proficiency in identifying vertebrate fossils, and
> 5. Publications in scientific journals."[68]

If fossil localities are discovered, the paleontologist shall proceed according to guidelines offered by the Society for Vertebrate Paleontology.[69] This includes the controlled collection of fossil and geologic samples for processing, screen washing to recover small specimens (if applicable), and specimen preparation to a point of stabilization and identification.

All significant specimens collected shall be appropriately prepared, identified, and catalogued prior to their placement in a permanent accredited repository, such as the Natural History Museum of Los Angeles County. The qualified paleontologist shall be required to secure a written agreement with a recognized repository, regarding the final disposition, permanent storage, and maintenance of any significant fossil remains and associated specimen data and corresponding geologic and geographic site data that might be recovered as a result of the specified monitoring program. The written agreement shall specify the level of treatment (e.g., preparation, identification, curation, and cataloguing) required before the fossil collection would be accepted for storage. In addition, a technical report shall be completed. If the fossil collection is unable to be placed in an accredited repository, the collection may be donated by the City of Long Beach Department of Development Services to local schools for educational purposes.

Daily logs shall be kept by the qualified paleontological monitor during all monitoring activities. The daily monitoring log shall be keyed to a location map to indicate the area monitored, the date, and the assigned personnel. In addition, this log shall include information of the type of rock encountered, fossil specimens recovered, and associated specimen data. Within 90 days of the completion of any salvage operation or monitoring activities, a mitigation report shall be submitted to the Historic Preservation Office / Officer for the City of Long Beach with an appended, itemized inventory of the specimens. The report and inventory, when submitted to the City of Long Beach Department of Development Services, will signify the completion of the program to mitigate impacts to paleontological resources.

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[68] Society of Vertebrate Paleontology. Accessed 11 December 2008. "Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources: Standard Guidelines." Available at: http://www.vertpaleo.org/society/polstatconformimpactmigig.cfm

[69] Society of Vertebrate Paleontology. Accessed 11 December 2008. "Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources: Standard Guidelines." Available at: http://www.vertpaleo.org/society/polstatconformimpactmigig.cfm

Completion of this mitigation measure shall be monitored and enforced by the City of Long Beach Department of Development Services.

Historical Resources

Measure Cultural-2

Impacts related to the loss of an historical resource, the Low-flow Pump Station, shall be reduced through archival documentation of as-found conditions. Prior to issuance of demolition permits, the applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that documentation of the Low-flow Pump Station is completed by the applicant in the form of a Historic American Buildings Survey that shall comply with the *Secretary of the Interior's Standards for Architectural and Engineering Documentation*. The documentation shall include large-format photographic recordation; a detailed historic narrative report including description, history, and statement of significance; measured architectural drawings (as built and/or current conditions); and a compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards for History and/or Architectural History. The original archival-quality documentation shall be offered as donated material to the National Park Service Heritage Documentation Program, Historic American Buildings Survey, for inclusion in the Library of Congress. Archival copies of the documentation also would be submitted to the Long Beach Public Library; the Historical Society of Long Beach; California State University, Long Beach; the Office of Historic Preservation; and the South Central Coastal Information Center where it would be available to local researchers.

Completion of this mitigation measure shall be monitored and enforced by the City of Long Beach Department of Development Services.

Human Remains

Measure Cultural-3

Although the discovery of human remains is not anticipated during ground-disturbing activities for the project, a process has been delineated by the State of California for addressing the unanticipated discovery of human remains:

Unanticipated Discovery of Human Remains (Public Resources Code 5097): The Los Angeles County Coroner shall be notified within 24 hours of the discovery of human remains. Upon discovery of human remains, there shall be no further excavation or disturbance of the site or any of that area reasonably suspected to overlie adjacent human remains until the following conditions are met:

- The Los Angeles County Coroner has determined that no investigation of the cause of death is required, and
- If the remains are of Native American origin, the descendants from the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work, 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.

3.4.5 Level of Significance after Mitigation

Implementation of mitigation measures Cultural-1 and Cultural-3 would reduce impacts to cultural resources related to an adverse change in the significance of paleontological resources and human remains to below the level of significance.

Implementation of mitigation measures Cultural-2 would reduce significant direct and cumulative impacts to historical resources scheduled for demolition to the maximum extent feasible. However, the demolition of this historical resource would still remain a significant adverse impact.

3.5 GEOLOGY AND SOILS

As a result of the Initial Study,[1] the City of Long Beach (City) determined that the proposed Kroc Community Center (proposed project) had the potential to result in impacts to geology and soils. Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report. This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts from the proposed project and to identify potential alternatives.

The analysis of geology and soils consists of a summary of the regulatory framework that guides the decision-making process, a description of the existing conditions at the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and the level of significance after mitigation. The potential for impacts to geology and soils has been analyzed in accordance with the methodologies and information provided by the City Land Use element of the City General Plan,[2] the City General Plan Seismic Safety element,[3] the U.S. Geological Survey (USGS) 7.5-Minute Series Topographic Quadrangle,[4] and the Fault Rupture Hazard Zones in Alquist-Priolo Earthquake Fault Zone (APEFZ) Maps.[5]

3.5.1 Regulatory Framework

This regulatory framework identifies the federal, state, and local statutes and policies that relate to geology and soils and must be considered by the City during the decision-making process for projects that involve grading (excavation or fill), modification of existing structures, or construction of new structures.

State

State of California Geological Survey

The State of California Geological Survey (CGS; formerly the California Division of Mines and Geology) identifies several earth resource issues that should be taken into consideration when evaluating whether the proposed project would likely be subject to geologic hazards, particularly related to earthquake damage. These considerations include both the potential for existing geologic and soil conditions to pose a risk to the proposed project and the potential for the proposed project to result in an impact to the existing geologic and soil conditions by creating or exacerbating a geologic hazard.

The CGS establishes regulations related to geologic hazards (e.g., faulting, liquefaction, seismically induced landslides, and ground shaking) as they affect people and structures. These regulations include

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[1] City of Long Beach, Department of Development Services. 16 July 2007. *Kroc Community Center Initial Study.* Prepared by: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Long Beach, Department of Planning and Building. July 1991. *City of Long Beach General Plan, Land Use Element.* Long Beach, CA.

[3] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Seismic Safety Element.* Long Beach, CA.

[4] California Department of Conservation, Division of Mines and Geology. 1966. *Minerals of California Volume (1866–1966).* Bulletin 189. Los Angeles, CA.

[5] California Department of Conservation. 2007. *Fault-Rupture Hazard Zones in California.* Special Publication No. 42. Sacramento, CA.

the APEFZ Act and Seismic Hazards Mapping Program (SHMP), described below. The CGS also issues guidelines for the evaluation of geologic and seismic factors that may impact a project or that a project may affect. The guidelines that are most applicable are as follows:

- CDMG Special Publication 42, Guidelines to Geologic/Seismic Reports[6]
- CDMG Special Publication 46, Guidelines for Geologic/Seismic Considerations in Environmental Impact Reports[7]
- CDMG Note 49, Guidelines for Evaluating the Hazard of Surface Fault Rupture[8]

Each guideline provides checklists and outlines to help ensure a comprehensive report of geologic and seismic conditions. Although not mandatory in all their detail, these guidelines provide assistance in assuring completeness of geologic and seismic studies conducted for a project.

Alquist-Priolo Earthquake Fault Zone Act of 1972

The CGS has delineated special study zones along known active or potentially active faults in California pursuant to the APEFZ Act of 1972.[9] The state delegates the authority to local government to regulate development within APEFZ. Construction of habitable structures is not permitted over potential rupture zones. According to *Fault-Rupture Hazard Zones in California, Special Publication No. 42,* [10] no faults are known to exist beneath the site, and the proposed project site is not in the Alquist-Priolo Earthquake Fault Zone. The Newport-Inglewood fault zone is the most significant fault system in the vicinity of the proposed project and a portion known as the Cherry Hill segment is located approximately 0.2 mile to the northeast.[11,12]

Seismic Hazards Act of 1990

The CGS has also identified Seismic Hazard Zones that are delineated in accordance with the SHMP of the Seismic Hazards Act (Act) of 1990.[13] The Act is "to provide for a statewide seismic hazard mapping and technical advisory program to assist cities and counties in fulfilling their responsibilities for protecting the public health and safety from the effects of strong ground shaking, liquefaction, landslides, or other ground failure and other seismic hazards caused by earthquakes." The proposed project is included on the Long Beach Quadrangle Seismic Hazard Zone Map.[14] According to the Earthquake Shaking Potential for the Los Angeles Metropolitan Region Map, the Long Beach area is in

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[6] California Department of Conservation, Division of Mines and Geology. 1997 (Revised). *Fault-Rupture Hazard Zones in California.* Special Publication 42. Los Angeles, CA.

[7] California Department of Conservation, Division of Mines and Geology, 1986. *Guidelines for Geologic/Seismic Considerations in Environmental Impact Reports.* Special Publication No. 46. Sacramento, CA.

[8] California Department of Conservation, Division of Mines and Geology, 1998. *Guidelines for Evaluating the Hazard of Surface Fault Rupture.* Note 49. Sacramento, CA.

[9] California Public Resources Code, Section 2621 et. seq.: *Alquist-Priolo Earthquake Fault Zoning Act.*

[10] California Department of Conservation, Division of Mines and Geology. 1997 (Revised). *Fault-Rupture Hazard Zones in California.* Special Publication 42. Los Angeles, CA.

[11] California Department of Conservation. 2007. Web site. "Seismic Hazards Zonation Program." Available at: htt://gmw.consrv.ca.gov/shmp/index.htm

[12] Charles W. Jennings Database. 1994. *Fault Activity Map of California and Adjacent Areas.* Geologic Data Map No. 6.

[13] California Public Resources Code, Section 2690 et. seq.: *Seismic Hazards Mapping Act.*

[14] California Department of Conservation, Division of Mines and Geology. 25 March 1999. *Seismic Hazards Zones Map: Long Beach Quadrangle.* Available at: http://gmw.consrv.ca.gov/shmp/download/pdf/ozn_longb.pdf

the median range on the scale of earthquake intensity.[15] However, according to Plate 7 of the City's Seismic Safety element,[16] the proposed project is located in a portion of the City where the potential for liquefaction to occur is suspected to be minimal and landslides are not anticipated to occur.[17,18]

State of California (Uniform) Building Code

The State of California Building Code (CBC) sets standards for investigation and mitigation of the site conditions related to fault movement, liquefaction, landslides, differential compaction/seismic settlement, ground rupture, ground shaking, tsunami, seiche, and seismically induced flooding.[19] Mitigation of geological (including earthquake) and soil (geotechnical) issues must be undertaken in compliance with the CBC. The CBC augments and supersedes the Uniform Building Code (UBC) with stricter requirements to reduce the risks associated with building in Seismic Zone 4 to the maximum extent practicable. The majority of the State of California, including the proposed project site, lies within Seismic Zone 4, the highest level hazard zone designated by the current UBC.

Local

City of Long Beach

Building and construction within the City are subject to the regulations of the City Municipal Code. Municipal Code Chapter 18.24, Building Codes, adopts and incorporates by reference the CBC (Volumes I and II, 2001 Edition), and includes amendments and modifications to the CBC that are specific to the City. The CBC in turn incorporates provisions of the UBC, which contains seismic design criteria and grading standards.

The City General Plan adopted the Seismic Safety element in October 1988. The purpose of this element is to provide a comprehensive analysis of seismic factors in order to reduce the loss of life, injuries, damage to property, and social and economic impacts resulting from future earthquakes. The Seismic Safety element is a seismic safety planning tool and contains goals and recommendations that provide guidance for development in seismically active areas. To achieve maximum feasible safety from seismic risk, the Seismic Safety element focuses on current developmental policies and the allocation of future land uses.

Building Codes

The County of Los Angeles (County) has adopted and amended the CBC to reflect local geologic and seismic conditions. The County Building Code[20] would be the standard for evaluating the adequacy of

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[15] California Department of Conservation, Division of Mines and Geology. 2003 *Earthquake Shaking Potential for the Los Angeles Metropolitan Region: Counties*. Available at: http://www.seismic.ca.gov/pub/intensitymaps/la_county_print.pdf

[16] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Seismic Safety Element*. Long Beach, CA.

[17] Department of Conservation. 2007. Web site. "Seismic Hazards Zonation Program." Available at: htt://gmw.consrv.ca.gov/shmp/index.htm

[18] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Seismic Safety Element*. Long Beach, CA.

[19] California Code of Regulations, 1 November 2002. Title 24: California Building Standards Code. Sacramento, CA: California Building Standards Commission. Available at: www.bsc.ca.gov

[20] County of Los Angeles Department of Public Works. 1 November 2002. Building Code, Title 26: "County of Los Angeles Building Code." Available at: http://www.bpcnet.com/cgi-bin/hilite.pl/codes/lacounty/maintoc.htm

geotechnical and engineering geology studies needed for the design and construction of a project on land owned by the County. The Department of Development Services is the agency charged with the administration and enforcement of municipal zoning and building regulations and requirements prescribed by California State law Title 24.[21] Long Beach accepted the new CBC on January 1, 2008, and currently enforces it.[22] The City has established the CBC as the means of evaluating the adequacy of geotechnical and engineering geology studies needed for design and construction in the City. The proposed project would be subject to the provisions of the CBC as adopted and amended by the City.

City of Long Beach General Plan[23]

The City General Plan includes 10 elements. The Seismic Safety and Public Safety elements establish goals and policies for the City along with geologic conditions and constraints for the proposed project area.

City of Long Beach General Plan, Seismic Safety Element[24]

Management Goals

- Develop implemental mechanisms for a more stringent review of the earthquake potential associated with various projects.
- Coordinate and cooperate with other political jurisdictions in implementing seismic safety programs.
- Establish seismic safety guidelines to evaluate all potential hazards and mitigate existing problems.

Development Goals

- Utilize seismic safety considerations as a means of encouraging and enhancing desired land use patterns.
- Provide an urban environment that is as safe as possible from seismic risk.
- Use physical planning as a means of achieving greater degrees of protection from seismic safety hazards.
- Encourage development that would be most in harmony with nature and thus less vulnerable to earthquake damage.
- Strive to encourage urbanization patterns that preserve and/or create greater earthquake safety for residents and visitors.

Protection Goals

- Reduce public exposure to seismic risks.
- Reduce the potential adverse economic, environmental, and social conditions that

[21] City of Long Beach, Department of Development Services. *Building Codes*. Available at: http://www.longbeach.gov/plan/codes_n_fees/codes.asp

[22] City of Long Beach, Department of Development Services. *Building Codes*. Available at: http://www.longbeach.gov/plan/codes_n_fees/codes.asp

[23] City of Long Beach, Department of Development Services. *City of Long Beach General Plan*. Long Beach, CA.

[24] City of Long Beach, Department of Planning and Building . October 1988. *City of Long Beach General Plan, Seismic Safety Element*. Long Beach, CA.

could result from a major earthquake.

- Assure continued economic stability and growth by minimizing potential seismic hazards.
- Inform the public of existing or potential seismic hazards and what to do in times of earthquake events.
- Provide the maximum feasible level of seismic safety protection services.

Remedial Action Goals

- Eliminate or reconstruct uses and structures that pose seismic risk.

City of Long Beach General Plan, Public Safety Element[25]

Management Goals

- Develop mechanisms for implementing improved safety considerations.
- Coordinate and cooperate with other political jurisdictions in implementing safety and disaster programs.
- Continue to coordinate safety matters throughout the City and introduce methods of insuring improved safety.
- Promote cooperation of the private sector in upgrading safety precautions.
- Establish safety guidelines to evaluate all potential safety hazards and mitigate existing problems.

Development Goals

- Promote the redevelopment of areas that may present safety problems.
- Utilize safety considerations, as a means of encouraging and enhancing desired land use patterns.
- Provide an urban environment that is as safe from all types of hazards as possible.
- Continue to identify existing or proposed uses or activities that may pose safety hazards.
- Use physical planning as a means of achieving greater degrees of protection from safety hazards.
- Encourage transportation systems, utilities, industries, and similar uses to locate and operate in a manner consistent with public safety goals.
- Assure continued safe accessibility to all urban land uses throughout the City.
- Encourage development that would be most in harmony with nature and thus less vulnerable to natural disasters.
- Encourage development that would augment efforts of other safety related departments of the City (i.e., design for adequate access for firefighting equipment and police surveillance).
- Strive to encourage urbanizations patterns that preserve and/or create greater safety for residents and visitors.
- Critically evaluate proposed public or private actions that may pose safety hazards to residents or visitors.

[25] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Public Safety Element*. Long Beach, CA.

Protection Goals

- Use safety precautions as one means of preventing blight and deterioration.
- Protect existing land uses from the intrusion of safety hazards.
- Reduce public exposure to safety hazards.
- Effectively utilize natural or man-made landscape features to increase public protection from potential hazards.
- Reduce the potential adverse economic, environmental, and social conditions that could result from a major disaster.
- Assure continued economic stability and growth minimizing potential safety hazards.
- Protect the citizens against possible personal loss resulting from disaster events.
- Assure continued safety measures for the preservation of property values.
- Continue to inform the public of potential safety hazards and what to do in times of emergencies.
- Provide the maximum feasible level of public safety protection services.

Remedial Action Goals

- Isolate areas of hazardous concern from other portions of the City.
- Eliminate uses which present safety hazards.

3.5.2 Existing Conditions

The proposed project site is located in the central part of the City on a site known as the Hamilton Bowl / Chittick Field. The site consists of approximately 19 acres of undeveloped parcels of land that are used as a storm water dry detention basin. The 19-acre property is bounded by East 20th Street and the City of Signal Hill to the north. East of the proposed project site is a residential area with a narrow alley between Rose Avenue and Gardenia Avenue. Commercial development borders the proposed site to the south along East Pacific Coast Highway. The Long Beach City College–Pacific Coast Campus is located directly adjacent to the proposed project site west of Walnut Avenue.

Physiography and Topography

The proposed project site appears on the USGS 7.5-Minute Series, Long Beach, California, Topographic Quadrangle (Figure 2.1-2).[26] The elevation of the proposed project site ranges from approximately 3 to 16 feet above mean sea level. The proposed project site is roughly 1.9 miles north of the Pacific Ocean. The proposed project area is partially located on a storm water detention basin known as Hamilton Bowl / Chittick Field.

Surficial Geologic Units

Surficial geologic units around the vicinity of the City of Signal Hill in Long Beach are composed of recently deposited Quaternary alluvium and older Quaternary non-marine terrace deposits from the Pleistocene.[27]

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[26] U.S. Geological Survey. [1964] Photo revised 1981. 7.5-Minute Series, Long Beach, California, Topographic Quadrangle. Reston, VA.

[27] Jennings, Charles. 1962. U.S. Geological Survey and California Division of Mines and Geology. Geologic Map of California Long Beach Sheet.

Faulting and Seismicity

Faulting

Faults are fractures, or lines of weakness, in the earth's crust along which earthquakes occur. An earthquake occurs when rock units on one side of a fault are suddenly offset relative to the same rock units on the other side of the fault. In cases where earthquakes are large enough, or shallow enough, surface rupture can occur along the fault plane where it intersects the earth's surface. Active faults, those exhibiting movement during the Holocene age, and potentially active faults, those exhibiting movement during the Pleistocene age (between 1.8 million and 11,000 years ago), must be considered as potential sources for surface rupture where they intersect the surface. In general, the more recently there has been movement on a fault, the higher the potential for future movement on that fault.

The rocks of the basin are cut by numerous faults, many of which are strike-slip faults of generally northwest-southeast orientation. Of these, a portion of the Newport-Inglewood Fault Zone known as the Cherry Hill segment is located closest to the proposed project site, within approximately 0.2 mile to the northeast.[28,29] The Newport-Inglewood Fault Zone extends from the Baldwin Hills to Newport Bay and is considered to be active.[30]

Research has also indicated that several blind thrust faults (low-angle faults that do not break the surface) are active or potentially active and could cause significant ground shaking. Some recent research also indicates that the Compton–Los Alamitos Blind Thrust, which may be located in the deep subsurface under the proposed project site, may or may not be active or potentially active.

Seismicity

Plate tectonics, the movement of plates within the earth's crust, is experienced as an earthquake when there is a sudden release of energy along a fault line. The fault ruptures to accommodate this energy, propagating the energy throughout the land area surrounding the epicenter. Depending on the intensity of the earthquake, the propagation of energy creates strong ground motion and other potential seismic hazards such as surface fault rupture, ground failure (including liquefaction), and landslides.

The Richter magnitude scale was developed as a mathematical device to compare the size of earthquakes but not the measurement of damage. Richter showed that the greater the energy, the greater the amplitude of ground motion at a given distance. Because the Richter scale is based on a logarithmic scale, or base-10 scale, each whole number increase in magnitude represents a tenfold increase in measured amplitude, or height, of the earthquake wave. As an estimate of energy, each whole number step in the magnitude scale corresponds to the release of about 32 times more energy than the amount associated with the preceding whole number value.

Seismologists have more recently developed a standard magnitude scale that addresses some of the limitations of earlier scales. This is called Moment magnitude. The Moment magnitude gives a more

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[28] Department of Conservation. 2007. Web site. "Seismic Hazards Zonation Program." Available at: htt://gmw.consrv.ca.gov/shmp/index.htm

[29] Charles W. Jennings Database. 1994. *Fault Activity Map of California and Adjacent Areas*. Geologic Data Map No. 6.

[30] SCS Engineers. 2004a. *Technical Background Report, Engineering Geology Investigation to Support Environmental Documentation for the Long Beach Hospital, Long Beach, California*. Prepared for: Sapphos Environmental, Inc., Pasadena, CA.

reliable estimate of energy release, particularly for very large earthquakes. The Moment scale is computed based on information gathered on seismographs. Seismographs are machines that measure and record vibrations within the earth and on the ground.

Ground motion or ground-shaking intensity is described by the modified Mercalli intensity scale (Table 3.5.2-1, *Modified Mercalli Intensity Scale*). Values in the modified Mercalli intensity scale are dependent on several factors: earthquake size, type, depth, distance to fault, subsurface geologic conditions, and direction of motion.

Another measure of the potential for seismic-related damage is the peak horizontal ground acceleration (PHGA). PHGA is a measure of ground motion expressed as a percentage of gravity (g) as it reflects the amplitude of an earthquake wave relative to earth's surface. The greater the ground acceleration, the more damage a seismic event is likely to cause.

TABLE 3.5.2-1
MODIFIED MERCALLI INTENSITY SCALE

Intensity	Description of Potential Effects
I.	Not felt. Marginal and long-period effects of large earthquakes.*
II.	Felt by persons at rest, on upper floors, or favorably placed.
III.	Felt indoors. Hanging objects swing. Vibration-like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV.	Hanging objects swing. Vibration-like passing of heavy trucks, or sensation of a jolt like a ball striking the walls. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV, wooden walls and frames creak.
V.	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
VI.	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken; knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D** cracked. Small bells ring (church, school). Trees, bushes shaken (visible, or heard to rustle).
VII.	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices (also unbraced parapets and architectural ornaments). Some cracks in masonry C. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.
VIII.	Steering of motor cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX.	General panic. Masonry D destroyed; masonry B seriously damaged. (General damage to foundations.) Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluviated areas, sand and mud ejected; earthquake fountains; and sand craters.
X.	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks to canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI.	Rails bent greatly. Underground pipelines completely out of service.
XII.	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.

TABLE 3.5.2-1
MODIFIED MERCALLI INTENSITY SCALE, Continued

NOTES:
* Wave period is the time calculated between two consecutive wave peaks.
** The quality of masonry, brick, or other material is defined by the following lettering system, which is unrelated to the conventional construction classes A, B, and C:

Masonry A. Good workmanship, mortar, and design; reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral forces.

Masonry B. Good workmanship and mortar; reinforced, but not designed to resist lateral forces.

Masonry C. Ordinary workmanship and mortar; no extreme weaknesses, like failing to tie in at corners, but neither reinforced nor designed to resist horizontal forces.

Masonry D. Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.

SOURCE: Richter, C.F. 1957. *Elementary Seismology.* San Francisco, CA: W. H. Freeman Co.

Numerous regional and local faults are capable of producing severe earthquakes, those of Richter magnitude of 6.0 or greater (Table 3.5.2-2, *List of Recorded Earthquakes with Magnitude of Greater than 6.0 within 100 Kilometers of the Proposed Project Site*). Several earthquakes have occurred in historic time in the general Southern California region. Historic events are both pre-instrumental (all information is very approximate) and instrumental events. The primary earthquake associated with the Newport-Inglewood Fault Zone is the year 1933 magnitude 6.3 event. Table 3.5.2-2 summarizes data for recorded moderate to severe earthquakes within the area of potential effect for the proposed project site.

TABLE 3.5.2-2
LIST OF RECORDED EARTHQUAKES WITH MAGNITUDE OF GREATER THAN 6.0 WITHIN 100 KILOMETERS OF THE PROPOSED PROJECT SITE

Date	Location (latitude, longitude)	Moment Magnitude	Local Magnitude*	Distance from the Proposed Project Site (kilometers)
December 8, 1812	33.70–117.90	7.5**	6.90**	33
July 22, 1899	34.30–117.50	—	6.50**	85
May 15, 1910	33.70–117.40	—	6.00	78
July 23, 1923	34.00–117.25	—	6.25	92
March 11, 1933	33.62–117.97	6.4	6.30	33
February 9, 1971	34.41–118.40	6.6	6.40	66
October 1, 1987	34.06–118.08	5.9	6.10	29
February 28, 1990	34.21–118.54	—	6.20	59
January 17, 1994	34.21–118.54	6.7	6.80***	51

NOTES: * Moment magnitude is preferred to local or Richter magnitude because it provides a more reliable estimate of the size of an event, particularly for very large earthquakes; ** Estimated; *** Surface-wave magnitude
SOURCE: U.S. Geological Survey. 6 October 2005. *Earthquake Hazards Program.* Earthquake Search: Circular Area. Available at: http://neic.usgs.gov/neis/epic/epic_circ.html

As indicated above, a portion of the Newport-Inglewood Fault Zone, known as the Cherry Hill segment, is located within approximately 0.2 mile of portions of the proposed project area. The Newport-Inglewood Fault is capable of a 7.1 magnitude earthquake.[31] PHGAs were estimated on a

[31] T. Cao, W.A. Bryant, B. Rowshandel, D. Branum, and C.J. Wills. June 2003. *The Revised 2002 California Probabilistic Seismic Hazard Maps.* Sacramento, CA.

design and upper-bound earthquake basis in a recent study,[32] with a 10-percent chance of exceedance during 50- and 100-year time periods, respectively. The design and upper-bound basis PHGAs were estimated at 0.52 g and 0.65 g, respectively.

The proposed project is located in an area that is susceptible to strong ground shaking from severe earthquakes. Earthquakes on faults, such as the nearby Newport-Inglewood Fault (capable of 7.1 magnitude), can generate seismic shaking. There are also a number of other active and potentially active faults within 60 miles (100 kilometers) of the proposed project site, any of which could cause significant ground shaking at the site.

Potential seismic forces resulting from an earthquake as they might affect buildings and other structures are often quantified as PHGAs. MACTEC[33] has determined site-specific PHGAs of 0.52 g and 0.65 g using the design basis earthquake with a 10-percent probability of exceedance during a 50-year time period and the upper-bound earthquake with a 10-percent probability of exceedance during a 100-year time period, respectively.[34,35]

Soils

Soils are characterized by their drainage characteristics, their topographic position, age, mode of formation, erodability, structure, and particle size. The larger particles indicate sandy or gravelly soil, medium size particles are loams, and fine particles are clays and silts. Soils can be mapped into areas known as soil associations according to general soil characteristics and are named for the major soil series they contain.[36]

The proposed project site is situated on Ramona-Placentia association. The soils of this association occur only in the Los Angeles basin. They are on gently sloping terraces between elevations from near sea level to 1,300 feet. Ramona soils make up 80 percent and Placentia 15 percent of the association. Hanford soils make up the remaining 5 percent. These soils are used primarily for residential development. Small areas are used for non-irrigated grain and for irrigated orchards.

Ramona soils in the Los Angeles basin are over 60 inches deep, are well drained, and have slow subsoil permeability. They are characterized by brown to reddish-brown, heavy loam, loam, or sandy loam surface layers about 18 inches thick. Subsoils are brown to reddish-brown, dense clay loam or clay about 30 inches thick. The substratum is brown to reddish-brown loam or light clay loam. Some subsoils may be stratified beds of silt to sand. Areas with up to 60 percent stones and cobbles by volume also occur. Available water-holding capacity is 8 to 10 inches for 60 inches of soil depth. Water-holding capacity is reduced by the percentage of coarse fragments in those areas containing stones and cobbles. Inherent fertility is moderate.

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[32] MACTEC. 2003. *Report of Geotechnical Investigation, Proposed Pediatric Hospital Additions, Long Beach Memorial Medical Center, Long Beach, California*. Alpharetta, GA.

[33] MACTEC. 2003. *Report of Geotechnical Investigation, Proposed Pediatric Hospital Additions, Long Beach Memorial Medical Center, Long Beach, California*. Alpharetta, GA.

[34] MACTEC. 2003. *Report of Geotechnical Investigation, Proposed Pediatric Hospital Additions, Long Beach Memorial Medical Center, Long Beach, California*. Alpharetta, GA.

[35] SCS Engineers. 2004a. *Technical Background Report, Engineering Geology Investigation to Support Environmental Documentation for the Long Beach Hospital, Long Beach, California*. Prepared for: Sapphos Environmental, Inc., Pasadena, CA.

[36] U.S. Department of Agriculture, Soil Conservation Service. 1969. Report and General Soil Map for Los Angeles County, California.

Placentia soils are over 18 inches deep, are moderately well drained, and have very slow subsoil permeability. They are characterized by brown to reddish-brown loam or sandy loam surface layers abruptly underlain by a dense, dark, reddish-brown clay loam subsoil at about 18 inches. The substratum occurs at about 48 inches and is brown loam. The dense subsoil restricts the movement of air and water and the development of roots and is therefore considered limiting for the effective soil depth. Occasional areas have subsoils composed mainly of gravelly deposits and some have an iron-cemented hardpan. Available water-holding capacity is about 2.0 to 2.5 inches for 18 inches of effective soil depth. Inherent fertility is low.

In addition to the associations that are described above, three soil series are characteristic of Long Beach:[37]

The Old Valley and Coastal Plain Series

Generally this series consists of elevated, unconsolidated, water-laid deposits that usually occupy sloping, rolling, or hilly areas and show signs of weathering or long-term erosion. In Long Beach, this series includes Ramona and Montezuma soils and are described as follows:

- RS-Ramona Sandy Loam (12–24 inches)
  Usually gray-brown or brown, this soil yields moderate crops, but does not absorb water readily. During periods of heavy rainfall, moderate erosion occurs.
- RF-Ramona Fine Sandy Loam (12–24 inches)
  Also gray-brown or brown, drainage is thorough with some minor erosion. These tend to offer moderate crop yields and occupy terrace areas of gentle slopes.
- RO-Ramona Loam (12–24 inches)
  Brown, gray-brown or dark brown, this soil is one of the important agricultural types in the County of Los Angeles. When water saturated, this soil produces considerable runoff. It can be found along foothills, marine terraces, alluvial fans and mesas.
- RC-Ramona Clay Loam (8–24 inches)
  Also brown, gray-brown, and dark brown, this soil is found in many areas, generally in the same areas as Ramona Loam. It is also conducive to agriculture. Drainage is moderate to good.
- MC-Montezuma Clay Loam Adobe (18–36 inches)
  Dark gray to black, this soil assumes an adobe structure becoming hard and cracked when dry. An important agricultural soil; berry crops produce good yields. This soil is found along areas of gentle slope.

Recent Alluvial Series

These are intensively developed and have a high water table. Light in color and texture, these soils have a wide range of mineral composition and are alkaline at times. In Long Beach they include Chino, Hanford, and Tujunga soils. They are described as follows:

- HO-Hanford Sand (12 inches)
  This soil is brown or gray-brown usually with a high water table and can be found over an extensive area. Native vegetation and truck crops are well supported by this soil

[37] City of Long Beach, Department of Planning and Building. 1973. *City of Long Beach General Plan, Conservation Element.* Long Beach, CA.

which has good drainage. It is usually found on gentle slopes and level areas.

- HI-Hanford Loam (12–72 inches)
  Gray-brown and brown, this soil can be found in flood plain areas and streamways. Drainage is adequate and agricultural yields are good.
- TS-Tujunga Fine Sand (6–72 inches)
  Gray or brownish-gray, this material is loose and has minor agricultural importance. It is usually found near streams. It is associated with a high water table and moderate erosion occurs.
- CI-Chino Silt Loam (12–72 inches)
  This soil is dark brownish gray or black and occupies gentle slopes and level areas. Drainage is good and it is important for agricultural purposes. The soil absorbs and holds water well.
- CC-Chino Clay Loam (12–18 inches)
  Similar to Chino Silt Loam in color, it is not as well drained. This type can be found in level or shallow areas and produces good agricultural yields despite alkali accumulation.
- CY-Chino Silty Clay (12–15 inches)
  This type is dark gray and compact, found in areas of gentle slope to nearly flat. Poor drainage and alkali deposits are typical of this soil. This type of soil is poor for agricultural purposes.

Miscellaneous Series

These include soils that are non-agricultural or undergo change resulting from unnatural conditions such as dredging, fill, or grading. In Long Beach, these include river wash, coastal beach and dune sand, tidal marsh, muck, peat, and made-land. Description of these soils follows:

- RY-River Wash
  This consists principally of gray sand and soil particles that have been transported via water currents during peak flow periods and floods. Usually, these are found along river bottoms and mouths. During wet weather, these are in the form of sediment, which becomes loose, sand-like material during summer.
- TI-Tidal Marsh
  This is characterized by sediment material that has been laid down near tide level and is subject to inundation by salt or brackish water. Usually dark gray, brown or black, this type of soil supports weed-like grasses and salt water plants. Non-agricultural, due to large amounts of sodium chloride, this type occurs in low level areas and is important as a wildlife habitat.
- MP-Muck and Peat
  This is a silty, black and poorly drained material. A high water table and spongy organic material made of decayed plants and roots are characteristic. Usually found in distinct areas, this type permits certain shallow root crops due to large amounts of water being present.
- ME-Made-land
  This is man-made and consists of dredging material, construction debris, earth from highway and oil development projects, rock and gravel. Usually used for extending port facilities or as fill for building construction.

Hydrology[38]

The depth of groundwater is an important factor in the consideration of certain seismic hazard evaluations, especially when evaluating the potential for seismically induced liquefaction. Shallow groundwater data came from many sources, which covered a time span of several years and therefore should be considered approximate and generally representative of the existing conditions at the site.

In the harbor area, groundwater is generally less than 5 feet below the ground surface, being highly influenced by sea level. Inland along the Dominquez Gap, the groundwater level slowly drops, being generally greater than 20 feet deep north of East Pacific Coast Highway and greater than 40 feet deep north of Wardlow Road. Similar shallow groundwater conditions exist in the Alamitos Gap area. Groundwater is generally less than 10 feet below the surface throughout the entire area south of the San Diego Freeway.

Throughout the City, shallow water is termed unconfined and occurs in the near surface soils more or less independent of their permeability. However, underlying this shallow water are deep water-bearing zones or aquifers that have been used for domestic water sources.

The potential for liquefaction in Long Beach depends on the levels of shaking, the groundwater conditions, and the subsurface soil conditions.

The proposed project site is south of the San Diego Freeway (405) and Wardlow Road, and just north of East Pacific Coast Highway. Therefore, the groundwater levels could be less than 10 feet or more than 20 feet below the surface. The nearest body of water to the proposed project is the Pacific Ocean, which is approximately 1.9 miles south. According to the Liquefaction Potential Areas Map, the proposed project site is located within a minimal liquefaction potential area.[39]

A complex system of alternating aquifers (highly permeable sand and gravel beds) and aquicludes (relatively low permeability sediments with a high proportion of clay and silt) characterizes the basin subsurface geology, including the proposed project site area. In some parts of the basin, aquicludes are leaky, allowing groundwater to move upward or downward through them, depending on differential pressure gradients. Due to this leakage, precipitation, and surface water infiltration, localized shallow perched-water zones may accumulate above the regional groundwater level. Delineating shallow, perched groundwater is critical during the evaluation of liquefaction potential.

The uppermost regional aquifer in this area is anticipated to be the Gage Aquifer, located at a depth of approximately 200 to 250 feet below ground surface (BGS).[40] The uppermost groundwater beneath most of the area occurs at a depth estimated at 50 feet BGS within sands of the Lakewood Formation. However, a thin perched zone of groundwater was encountered as shallow as 15 feet BGS in the northern portion of the expansion area.

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[38] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Seismic Safety Element*. Long Beach, CA.

[39] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Seismic Safety Element*. Long Beach, CA.

[40] California Department of Water Resources. June 1961. *Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County*. Bulletin 104, Appendix A. Sacramento, CA.

3.5.3 Significance Thresholds

The potential for the proposed project to result in impacts related to geology and soils was analyzed in relation to the questions contained in Appendix G of the California Environmental Quality Act Guidelines. The proposed project would normally be considered to have a significant impact to geology and soils when the potential for any one of the following four thresholds occurs:

- Expose people or structures to potential substantial adverse effects, including the risk for loss, injury, or death involving:
    - 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
        - Strong seismic ground shaking
        - Seismic-related ground failure, including liquefaction
        - Landslides
- Result in substantial soil erosion (greater than 10 percent) or the loss of topsoil
- 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-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse
- 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

3.5.4 Impact Analysis

Surface Fault Rupture

The proposed project would be expected to result in potentially significant impacts related to surface fault rupture of a known earthquake fault. Faults are the planes along which earthquakes occur. Where earthquakes are large enough or shallow enough, surface rupture can occur along the fault plane where it intersects the earth's surface. According to *Fault-Rupture Hazard Zones in California, Special Publication No. 42*,[4] the proposed project site is not located within an Alquist-Priolo Earthquake Fault Zone. However, the proposed project site is located 0.2 mile to the southwest of the Cherry Hill segment of the Newport-Inglewood fault zone. Impacts from a surface fault rupture within this fault zone could result in significant impacts exposing people and structures at the proposed project site to risk of loss, injury or death. The CBC establishes standards for investigation and mitigation of site conditions related to fault movement, ground rupture, ground shaking, as well as other seismically induced activities. The City General Plan Seismic Safety element[41] outlines policies and implementation of safety measures and planning for potential seismic events. This element establishes construction guidelines for structures built within the City as well as response recommendations for reducing the loss associated with seismic events. Therefore, impacts associated with surface fault rupture would be expected to result in potentially significant impacts related to the fault rupture of a known earthquake fault.

[41] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Seismic Safety Element*. Long Beach, CA.

Seismic Ground Shaking

The proposed project would result in potentially significant impacts from strong seismic ground shaking. A number of known regional active faults are located at distances where they could produce substantial ground shaking at the proposed project site. Similar to development throughout most of Southern California, implementation of the proposed project would result in the exposure of persons at the proposed project site to substantial ground shaking, and thus a degree of seismic hazard risk. The proposed project would be consistent with the goals and recommendations of the Seismic Safety element[42] of the City General Plan. The proposed project would be constructed in accordance with the CBC, the Long Beach Municipal Code, and the UBC. In addition, the maximum probable seismic ground acceleration would be taken into consideration when designing all structures and geotechnical studies would be prepared for each phase of building to be undertaken in accordance with the CGS Guidelines for Evaluating and Mitigating Seismic Hazards in California.[43] Due to the proximity of regional active faults, impacts associated with seismic hazards would be expected to result in potentially significant impacts.

Seismic-related Ground Failure/Liquefaction

The proposed project would be expected to result in less than significant impacts from seismic-related ground failure. Potential impacts due to liquefaction could include foundation bearing failure or large foundation settlements, imposition of additional loads on foundations, localized lateral displacement (spreading) or compression, floatation of light structures, and damage to infrastructure such as streets and utilities. According to Plate 7 of the City's Seismic Safety element,[44] the proposed project is located in a part of the City where the potential for liquefaction to occur is suspected to be minimal.[45] All structures on the proposed project site would be built to meet specific design standards as advised by state and local standards as well as project engineers. Therefore, the proposed project would not be expected to result in impacts from exposing people or structures to potential substantial adverse effects involving seismic-related ground failure, including liquefaction.

Landslides

The proposed project would not result in significant impacts from seismically induced landslides. Due to the design and engineering of the proposed project, the completed development would not be subject to landslides. Per the Seismic Safety element, the proposed project site is not located in an area where landslides are anticipated to occur,[46] and no areas susceptible to seismically induced landslides are shown in the proposed project vicinity of the CGS Seismic Hazards Map. Therefore, the proposed project would not result in an impact from landslides.

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[42] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Seismic Safety Element*. Long Beach, CA.

[43] California Department of Conservation, Division of Mines and Geology. 1997. *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. Special Publication No. 117. Sacramento, CA.

[44] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Seismic Safety Element*. Long Beach, CA.

[45] Department of Conservation. 2007. Web site. "Seismic Hazards Zonation Program." Available at: htt://gmw.consrv.ca.gov/shmp/index.htm

[46] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Seismic Safety Element*. Long Beach, CA.

Soil Erosion

The proposed project would result in less than significant impacts related to a substantial increase in soil erosion or the loss of topsoil. The proposed project site is in a centralized urban environment where agricultural issues are not a potential consideration. The site is relatively flat and is at a lower elevation than the surrounding roadways; therefore, it would be expected that any potential loss of topsoil from fugitive dust would only occur during the construction, demolition, and grading operations. Erosion potential during construction would be expected to be minimal and would be managed to the maximum extent practicable with best management practices (BMPs) as part of compliance with the required National Pollutant Discharge Elimination System permit and associated Urban Storm Water Management Plan. The City and the California Stormwater Best Management Practice Handbook[47] has identified standard BMPs that are capable of reducing impacts to soil erosion to below the level of significance. Therefore, the proposed project would result in less than significant impacts to soil erosion and the loss of topsoil.

Stability of Geology and Soils

The proposed project would not result in significant impacts related to the location of the proposed project on a geologic unit that is unstable, or that would become unstable as a result of the proposed project. According to the Seismic Safety element of the City General Plan,[48] the proposed project site would be located on soil made up of predominantly granular, non-marine terrace deposits overlying Pleistocene granular, marine sediments at shallow depths. The Seismic Safety element does not indicate that this type of soil would become unstable as a result of the project. Therefore, the proposed project would not result in significant impacts from an unstable geology unit.

Expansive Soil

The proposed project would not be expected to result in significant impacts from expansive soils. Expansive soils expand with the addition of water and shrink when the soil dries due to a high clay content, which absorbs water. This can cause damage to overlying structures. The proposed project site substrate is high in granular content and low in clay content. This type of geologic unit has a very low risk factor for expansion. Therefore, the proposed project would not result in an impact from expansive soil.

Cumulative Impacts

The incremental impact of the proposed project, when added to the related past, present, or reasonably foreseeable, probable future projects listed in Section 2, *Project Description*, would not result in cumulative impacts related to geology and soils. Because the geology and soils impacts expected from the implementation of the proposed project do not affect lands outside the boundaries of the proposed project site, these impacts do not create any cumulative impacts on the environment outside of the proposed project boundaries.

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[47] California Stormwater Quality Association. 2003. *California Stormwater Best Management Practice Handbook.* Menlo Park, CA.

[48] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Seismic Safety Element.* Long Beach, CA.

3.5.5 Mitigation Measures

Implementation of the following mitigation measures is recommended to avoid, reduce, or eliminate the potential impacts related to geology and soils. As described above, potential impacts to surface fault rupture, seismic ground shaking, and soil erosion would be reduced through the implementation of the California Building Code and other standard design measures required for permit approval. However, additional mitigation measures are required.

Measure Geology-1

Exposure of people or property to potentially adverse effects, including the risk of loss or injury, involving surface fault rupture from the operation of the project, shall be minimized through the applicant's compliance with the City of Long Beach General Plan, California Building Code, Long Beach Municipal Code, and Uniform Building Code.

Measure Geology-2

Exposure of people or property to potentially adverse effects, including the risk of loss or injury, involving seismic ground shaking from the operation of the project, shall be minimized through conformance with California Geological Survey's Guidelines for Evaluating and Mitigating Seismic Hazards in California and all applicable City of Long Beach codes and regulations related to seismic activity. The applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that the site-specific geotechnical investigations for the project are incorporated into the project plans and specifications. The City of Long Beach Department of Development Services shall review and ensure that all recommendations of the site-specific geotechnical recommendations are incorporated into the final plans and specifications.

Measure Geology-3

The applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that best management practices implemented for the project are consistent with the National Pollution Discharge Elimination System Permit No. CAS 004003 to avoid soil erosion during construction of the project. Prior to approval of final plans and specifications, the applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that the requirement to comply with National Pollution Discharge Elimination System Permit No. CAS 004003 is included in the specifications. The City of Long Beach Department of Development Services shall monitor construction to ensure compliance with National Pollution Discharge Elimination System Permit No. CAS 004003.

3.5.6 Level of Significance after Mitigation

Implementation of mitigation measures Geology-1 through Geology-3 and adherence to the standards of the California Building Code, Uniform Building Code, and City General Plan would reduce impacts associated with seismic hazards to the maximum extent practicable, to below the level of significance. Structural failure due to a possible surface rupture of a known earthquake or as a result of ground shaking would be reduced to below the level of significance by implementing the most recent industry standards for structural designs.

3.6 HAZARDS AND HAZARDOUS MATERIALS

As a result of the Initial Study (Appendix A), the City of Long Beach (City) determined that the proposed Kroc Community Center (proposed project) had the potential to result in impacts from hazards or hazardous materials. Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts from hazards and hazardous materials and identify potential alternatives.

A hazard has the potential for harm. In practical terms, a hazard often is associated with a condition or activity that, if left uncontrolled, can result in an injury, illness, or death.

Hazardous materials and wastes have least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity) or appear on special Environmental Protection Act lists.

The analysis of hazards and hazardous materials consists of a summary of the regulatory framework that guides the decision-making process, a description of the existing conditions at the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

Published and unpublished literature regarding hazards and hazardous materials at the proposed project site was reviewed. This literature consisted of the Phase I and Phase II Environmental Site Assessments and the Human Health Screening Evaluation (Appendix D) that have been conducted within the proposed project site at the Hamilton Bowl / Chittick Field.[1,2]

3.6.1 Regulatory Framework

Federal

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, also known as the Superfund, outlines the potential liability related to the cleanup of hazardous substances, available defenses to such liability, appropriate inquiry into site status under Superfund, statutory definitions of hazardous substances and petroleum products, and the petroleum product exclusion under CERCLA.[3]

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[1] SCS Engineers. October 2005. *Phase I Environmental Assessment 1601–1801, Pacific Coast Highway (APNS 7216-033-001, 004-010, 026, and 027) and 1986 Walnut Avenue (APN 7216-012-002).* Long Beach, CA.

[2] SCS Engineers. October 2005. *Phase II Investigation Report Chittick Field 1900 Walnut Avenue, Long Beach, CA.* Long Beach, CA.

[3] *United States Code*, Title 42, Chapter 103, Subchapter I: "Hazardous Substances Releases, Liability, Compensation." Available at: http://www.law.cornell.edu/uscode/html/uscode42/usc_sup_01_42_10_103.html

Superfund Amendment and Reauthorization Act, Title III

The Superfund Amendment and Reauthorization Act (SARA), Title III of 1986 is the Emergency Planning and Community Right-to-Know Act.[4] Facilities are required by the U.S. Environmental Protection Agency (EPA) to report their hazardous substance items on a Tier II Chemical Inventory Report is required by Title III of the SARA of 1986, Section 312, and Form R, the Toxic Chemical Release Inventory Reporting Form: facility identification, off-site locations where toxic chemicals are transferred in wastes, chemical-specific information, and supplemental information.

Form R requires a facility to list the hazardous substances that are handled on site and to account for the total aggregate releases of listed toxic chemicals for the calendar year. Releases to the environment include emissions to the air, discharges to surface water, and on-site releases to land and underground injection wells.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) of 1976 was the first major federal act regulating the potential health and environmental problems associated with hazardous and non-hazardous solid waste.[5] RCRA and the implementation regulations developed by the U.S. EPA provide the general framework for the national hazardous and non-hazardous waste management systems. This framework includes the determination of whether hazardous wastes are being generated, techniques for tracking wastes to eventual disposal, and the design and permitting of hazardous waste management facilities.

RCRA amendments enacted in 1984 and 1986 began the process of eliminating land disposal as the principal hazardous waste disposal method. Hazardous waste regulations promulgated in 1991 address site selection, design, construction, operation, monitoring, corrective action, and closure of disposal facilities. Additional regulations addressing solid waste issues are contained in Title 40 of the Code of Federal Regulations (CFR), Part 258.

Federal Aviation Administration

The Federal Aviation Administration (FAA) requires review of any construction plans and specifications for development proximate to airports that exceed certain height criteria.[6] These minimum height requirements include any construction or alteration more than 200 feet in height above ground level and/or at a greater height than that of an imaginary surface extending outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway.[7]

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[4] *United States Code*, Title 42, Chapter 116 et. seq: "Emergency Planning and Community Right-To-Know Act." Available at: http://www.law.cornell.edu/uscode/html/uscode42/usc_sup_01_42_10_116.html

[5] *United States Code*, Title 42, Chapter 82, Subchapter I, §§ 6901 et. seq.: "Solid Waste Disposal Act, Resource Conservation and Recovery Act of 1986." Available at: http://www.law.cornell.edu/uscode/html/uscode42/usc_sup_01_42_10_82.html

[6] *Code of Federal Regulations*, Title 14, Part 77. 5. May 2003. "Aeronautics and Space, Objects Affecting Navigable Airspace." Available at: http://www.access.gpo.gov/nara/cfr/waisidx_05/14cfr77_05.html

[7] *Federal Aviation Regulations*, Part 77, "Objects Affecting Navigable Airspace." Available at: http://www.pctpa.org/library/aluc/aluc_appB.PDF

This review is initiated using FAA Form 7460, Notice of Proposed Construction or Alteration, if necessary. The FAA determines whether there is an obstruction to the safe and efficient use of airspace over part or all of a proposed land use change under Federal Aviation Regulations Part 77, Objects Affecting Navigable Airspace, during this review.

State

Hazardous Waste Control Law of 1972

The Hazardous Waste Control Law of 1972 is the original hazardous waste control law in California. This law initiated programs that track hazardous waste generators, their hazardous waste streams, and their hazardous waste handling practices. This was developed to be a more comprehensive and broader law than the federal RCRA system, regulating wastes and activities not covered by RCRA.

Title 22 and Title 23 of the California Code of Regulations

In California, Titles 22 and 23 of the California Code of Regulations (CCR) address hazardous materials and wastes. Title 22 defines, categorizes, and lists hazardous materials and wastes. Title 23 addresses public health and safety issues related to hazardous materials and wastes and specifies disposal options.

Title 8 of the California Code of Regulations

Title 8, Section 5194 (8 CCR 5194) addresses the implementation of procedures relating to right-to know or hazardous substance information and training program for employees and complying with the legal requirements stated within the regulations.

The State Emergency Response Commission and the Local Emergency Planning Committees (LEPC) in California use the current federal reporting forms: Tier II for reporting under Sections 311 and 312 and Form R for reporting under Section 313. Tier I forms are not accepted because of limited information on the form. Some Local Planning Committees use revised forms and thus must be verified with the county LEPC.

Hazardous Materials Release Response Plans and Inventory Law of 1986

The Hazardous Materials Release Response Plans and Inventory Law of 1986 (Business Plan Act)[8] governs hazardous materials handling, reporting requirements, and local agency surveillance programs.

Local

City of Long Beach General Plan

The State of California requires a Safety element as part of all city and county general plans. Government Code Section 65302.1 mandates the creation and adoption of this element. Furthermore, the California Council on Intergovernmental Relations has promulgated advisory guidelines to be used in developing of the city's general plan and other mandatory plan elements.

[8] *California Health and Safety Code*, Chapter 6.8, Section 25500 et seq. (1985, as amended). Available at: http://www.aroundthecapitol.com/code/code.html?sec=hsc&codesection=25404-25404.9

According to these guidelines, the Safety element is tied in with social, economic, and environmental factors in the general development plan.

Safety Element

There are numerous objectives to be attained in completing the City General Plan Safety element:

1. Identify all public safety items, which relate to the City General Plan.

2. Incorporate public safety considerations into the overall planning process, to add another dimension of insight and greater comprehensiveness to the City General Plan.

3. Suggest methods for achieving maximum feasible safety for citizens.

4. Recommend measures to reduce the probability of loss of life, injuries, damage to property, and economic and social dislocation resulting from fire, dangerous geologic occurrences and most other natural and man-created hazards.

5. Provide citizens with an increased sense of security and well-being.

6. Set forth means of correcting and/or mitigating hazards.

7. Inform citizens of potential safety problems and provide information regarding emergency situations.

8. Assist public safety officials in dealing with matters of safety and emergency occurrences.

9. Assure that physical manifestations of safety considerations are reflected in the City General Plan.

Other Local Plans

Another local plan includes the City's Strategic Plan. Information captured from this document was reviewed and relevant items have been incorporated into to the hazards and hazardous materials into this section of this document.

3.6.2 Existing Conditions

The proposed project site is located on Hamilton Bowl / Chittick Field, at 1900 Walnut Avenue, Long Beach, County of Los Angeles, California. The proposed project site appears on the U.S. Geological Survey, 7.5-Minute Series, Long Beach, California, Topographic Quadrangle.[9]

The proposed project site is currently used as a flood control detention basin that collects excess runoff from the surrounding streets onto the site. Historically, there was a petroleum refinery on the site, which was removed during the construction of the bowl for flood control and recreational purposes. A review of nearby sites to the proposed project area that treated, stored, and disposed of hazardous

[9] U.S. Geological Survey. [1964] Photo revised 1981. 7.5-Minute Series, Long Beach, California, Topographic Quadrangle. Reston, VA.

wastes and materials was performed by reviewing available environmental regulatory databases prepared by Environmental Data Resources (Table 3.6.2-1, *Small Quantity Hazardous Waste Generators*; Table 3.6.2.-2, *Hazardous Waste and Leaking Underground Storage Tank Sites*).

TABLE 3.6.2-1
SMALL QUANTITY HAZARDOUS WASTE GENERATORS

Name of Generator	Address	Approximate Distance from Proposed Project Site
Modern Cleaners	1730 East 20th Street	< .1 mile north
Johnson S Automotive Paints, I	1835 East Pacific Coast Highway	< .1 mile south-southeast
Fair Auto	1501 Pacific Coast Highway	< .1 mile southwest
Shell Service Station	1945 East Pacific Coast Highway	< .1 mile southeast
Long Beach Unified School District	1761 Walnut Avenue	< .1 mile east-northeast
John Osborne CO	1990 Cherry Ave	< .1 mile east-northeast

TABLE 3.6.2-2
HAZARDOUS WASTE AND LEAKING UNDERGROUND STORAGE TANK SITES

Name of Facility	Address	Approximate Distance from Proposed Project Site
GTE Long Beach Plant Yard North	1777 East 20th Street	< .1 mile north
U-Haul Moving Center # 713	1600 Pacific Coast	< .1 mile south-southeast
Shell Service Station LUST	1945 East Pacific Coast Highway	< .1 mile southeast
Mobil Gas Station (Former) LUST	2001 Pacific Coast Highway	< .1 mile southeast
Contractors Equipment Rental	2020 Pacific Coast Highway	< .1 mile southeast
Long Beach City College Auto LUST	1305 East Pacific Coast Highway	.1 mile west-southwest
Carl's Fine Furniture	1300 Pacific Coast Highway	.1 mile west-southwest
A-1 Industrial Sales	2220 Cherry Ave	.1 mile north-northeast
Hust-Itt Corp	1247 Hill East	.1 mile northwest
Vacant Lot (LUST only)	Alamitos Ave and Orange	.1 mile southwest

The following facilities were also identified near the proposed project site:

- CERCLIS No Further Remedial Action Planned (CERC-NFRAP) and RCRA Site – Chemoil Refining Corp., located at 2020 Walnut Avenue, approximately .0625 mile north-northwest from the proposed project site.

- Corrective Action Report (CORRACTS) Site- Dico Oil Co., located at 1845 East Willow Street, approximately 0.25 mile north from the proposed project site.

Release of Hazardous Materials into the Environment

Previous site assessments have been conducted for the Hamilton Bowl / Chittick Field site.[10,11] These assessments concluded that there are no significant concentrations of volatile organic compounds (VOCs), petroleum hydrocarbons, metals, or organochlorine pesticides on the proposed project site.

[10] SCS Engineers. October 2005. *Phase I Environmental Assessment 1601–1801, Pacific Coast Highway (APNS 7216-033-001, 004-010, 026, and 027) and 1986 Walnut Avenue (APN 7216-012-002).* Long Beach, CA.

[11] SCS Engineers. October 2005. *Phase II Investigation Report, Chittick Field.* Long Beach, CA.

These site assessments concluded that no further investigation was recommended for the site.

Existing or Proposed Schools

There are six schools or child care centers within 0.25 mile of the proposed project:

- John G. Whittier Elementary School, located approximately 0.08 mile southwest
- Mary Butler K-8, located approximately 0.1 mile west
- Alvarado Elementary School, located approximately 0.18 mile northeast
- John G. Whittier Preschool, located approximately 0.2 mile southwest
- Long Beach City College–Pacific Coast Campus, located approximately 0.2 mile west
- Courtyard Care Center, located approximately 0.23 mile east

Information received from the Long Beach Unified School District indicates that at least one middle school (referenced as 6–8 Middle School) is planned for construction at 1777 and 1778 East 20th Street, in the City of Signal Hill, within roughly 0.18 mile of the proposed project site.

Hazardous Materials Sites Pursuant to Government Code Section 65962.5

According to the review of a compilation of environmental regulatory databases, the proposed project site is located on a hazardous materials site pursuant to Government Code 65962.5, which is also known as the Cortese database.[12] Phase I and Phase II Environmental Site Assessments have been conducted at the Hamilton Bowl / Chittick Field site.[13,14] These assessments addressed the potential contamination to the site caused by the use of the site as a flood control detention basin, as well as the former presence of a petroleum refinery in the northeastern corner of the proposed project site. The Phase I Environmental Site Assessment found that while there is no presence of VOCs, diesel, petroleum hydrocarbons, or organochlorine pesticides, typical levels of metals were found in soils located in multiple areas surveyed throughout the site per SCS Engineers regulatory database research. The Phase II Environmental Site Assessment concluded that there are no significant concentrations of VOCs, petroleum hydrocarbon, metals, or organochlorine pesticides on the proposed project site and that no further investigation was recommended for the site.

Airport Land Use Plan or Public Use Airport

The nearest airport is the Long Beach Municipal Airport, which is located at 4100 Donald Douglas Drive, Long Beach, California, 90808. This airport is approximately 1.3 miles northeast of the proposed project site (Figure 3.6.2-1, *Airports Located in the Proposed Project Vicinity*).

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[12] SCS Engineers. October 2005. *Phase I Environmental Assessment 1601–1801, Pacific Coast Highway (APNS 7216-033-001, 004-010, 026, and 027) and 1986 Walnut Avenue (APN 7216-012-002).* Long Beach, CA.

[13] SCS Engineers. October 2005. *Phase I Environmental Assessment 1601–1801, Pacific Coast Highway (APNS 7216-033-001, 004-010, 026, and 027) and 1986 Walnut Avenue (APN 7216-012-002).* Long Beach, CA.

[14] SCS Engineers. October 2005. *Phase II Investigation Report, Chittick Field.* Long Beach, CA.

FIGURE 3.6.2-1

Airports Located in the Proposed Project Vicinity

3.6.3 Significance Thresholds

The potential for the proposed project to result in impacts related to hazards and hazardous materials was analyzed in relation to the questions contained in Appendix G of the State CEQA Guidelines. The project would normally be considered to have a significant impact from hazards and hazardous materials when the potential for any one of the following eight thresholds occurs:

- Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- Creates a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
- Emits hazardous emissions or handles hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school
- Is located on a site which is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment
- Is located within in an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, and results in a safety hazard for people residing or working in the project area
- Is within the vicinity of a private airstrip, and would result in a safety hazard for people residing or working in the project area
- Impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan
- Exposes people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

3.6.4 Impact Analysis

Routine Transport, Use, or Disposal of Hazardous Materials

Operation-related hazardous materials include, but would not be limited to, materials stored and used for the proposed project, stored and used for maintenance vehicles and equipment, and generated by project operations. Suspected hazardous materials and substances on the proposed project site would include:

- Petroleum products (e.g., oil, grease, gasoline from suspected contaminated soils)
- Inert gases (e.g., acetylene, argon and propane from construction operations)
- Gasoline refueling tanks
- Pesticides
- Chlorine and other pool maintenance chemicals (e.g., acids)

Hazardous materials or substances generated at the proposed project site are anticipated to be in small quantities that would not exceed the 50-gallon limit. These materials or substances would not be stored on site for more than 90 days and would not require a special storage area and training of site personal in the monitoring of such products per U.S. EPA RCRA requirements. However, fuels, lubricants, and other construction-related hazardous materials would be used, and the transport, use, and disposal of those materials as proposed by the project could significantly impact the public or the environment. Implementation of the proposed project would not have the potential to result in significant impacts to the public or the environment related to the routine transport, use, or disposal of hazardous materials to occur. Implementation of best management practices (BMPs) such as proper spill containment measures, storage practices, placing and handling, and labeling of hazardous materials would be incorporated into the proposed project design. Therefore, implementation of mitigation measures are required to reduce the impacts associated with the routine transport, use, or disposal of hazardous materials to below the level of significance.

Release of Hazardous Materials into the Environment

The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Fuels, lubricants, and other chemicals related to the construction and operation of the proposed project would be managed through BMPs for the storage and use of these materials. There would be no expected impacts to the public or the environment related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Existing or Proposed Schools

The proposed project is expected to result in no significant impact with regard to the emission of hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of an existing or proposed school. There are six existing schools within 0.25 mile of the proposed project, and one new middle school is proposed to be built roughly 0.18 mile away from the proposed project site.[15]

Emissions to the atmosphere are expected during the construction phase of the proposed project. However, only limited quantities of hazardous materials, such as fuel, lubricants, etc., are expected to be used during this phase. Operation and maintenance of the proposed project would be expected to involve a limited use of potentially hazardous materials. In the unlikely event of an accident, the proposed project has the potential to result in significant impacts to the environment related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste to existing or proposed schools. However, through the elements incorporated into the project design, the proposed project will be below the level of significance.

Hazardous Waste Sites

The proposed project is located on a hazardous materials site materials site pursuant to Government Code 65962.5. A Phase II Environmental Site Assessment[14] concluded that there are no significant concentrations of VOCs, petroleum hydrocarbon, metals, or organochlorine pesticides on the proposed project site. Therefore, the impact to the proposed project site from being located on a

[15] City of Long Beach. Web site. Available at: http://www.longbeach.gov

hazardous materials site is considered to be below the level of significance.

Proposed Project Located Near Airport

The proposed project could result in significant impacts to people residing or working within the project area due to the project's proposed location within 2 miles of a public airport that would be reduced to below the level of significance with the incorporation of mitigation measures. The nearest airport is the Long Beach Municipal Airport located at 4100 Donald Douglas Drive approximately 1.3 miles northeast of the proposed project site. Potentially significant impacts related to safety hazards for people working or residing in the proposed project area in the vicinity of an airport land use plan, a public airport, or a public-use airport can be reduced to below the level of significance with the incorporation of mitigation measures.

Proposed Project Located Near Private Airstrip

The proposed project is not located in the vicinity of a private airstrip. Therefore, no impacts are anticipated in relation to the proposed project site being located near a private airstrip.

Emergency Response Plan or Emergency Evacuation Plan

The proposed project is not expected to impair implementation of or physically interfere with an adopted emergency response plan or an emergency evacuation plan. According to the City General Plan, East Pacific Coast Highway and Cherry Avenue are part of the City's emergency response plan.[16] Any construction at the proposed project site would adhere to the City's emergency response plan and directives. In addition, as part of the proposed project's BMPs, all staff would comply with operational safety procedures that would comply with the emergency plan for the City. Therefore, the proposed project would not be expected to impact the emergency response plan or the emergency evacuation plan.

Wildland Fires

The proposed project would not be expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. According to the County *Proposed Fire Hazard Severity Zone in the Significant Resource Areas Map*,[17] the proposed project site is located within an urbanized setting and would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, there would be no impacts to exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, impacts to the proposed project site from wildland fires are below the level of significance.

Cumulative Impacts

The incremental impact of the proposed project, when added to the related past, present, or reasonably foreseeable, probable future projects listed in Section 2, *Project Description*, of this EIR would not result in cumulative impacts related to hazards and hazardous materials. Because the hazards and hazardous materials impacts expected from the implementation of the proposed project

[16] City of Long Beach, Department of Planning and Building. December 1991. *City of Long Beach General Plan, Transportation Element*. Long Beach, CA.

[17] County of Los Angeles. September 2007. *Proposed Fire Hazard Severity Zones in Significant Resource Areas Map*. Available at: http://frap.cdf.ca.gov/data/frapgismaps/select.asp?record=fhsz_map

do not affect lands outside the boundaries of the proposed project site. The hazards and hazardous materials impacts related to the proposed project do not create any cumulative impacts on the environment outside of the proposed project boundaries.

3.6.5 Mitigation Measures

Measure Hazards-1

To reduce impacts related to routine transport, use, or disposal of hazardous materials hazardous materials during construction, the applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that all contractors transport, store, and handle construction-required hazardous materials in a manner consistent with relevant regulations and guidelines, including those recommended by the California Department of Transportation; the California Regional Water Quality Control Board, Los Angeles Region; the Los Angeles County Municipal Storm Water Permit (National Pollutant Discharge Elimination System Permit No. CAS 004003, Board Order No. 99-060); County of Los Angeles MS4 Permit; and the County of Los Angeles Fire Department. These agencies shall regulate through the permitting process the monitoring and enforcement of this mitigation measure as required by law. Standard personal protective equipment shall be worn during construction operations where warranted.

Measure Hazards-2

To reduce impacts related to routine transport, use, or disposal of hazardous materials during construction, the applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that all contractors immediately control the source of any unauthorized release of hazardous materials using appropriate release containment measures, and remediate any unauthorized release using the methodologies mandated by the City of Long Beach throughout the construction period. The City of Long Beach shall monitor and enforce regulations pertaining to the containment, disposal, and unauthorized release of hazardous materials. Engineering and administrative controls shall be utilized to reduce the potential of accidental releases from hazardous materials during the construction phase.

Measure Hazards-3

To reduce impacts related to routine transport, use, or disposal of hazardous materials, the applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that all contractors are adhering to the appropriate regulations established by the South Coast Air Quality Management District, the Department of Toxic Substances Control, and other relevant guidelines regarding the release of hazardous emissions into the atmosphere and the off-site disposal of contaminated soils throughout the construction period. Engineering and administrative controls shall be utilized to reduce the potential of accidental releases from hazardous materials during the construction phase as well as during normal working hours.

Measure Hazards-4

The applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that all contractors adhere to all federal, state, and local requirements in a manner consistent with relevant public safety regulations and guidelines. Engineering and administrative controls and reporting procedures shall be used to reduce the potential of accidental releases.

3.6.6 Level of Significance after Mitigation

Implementation of mitigation measures Hazards-1 through Hazards-4 would reduce significant impacts related to hazards and hazardous materials to below the level of significance.

3.7 HYDROLOGY AND WATER QUALITY

As a result of the Initial Study (Appendix A), the City of Long Beach (City) determined that the proposed Kroc Community Center (proposed project) had the potential to result in impacts to hydrology and water quality.[1] Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts from hydrology and water quality and to identify potential alternatives.

The analysis of hydrology and water quality consists of a summary of the regulatory framework that guides the decision-making process, a description of the existing conditions at the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation. The potential for impacts to hydrology and water quality have been analyzed in accordance with the methodologies and information provided by the City General Plan;[2] the State of California Regional Water Quality Control Board (RWQCB) Basin Plan for the Hamilton Detention Basin; National Flood Insurance Program Flood Insurance Rate Maps for the County of Los Angeles (County);[3] a 2006 Hamilton Bowl Pump Station / Detention Basin Hydrology Analysis;[4] and the U.S. Geological Survey 7.5-Minute Series, Long Beach, California, Topographic Quadrangle.[5]

3.7.1 Regulatory Framework

This regulatory framework identifies the federal, state, and local statutes and policies that relate to hydrology and water quality and that must be considered by the City during the decision-making process for projects that involve the potential to result in significant impacts related to hydrology and water quality.

Federal

Section 401 of the Clean Water Act of 1972

The 1972 federal Clean Water Act (CWA) sets national goals and policies to eliminate discharge of water pollutants into navigable waters and to achieve a water-quality level that will protect fish, shellfish, and wildlife while providing for recreation in and on the water whenever possible.[6] The CWA regulates point source and non–point source discharges to receiving waters with the National Pollutant Discharge Elimination System (NPDES) program. The CWA provides for delegating certain responsibilities for water-quality control and planning to the states. The State of California has been authorized by the U.S. Environmental Protection Agency (EPA) to administer and enforce

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[1] City of Long Beach, Department of Development Services. 16 July 2007. *Kroc Community Center Initial Study.* Prepared by: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Long Beach, Department of Planning and Building. 1973. *City of Long Beach General Plan, Conservation Element.* Long Beach, CA.

[3] Federal Emergency Management Agency. December 1980. *Flood Insurance Rate Maps for the County of Los Angeles.* DFIRM Panel #0650430955B. Washington, DC.

[4] Moffatt & Nichol. October 2006. *Hamilton Bowl Pump Station / Detention Basin Hydrology Analysis.* Long Beach, CA.

[5] U.S. Geological Survey. [1964] Photo revised 1981. 7.5-Minute Series, Long Beach, California, Topographic Quadrangle. Reston, VA.

[6] 33 U.S.C. Section 1341: "Certification."

portions of the CWA, including the NPDES program. California issues NPDES permits through the State Water Resources Control Board and the nine RWQCBs. The proposed project is regulated by the Los Angeles RWQCB.

In 1987, the CWA was amended to state that the discharge of pollutants to waters of the United States from storm water is effectively prohibited, unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p) and established a framework for regulating industrial, municipal, and construction storm water discharges under the NPDES program. The 1987 amendments were developed from the awareness that storm water runoff, a non–point source discharge, is a significant source of water pollution. In 1990, the U.S. EPA published final regulations that established application requirements to determine when industrial, municipal, and construction activities require an NPDES permit.

On December 13, 2001, the Los Angeles RWQCB adopted Order No. 01-182. This order is the NPDES permit (NPDES CAS004001) for municipal storm water and urban runoff discharges within the County.

As adopted in December 2001, the requirements of Order No. 01-182 (Permit) covers 84 cities and the unincorporated areas of the County, (with the exception of the portion of the County in the Antelope Valley); covered cities include the cities of Lancaster and Palmdale, as well as the City and the City of Avalon. Under the Permit, the County Flood Control District is designated as the principal permittee; the County along with the 84 incorporated cities are designated as permittees. The principal permittee coordinates and facilitates activities necessary to comply with the requirements of the permit, but is not responsible for ensuring compliance of any of the permittees.

In compliance with the permit, the permittees have implemented a Storm Water Quality Management Plan (SQMP), with the ultimate goal of accomplishing the requirements of the permit and reducing the amount of pollutants in storm water and urban runoff. The SQMP is divided into six separate programs, as outlined in the permit. These programs are Public Information and Participation, Industrial/Commercial Facilities, Development Planning, Development Construction, Public Agency Activities, and Illicit Connection / Illicit Discharge. Each permittee is required by the permit to have implemented these programs by February 1, 2002.

General Construction Activity Storm Water Discharges

Storm water discharges that are composed entirely of runoff from qualifying construction activities may be eligible to be regulated under the General Construction Activity Storm Water Permit issued by the SWRCB rather than an individual NPDES permit issued by the appropriate RWQCB. Construction activities that qualify include clearing, grading, excavation, reconstruction, and dredge-and-fill activities that result in the disturbance of at least 5 acres of total land area. The proposed project would be required to conform to the Standard Urban Storm Water Mitigation Plan (SUSMP) as part of compliance with the NPDES General Construction Activity Storm Water Permit to reduce water quality impacts to the maximum extent practicable. A SUSMP is a report that includes one or more site maps, an identification of construction activities that could cause pollutants to enter the storm water and a description of measures or best management practices (BMPs) to control these pollutants to the maximum extent practicable. A BMP is defined by the Storm Water Quality Task Force as any program, technology, process, citing criteria, operating method, measure, or device that controls, prevents, removes, or reduces storm water pollution.

Executive Order 11988

The objective of Executive Order 11988, dated May 24, 1977, is the avoidance of, to the extent possible, long- and short-term adverse impacts associated with the occupancy and modification of the base floodplain (100-year floodplain) and the avoidance of direct and indirect support of development in the base floodplain wherever there is a practicable alternative. Under the Executive Order, the U.S. Army Corps of Engineers must provide leadership and take action to:

- Avoid development in the base floodplain unless it is the only practicable alternative
- Reduce the hazard and risk associated with floods
- Minimize the impact of floods to human safety, health, and welfare
- Restore and preserve the natural and beneficial values of the base floodplain

The proposed project would be subject to Executive Order 11988 if it would result in adverse impacts to the 100-year floodplain.

Regional

Los Angeles Regional Water Quality Control Board Basin Plan

The Los Angeles RWQCB Basin Plan (Basin Plan) is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan (1) designates beneficial uses for surface and ground waters, (2) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy, and (3) describes implementation programs to protect all waters in the region. In addition, the Basin Plan incorporates (by reference) all applicable state and regional board plans and policies and other pertinent water quality policies and regulations. Those of other agencies are referenced in appropriate sections throughout the Basin Plan.

The Basin Plan is a resource for the Los Angeles RWQCB and others who use water and/or discharge wastewater in the Los Angeles region. Other agencies and organizations involved in environmental permitting and resource management activities also use the Basin Plan. Finally, the Basin Plan provides valuable information to the public about local water quality issues.

The Basin Plan is reviewed and updated as necessary. Following adoption by the RWCQB, the Basin Plan and subsequent amendments are subject to approval by the SWRCB, the State Office of Administrative Law, and the U.S. EPA.

The federal CWA is administered and enforced by the SWRCB, which develops regulations to implement water-quality control programs mandated at the federal and state levels.

The Los Angeles RWQCB has prepared a water quality control plan for the Los Angeles region, which includes the coastal watersheds of Los Angeles and Ventura Counties. The first essentially complete Basin Plan, which was established under the requirements of California's 1969 Porter-Cologne Water Quality Control Act [Section 13000 (Water Quality) et seq. of the California Water

Code], was adopted in 1975 and revised in 1984. The most recent version of the Basin Plan was adopted in 1994.[7]

The Basin Plan assigned beneficial uses to surface and groundwater such as municipal water supply and water contact recreation to all waters in the basin. It also set water quality objectives, subject to approval by the U.S. EPA, intended to protect designated beneficial uses. These objectives apply to specific parameters (numeric objectives) and general characteristics of the water body (narrative objectives). An example of a narrative objective is the requirement that all waters must remain free of toxic substances in concentrations producing detrimental effects on aquatic organisms. Numeric objectives specify concentrations of pollutants that are not to be exceeded in ambient waters of the basin.

Local

City of Long Beach General Plan

The City General Plan includes 10 elements. The Conservation element establishes goals and policies for the City along with information regarding hydrology within the proposed project area.

City of Long Beach Conservation Element[8]

Water Resources Management Goals

- To assure adequate quantity and quality of water to meet the present and future domestic, agricultural, and industrial needs of the City.
- To enforce existing ordinances and develop new ordinances and promote continuing research directed toward achieving the required stringent water quality standards, which regulate waste water effluent discharge to ocean waters, bays and estuaries, fresh waters, and groundwater.
- To assure that the waters of San Pedro and Alamitos Bays and Colorado Lagoon are maintained at the highest quality feasible in order to enhance their recreational, commercial utilization.
- To enforce existing controls and ordinances regulating waste discharge from vessels.
- To maintain, upgrade, and improve waste water systems and facilities serving the City.
- To develop a comprehensive City–wide water supply and management program, which utilizes water from all sources, including groundwater.

[7] Regional Water Quality Board, Los Angeles Region. 13 June 1994. *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.* Monterey Park, CA.

[8] City of Long Beach, Department of Planning and Building. 1973. *City of Long Beach General Plan, Conservation Element.* Long Beach, CA.

- To preserve and enhance the open space opportunities offered by the inland waterways of the City through improved access and beautification.

3.7.2 Existing Conditions

The proposed project site is located in the Hamilton Bowl Detention Basin, which serves as a location for storm water runoff during seasonal rains due to its low elevation in relation to the surrounding topography. The site is located northeast of the corner of East Pacific Coast Highway and Walnut Avenue. Storm water drains into the basin from the Cities of Signal Hill and Long Beach. Two on-site pump stations capture and remove the storm water from the basin. Due to the proposed project's presence in the City, the City has jurisdiction of ownership and maintenance of the site. Currently, water is pumped off of the proposed project site into the Los Angeles River in order to keep the area from being inundated with surface water after precipitation and the remaining moisture is saturated into the site through the pervious surface.

General Location Relative to the Pacific Ocean

The proposed project site is located approximately 2 miles north of the Pacific Ocean, and the topography of the proposed project area can be best described as relatively flat with a gentle overall slope of 2 percent, generally to the south. The elevation of the proposed project site ranges from 3 feet to 16 feet above mean sea level (Figure 2.1-2).

Drainage

The Hamilton Bowl area was originally excavated as a joint project of the City and the County Department of Public Works (LACDPW) to create a storm water detention basin in the 1930s. The basin is approximately 1,200 feet long by 800 feet wide and has a storage capacity of approximately 160 acre-feet and is drained by pumping to a gravity outfall.[9]

The City is divided into 30 major drainage basins. The Hamilton Bowl Detention Basin is located with Basin 02. According to the Long Beach Storm Water Management Program, "Basin 02 is 1,276 acres and is made up of 905 acres residential, 287 acres commercial, 22 acres industrial, 59 acres institutional and 3 acres of open space. The basin is bound on the north, south, east and west by Hill Street, 3rd Street, Grand Avenue and the L. A. River, respectively."[10]

There are currently two pump stations located on the site that provide drainage and discharge of water during storm events.[11] The Low-flow Pump Station was constructed during the 1930s and is located on the western border of the proposed project site, and the Hamilton Bowl Pump Station is located at the southern end of the proposed project site. During rain events, storm water from the City also drains into the Hamilton Bowl Detention Basin. The Hamilton Bowl Detention Basin is also used by the City of Signal Hill to comply with their NPDES requirements. Approximately one half of Signal Hill's runoff drains into the Hamilton Bowl Detention Basin. By removing trash from this urban runoff, the City of Signal Hill is able to maintain compliance with local and federal

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[9] Moffatt & Nichol. October 2006. *Hamilton Bowl Pump Station / Detention Basin Hydrology Analysis*. Long Beach, CA.

[10] Long Beach Stormwater Management Program. "Geographic Characterization (Section 3)." Accessed on: March 17, 2009. Available at: http://www.lbstormwater.org/plan/stw-pdfs/LBSWMP_GEOGRAPHIC_CHARACTERISITICS_s3.pdf

[11] Moffatt & Nichol. October 2006. *Hamilton Bowl Pump Station / Detention Basin Hydrology Analysis*. Long Beach, CA.

regulations.[12] At this time, the Low-flow Pump Station has a 30-horsepower electric submersible pump that is used to pump out the dry weather flow and low level flow from the detention basin. This pump is operated by County of Los Angeles staff during storm activity. The Low-flow Pump Station housed a natural gas engine that has already been relocated to the Hamilton Bowl Pump Station, which is situated at the southern edge of the proposed project site.

The larger of the two pump stations is the Hamilton Bowl Pump Station, which discharges storm water into the 10-foot by 12-foot box storm drain, referred to as the 10th Street Storm Drain, that is within Basin 02. The smaller pump station is the original County of Los Angeles pump station, which discharges storm water into a 48-inch drain that outfalls in the Los Angeles River through the Cerritos pump station, located between 10th Street and 11th Street.

The larger Hamilton Bowl pump station at the proposed project site—the brick structure near the southern edge of the site—discharges storm water into the 10-foot by 12-foot box storm drain into Basin 02.

The smaller pump station (in the historic resource structure near Walnut Avenue) discharges storm water into a 48-inch drain that flows through Basin 04 to the Cerritos pump station.

In general, storm water falling on the Hamilton Bowl watershed area drains into the Hamilton Bowl Detention Basin. These storm water flows are then pumped out by the Hamilton Bowl Pump Station via a forecemain into the 10th Street storm drain (Los Angeles County Flood Control Project No. 131). This 10-foot by 12-foot concrete box storm drain structure in 10th Street was constructed in 1954. The 10th Street Storm Drain creates a drainage watershed area within Basin 02 that is bounded by 4th Street on the south, across 10th Street, and extending up to Anaheim Street on the north.

The City retained Moffatt & Nichol (1971) to design the large storm water pump station to be constructed at the Hamilton Bowl Detention Basin, which serves as the main storm water pump today. The discharge line is a 75-inch forcemain that leaves the Hamilton Bowl Pump Station at East Pacific Coast Highway and heads south in Gaviota Avenue until it reaches the 10th Street storm drain. The design of this pump station incorporates devices to control the station's pumps operation and vary their operations according to the available flow capacity of the 10th Street storm drain. With this constraint, the Hamilton Bowl Detention Basin was sized to handle the peak storm when the pump station discharge was restricted due to the 10th Street storm drain limitations.[13]

Maintenance of this drainage system is very important so that a high flood flow capacity may be realized. To aid in this, the City performs maintenance work on the system at least two times a year. Work is also performed on an emergency basis as needed. A plugged drainage system cannot carry water and could cause flooding when it rains. Dumping in the streets or drainage system is in violation of Los Angeles County Ordinance 20.94.040 and Long Beach Municipal Code Section 8.60.

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[12] City of Signal Hill, Public Works. November 2007. Web site. "Storm Water Runoff." Available at: http://www.signal-hill.ca.us/public_works/storm_water_runoff.php

[13] Moffatt & Nichol. October 2006. *Hamilton Bowl Pump Station / Detention Basin Hydrology Analysis.* Long Beach, CA.

Wastewater

The proposed project site is located within the jurisdictional boundaries of the County Sanitation District No. 3. Wastewater flow originating from the proposed project will discharge to a local sewer line, which is not maintained by the County Sanitation Districts (LACSD), for conveyance to the LACSD Pump District No. 7 and No. 9 connection trunk sewer, located on Gardenia Avenue north of Anaheim Street.[14] The trunk sewer is an 18-inch-diameter line that, according to the LACSD,[15] has a capacity of 4.6 million gallons per day (MGD) and conveyed a peak flow of 0.6 MGD when last measured in 2008.

Surface Water Quality

The drainage area that now constitutes the Hamilton Bowl was roughly bounded by Willow Street (on the north), Redondo Avenue (on the east), 4th Street (on the south), and Atlantic Avenue (on the west). The Hamilton Bowl area was the lowest spot within the drainage area and during the winter rainy seasons water ponded in the bowl area. Winter storms would usually cause flooding to occur between Cherry Avenue (on the east) to Atlantic Avenue (on the west) and along East Pacific Coast Highway.

The origin of storm water is due to the fact that the City is located in the semi-arid Southern California coastal area and receives significant rainfall on a seasonal basis. Surface water quality at the proposed project site is presented as analyzed by the City Storm Water Monitoring Report for 2001/2002.[16] Monitoring mass emissions and toxicity was undertaken at three representative mass emission sites during the first wet season and four sites for subsequent wet seasons. The results of the City Storm Water Monitoring Program may be briefly summarized as follows based upon the data for the monitored events available at this time for the program:

- Concentrations of bacteria (total coliform, fecal coliform, and enterococcus) in the Long Beach storm water discharges were high compared to benchmark values based upon receiving water criteria, as is common for all urban runoff. Mean values in the Long Beach storm water discharges are three orders of magnitude greater than the benchmark values. However, other studies have shown that such exceedances are not limited to urban storm water sources but are also measured from undeveloped surrounding land.

- Microbiological data from the City storm water program demonstrate relatively low levels of total coliform, fecal coliform, and fecal streptococcus during all dry weather periods. Tests conducted during wet weather periods resulted in levels of each bacterial component that were one to two orders of magnitude higher than during summer dry weather periods.

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[14] County Sanitation Districts of Los Angeles County. 21 July 2008. Correspondence to Jill Griffiths, City of Long Beach, Long Beach, CA.

[15] County Sanitation Districts of Los Angeles County. 21 July 2008. Correspondence to Jill Griffiths, City of Long Beach, Long Beach, CA.

[16] City of Long Beach. 23 September 2008. *Stormwater Monitoring Report 2001/2002*. Available at: http://www.lbstormwater.org/annualreport/Report/LongBeach2002FinalReport.pdf

- Benchmark values used for trace metals were mostly based upon criteria maximum concentrations values from the California Toxics Rule.[17] Only two metals were found to exceed benchmark values in the Long Beach storm water discharges, and in both cases, only the estuarine/marine benchmarks were exceeded.

- Benchmark values for organic compounds for both saltwater and freshwater were based upon recent assessments conducted by the California Department of Fish and Game.[18] Diazinon benchmarks are routinely exceeded in discharges from the Belmont Pump, Bouton Creek, and the Los Cerritos Channel. Chlorpyrifos, another organophosphate pesticide, was found in significant concentration in water from the second storm event in the Los Cerritos Channel, approximately one order of magnitude greater than the recently updated CDFG benchmark. Other organic compounds are rarely detected in the storm water samples, and when detected, are often very near reporting limits. Glyphosate, which was detected in runoff the previous year, was not detected in runoff from any of the sites during the 2001/2002 season. Low levels of two organochlorine pesticides, DDT and aldrin, were present in a few samples during the past monitoring year. Phthalate compounds are common in the storm water samples but are present at relatively low levels. The highest concentration reported for a phthalate compound this season was 10 μg/1. Both diazinon and chlorpyrifos are undergoing changes in registration due to the high toxicities as well as persistent occurrences in runoff, and their uses may be curtailed or phased out.

- Toxicity was detected for each of the three stations sampled for each of the two wet weather storm events. The toxicity measured was greater this year, and the frequency and magnitude of storm water toxicity from the Long Beach stations is similar to storm water samples from other Southern California watersheds, with Chollas Creek (San Diego) and Ballona Creek (Santa Monica) most similar to the Long Beach Study.

- No significant toxicity was present in any of the Alamitos Bay receiving water samples. Salinity measurements indicated that the wet weather receiving water samples contained about 2 percent or less fresh water. The lack of toxicity in the Alamitos Bay samples is consistent with the results of the wet weather discharge samples, which usually had No Observed Effect Concentration values greater than 5–10 percent.

- All toxicity identification evaluations conducted using the water flea indicated that organophosphate pesticides were the most likely category of toxic constituents.

- The two-year toxicity data also implicated dissolved metals, particularly zinc and copper as causes of storm water toxicity. These conclusions are supported by the toxicity identification evaluation results, by correlations of toxicity with chemical constituents, and by calculations of predicted toxicity based upon measured zinc and copper concentrations in the storm water.

[17] U.S. Environmental Protection Agency. 2000. Washington, D.C.

[18] California Department of Fish and Game, Seipmann and Finlayson. 2002. Sacramento, CA.

Groundwater

Shallow groundwater data came from many sources, which covered a time span of several years and therefore, should be considered approximate and generally representative of the conditions as of the fall of 1986.

In the harbor area, ground water is generally less than 5 feet below the ground surface, being highly influenced by sea level. Inland along the Dominquez Gap, the ground water level slowly drops, being generally greater than 20 feet deep north of East Pacific Coast Highway and greater than 40 feet deep north of Wardlow Road. Similar shallow ground water conditions exist in the Alamitos Gap area. Ground water is generally less than 10 feet below the surface throughout the entire area south of the San Diego Freeway (Interstate 405).

Throughout the City, shallow water is termed unconfined and occurs in the near surface soils more or less independent of their permeability. Underlying this shallow water, there are deep water-bearing zones or aquifers that have been used for domestic water sources.

The proposed project site is south of the San Diego Freeway and Wardlow Road, and just north of East Pacific Coast Highway. Therefore, the ground water levels could be less than 10 feet or more than 20 feet below the surface. The nearest body of water to the proposed project is the Pacific Ocean, which is approximately 1.86 miles south. The proposed project site is nearly completely impermeable due to a 2–4-inch clay layer; therefore, it is not a designated groundwater recharge area. According to the Liquefaction Potential Areas Map, the proposed project site also is located within a minimal liquefaction potential area.[19]

Floodways and 100-Year Flood Zone

The proposed project site is located within Zone X, which is a moderate to low risk flood zone area as indicated in the City General Plan, Federal Emergency Management Agency (FEMA) maps, and Flood Insurance Rate Maps for the County.[20,21,22] The proposed project is located in the Hamilton Bowl Detention Basin, which acts as a storm detention basin for seasonal rains due to its low elevation in relation to the surrounding topography. However, the proposed project site has been classified as Zone X because it is an area outside of the 1-percent chance of flooding (100-Year Flood Zone). In addition, this site is protected from the 1-percent annual chance flood by a levee. According to FEMA, the proposed project area is protected by a provisionally accredited levee.[23] The proposed project site is required to maintain the flood protection for a 50-year design storm event. The LACDPW responsibilities include controlling floods. The LACDPW's Los Angeles River Watershed currently redirects flood water to reduce the impacts of major flood events in the

[19] City of Long Beach, Department of Planning and Building. October 1988. *City of Long Beach General Plan, Seismic Safety Element*. Plate 7. Long Beach, CA.

[20] City of Long Beach, Department of Planning and Building. 1973. *City of Long Beach General Plan, Conservation Element*. Long Beach, CA.

[21] Federal Emergency Management Agency. *Flood Maps*. Available at: http://www.fema.gov/hazard/map/index.shtm

[22] Federal Emergency Management Agency. December 1980. *Flood Insurance Rate Maps for the County of Los Angeles*. DFIRM Panel #06037C1970F. Washington, DC.

[23] Federal Emergency Management Agency. *Flood Maps*. Available at: http://www.fema.gov/hazard/map/index.shtm

region. The watershed encompasses and is shaped by the path of the Los Angeles River and ultimately follows into San Pedro Bay near the City.[24]

The Los Angeles River is channelized to control the runoff and reduce flood-related impacts in the region. Although the portion of the channel that is south of Willow Street in Long Beach is not lined with concrete reinforcement.

Each of the major flood control channels offer the proposed project site protection from flooding during a significant rain event, specifically during a 100-year flood.

Seiche, Tsunamis, and Mudflows

Seiches and tsunamis are the result of tectonic activity, such as an earthquake. A seiche is an oscillation of the surface of a landlocked body of water that can create a hazard to persons and structures on and in the vicinity of the water. The proposed project site is a basin that would not retain water. A tsunami is a long-period, high-velocity tidal surge that can result in a series of very low (trough) and high (peak) sea levels with the potential to inundate areas up to several miles from the coast, creating hazards to people or structures from loss, injury, or death. Most of the hazards created by a tsunami come when a trough follows the peak resulting in a rush of sea water back into the ocean. A mudflow is a moving mass of soil made fluid by a loss of shear strength, generally as a result of saturation from rain or melting snow.

3.7.3 Significance Thresholds

The potential for the proposed project to result in impacts to hydrology and water quality was analyzed in relation to the questions contained in Appendix G of the State of California Environmental Quality Act Guidelines. The proposed project would normally be considered to have a significant impact to hydrology and water quality if the proposed project would:

- Violate any water quality standards or waste discharge requirements
- Substantially deplete groundwater supplies or interfere with groundwater recharge leading to a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)
- Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation either on site or off site
- Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or substantial increase in the rate or amount of surface runoff in a manner that would result in flooding either on site or off site

[24] County of Los Angeles Department of Public Works. 2008. *Los Angeles River Watershed.* Available at: http://ladpw.org/wmd/watershed/LA/

- Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff

- Otherwise substantially degrade water quality

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map

- Place structures within a 100-year flood hazard area that would impede or redirect flood flows

- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam

- Result in inundation by seiche, tsunami, or mudflow

3.7.4 Impact Analysis

Drainage

The design for the proposed project includes upgrades to the drainage infrastructure of the Hamilton Bowl Detention Basin to improve drainage from the proposed project site and to alleviate any erosion or siltation due to the implementation of the proposed project. The proposed project design specifies the use of three pumps to avoid impacts to drainage.

Implementation of the proposed project would have the potential to violate drainage standards. The hydrologic analysis indicates that the 10th Street Storm Drain does not have enough capacity to pass a 50-year design storm.[25] However, it has enough capacity to carry a 10-year storm event. As a result, pumps in the Hamilton Bowl Pump Station have to be turned off during the peak hour of the 50-year storm. For the Hamilton Bowl hydraulic system, the modeling results indicate that the Hamilton Detention Bowl Basin has sufficient capacity to handle the 50-year design storm under the existing condition by using three pumps operating under their original design elevation. Furthermore, it has 3 feet of freeboard or more than 50 acre-feet of extra storage during the peak. Moreover, comparison of the two analyzed pumping scenarios indicates it is critical to set pumps to start pumping early.[26]

The proposed project design thus avoids impacts to storm water drainage by requiring the incorporation of BMPs, the reconfiguration of the Hamilton Bowl Detention Basin, and implementation of the proposed improvements. As discussed in *Phase III: Drainage Improvements* of Section 2, *Project Description*, of this EIR, upgraded infrastructure to the drainage infrastructure of the Hamilton Bowl Detention Basin would be done to accommodate the proposed project and to improve drainage from the proposed project site. Therefore, impacts to hydrology and water quality in relation to exceeding the capacity of existing or planned storm water drainage systems or

[25] Moffatt & Nichol. October 2006. *Hamilton Bowl Pump Station / Detention Basin Hydrology Analysis*. Long Beach, CA.

[26] Moffatt & Nichol. October 2006. *Hamilton Bowl Pump Station / Detention Basin Hydrology Analysis*. Long Beach, CA.

providing substantial additional sources of polluted runoff would be expected to be below the level of significance.

Surface Water Quality

The proposed project would be expected to result in significant impacts to hydrology and water quality in relation to surface water quality. The significantly adverse impacts would be attributed to activities associated with the proposed project's construction, such as demolition, clearing, stockpiling of soils and materials, concrete pouring, and landscaping, thus creating short-term impacts on surface water quality. Pollutants associated with these activities include soils, fertilizers, debris, other materials generated during demolition and clearing; fuels and other fluids associated with the equipment used for construction, paints, concrete slurries; and other hazardous materials. These pollutants would affect water quality if they are washed off site by storm water or non–storm water, or are blown or tracked off site to areas susceptible to wash off by storm water or non–storm water.

Activities related to construction during the implementation of the proposed project and their contribution to the reduction of surface water quality at the site would then have to be properly monitored within acceptable limits. Therefore, implementation of the proposed project has the potential to result in significant impacts to hydrology related to surface water quality, thus requiring consideration of mitigation measures.

Groundwater

The proposed project would not result in significant impacts to hydrology and water quality in relation to groundwater supplies or groundwater recharge, as it is not a groundwater recharge area. The proposed project site is located in the Hamilton Bowl Detention Basin, which in relation to its surrounding topography, is a low elevation region that serves as a detention basin during seasonal rains. While development of the proposed project would result in a portion of the existing 19-acre site being covered in impervious surfaces, which may decrease the amount of ground water recharge; the proposed project site is not designated as current recharge facilities for a groundwater basin by the Metropolitan Water District of Southern California.[27] The proposed project would not deplete ground water supplies, interfere with groundwater recharge, or utilize groundwater supplies. Because a portion of the existing 19-acre site of the proposed project would be covered in impervious surfaces, a reduced amount of moisture saturated into the site may lead to an increased amount of flooding. However, the proposed project has been designed to retain the additional runoff that would result from the additional impervious surface. The proposed project design includes sustainable Leadership in Energy and Environmental Design (LEED) elements to ensure that the proposed project does not significantly impact the groundwater supplies or recharge at the proposed project site.

100-Year Flood Zone

The proposed project would not result in significant impacts to hydrology and water quality in relation to the 100-year flood zone. The entire roughly 19-acre proposed project site is located

[27] Metropolitan Water District of Southern California. November 2005. *Regional Urban Water Management Plan*. Los Angeles, CA.

within Flood Zone X and is protected by a provisionally accredited levee.[28] Moreover, the proposed project does not entail the development of residential units and would not be anticipated to redirect flood flows that would result in flooding of existing housing. The proposed project would include an emergency response and evacuation plan to ensure the safety of the facility tenants and would be required to maintain the flood control measures. These measures as well as flood control improvements have been incorporated into the project design. Therefore, the proposed project is not expected to result in significant impacts to hydrology and water quality related to the 100-year flood zone.

Seiche, Tsunamis, and Mudflows

The proposed project would not result in significant impacts to hydrology and water quality in relation to seiche, tsunamis, and mudflows. Such a conclusion is drawn because the proposed project site is characterized as relatively flat with a gentle overall slope of 2 percent. The land areas within and surrounding the proposed project are not prone to or vulnerable against mudflows and tsunamis. The topography, region, and surrounding land areas of the site effectively eliminate the risk of magnified impact due to seiche, tsunami, or mudflow. As a result, the proposed project would not be expected to result in significant impacts to hydrology and water quality related to seiche, tsunamis, and mudflows. Furthermore, the low relief of the proposed project area does not contribute to the risk for earthquake-related ground failures that would result in mudflows; therefore, there would be no direct or indirect impacts.

Cumulative Impacts

The incremental impact of the proposed project, when considered with the related past, present, or reasonably foreseeable, probable future projects, would not be expected to cause a significant impact from hydrology and water quality. The proposed project has been determined to not impact groundwater; therefore, the implementation of the proposed project would not cumulatively impact groundwater levels and quality when analyzed with the other projects in the area, both related and unrelated. In addition, BMPs would be implemented for sediment and erosion control during construction, and therefore would not cause a significant impact on surface water quality or erosion.

The proposed project would include the incorporation of NPDES, BMPs, and LEED elements, and infrastructure improvements to the Hamilton Bowl Detention Basin, and the SUSMP would reduce potential impacts associated with construction to below the level of significance. Therefore, the incremental impact of the proposed project, when considered with the related past, present, or reasonably foreseeable, probable future projects, would not cause a significant impact to hydrology and water quality.

3.7.5 Mitigation Measures

Measure Hydrology-1

In order to mitigate the hydrology and water quality impact related to surface water quality caused by construction at the project site to below the level of significance, prior to final plans and specifications, the City of Long Beach Department of Development Services shall require that the

[28] City of Long Beach. GIS, Map of 100-Year Floodplains in the City of Long Beach. Available at: http://www.longbeach.gov/civica/filebank/blobdload.asp?BlobID=6273

construction contractor implement best management practices consistent with National Pollutant Discharge Elimination System Permit No. CAS 004003. The construction contractor for each construction phase shall be required to submit a Standard Urban Storm Water Management Plan to the City of Long Beach for review and approval at least 30 days prior to the anticipated need for a grading permit. The City of Long Beach Department of Development Services shall monitor construction to ensure compliance with National Pollutant Discharge Elimination System Permit No. CAS 004003. Such compliance measures would, at a minimum, include preparation and implementation of a local Storm Water Quality Management Plan and a wet Season Erosion Control Plan (for work between October 15 and April 15). These plans shall incorporate all applicable best management practices described in the *California Storm Water Best Management Practice Handbook, Construction Activity* into the construction phase of the project. Prior to construction, temporary measures must be implemented in order to prevent transport of pollutants of concern from the construction site to the storm drainage system. The best management practices should apply to both the actual work areas as well as contractor staging areas. Selection of construction-related best management practices would be in accordance with the requirements of the City of Long Beach Department of Development Services. The City of Long Beach Department of Development Services shall ensure compliance throughout the duration of the project.

Measure Hydrology-2

In order to mitigate the hydrology and water quality impact related to surface water quality caused by construction at the project site, prior to the issuance of permits for all phases of the project, the applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that the plans and specifications require the construction contractor to prepare a Standard Urban Storm Water Mitigation Plan for construction activities and implement best management practices for construction, construction material handling, and waste handling activities, which include the following:

- Schedule excavation, grading, and paving activities for dry weather periods.
- Control the amount of runoff crossing the construction site by means of berms and drainage ditches to divert water flow around the site.
- Identify potential pollution sources from materials and wastes that will be used, stored, or disposed of on the job site.
- Inform contractors and subcontractors about the clean storm water requirements and enforce their responsibilities in pollution prevention.

The construction contractor shall incorporate Standard Urban Storm Water Mitigation Plan requirements and best management practices to mitigate storm water runoff, which include the following:

- The incorporation of bio-retention facilities located within the project area.
- The incorporation of catch basin filtration systems.
- The use of porous pavements to reduce runoff volume.

Measure Hydrology-3

In order to mitigate the hydrology and water quality impact related to surface water quality caused by construction at the project site, the applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that the construction contractor is undertaking

daily street sweeping and trash removal throughout the construction of the project to avoid degradation of water quality.

3.7.6 Level of Significance after Mitigation

Implementation of mitigation measures Hydrology-1 through Hydrology-3 would reduce significant hydrology and water quality impacts related to surface water quality during construction to below the level of significance.

3.8 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

As a result of the analysis undertaken in the Initial Study for the proposed Kroc Community Center (proposed project),[1] the City of Long Beach (City) determined that the proposed project may result in environmental impacts to the National Pollutant Discharge Elimination System (NPDES). Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to NPDES and to identify potential alternatives.

The analysis of NPDES includes a summary of the regulatory framework that guides the decision-making process, a description of the existing conditions at the proposed project area, thresholds for assessing the level of significance of impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation. Potential impacts to NPDES at the proposed project site were evaluated in accordance with Section 15064 et seq. of the State of California Environmental Quality Act (CEQA) Guidelines. Potential NPDES impacts at the proposed project site were evaluated in accordance with the methodologies and information provided by the City General Plan,[2] the *California Storm Water Best Management Practice Handbook* for Construction Activity,[3] the City Storm Water Management Plan,[4] and a 2006 Detention Basin Analysis.[5]

3.8.1 Regulatory Framework

This regulatory framework identifies the federal, state, and local statutes and policies related to NPDES that must be considered by the City during the decision-making process for projects that involve the potential to result in significant impacts related to NPDES.

Federal

Section 401 of the Clean Water Act of 1972

The federal Clean Water Act (CWA) of 1972 sets national goals and policies to eliminate discharge of water pollutants into navigable waters and to achieve a water-quality level that will protect fish, shellfish, and wildlife while providing for recreation in and on the water whenever possible.[6] The CWA regulates point-source and non-point-source discharges to receiving waters with the NPDES program. The CWA provides for delegating certain responsibilities for water-quality control and planning to the states. The State of California has been authorized by the U.S. Environmental Protection Agency (EPA) to administer and enforce portions of the CWA, including the NPDES program. California issues NPDES permits through the State Water Resources Control Board

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[1] City of Long Beach, Department of Development Services. 16 July 2008. *Kroc Community Center Initial Study*. Prepared by: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Long Beach, Department of Planning and Building. 30 April 1973. *City of Long Beach General Plan, Conservation Element*. Long Beach, CA.

[3] California Storm Water Quality Association. 2003. *California Storm Water Best Management Practice Handbook*. Menlo Park, CA. Available at: http://www.cabmphandbooks.com/Documents/Construction/Section_3.pdf

[4] City of Long Beach. Revised August 2001. *Stormwater Management Plan*. Available at: http://www.lbstormwater.org/plan/

[5] Moffatt & Nichol. 23 January 2006. *The Salvation Army Kroc Community Center Preliminary Conceptual Level Detention Basin Analysis*. Long Beach, CA.

[6] 33 U.S.C. Section 1341: "Certification."

(SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs). The proposed project is regulated by the Los Angeles RWQCB.

In 1987, the CWA was amended to state that the discharge of pollutants to waters of the United States from storm water is effectively prohibited, unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p) and established a framework for regulating industrial, municipal, and construction storm water discharges under the NPDES program. The 1987 amendment was developed from the awareness that storm water runoff, a non-point-source discharge, is a significant source of water pollution. In 1990, the U.S. EPA published final regulations that established application requirements to determine when industrial, municipal, and construction activities require an NPDES permit.

On December 13, 2001, the Los Angeles RWQCB adopted Order No. 01-182. This order is for NPDES Permit No. CAS004001 for municipal storm water and urban runoff discharges within the County of Los Angeles (County).

As adopted in December 2001, Order No. 01-182 covers 84 cities and the unincorporated areas of the County (with the exception of the portion of the County in the Antelope Valley); covered areas include the Cities of Lancaster and Palmdale, as well as the City and the City of Avalon. Under Order No. 01-182, the County Flood Control District is designated as the principal permittee; the County and the 84 incorporated cities are designated as permittees. The principal permittee coordinates and facilitates activities necessary to comply with the requirements of Order No. 01-182, but is not responsible for ensuring compliance of any of the other permittees.

In compliance with Order No. 01-182, the permittees have implemented a Storm Water Quality Management Plan (SWQMP), with the ultimate goal of accomplishing the requirements of Order No. 01-182 and reducing the amount of pollutants in storm water and urban runoff. The SWQMP is divided into six separate programs, as outlined in Order No. 01-182. These programs are as follows:

1. Public Information and Participation
2. Industrial/Commercial Facilities
3. Development Planning
4. Development Construction
5. Public Agency Activities
6. Illicit Connection/Illicit Discharge

Each permittee was required by the permit to have implemented these programs by February 1, 2002.

NPDES Permit

As a part of the NPDES permit issued to the County by the Los Angeles RWQCB, the City SWQMP requires new developments to meet the permit requirements through a Standard Urban Storm Water Mitigation Plan (SUSMP). The construction phases and operation of the proposed project would require a SUSMP and overall compliance with the NPDES permit programs. The SUSMP outlines the best management practices (BMPs) to reduce or eliminate non–storm water discharges to the storm water system. These requirements meet the water quality standards set forth by the presiding agencies and address storm runoff quantity and flow rate, suspended solids (primarily from erosion), and contaminants such as phosphorus (primarily from landscaping) and

hydrocarbons (primarily from automobiles). The proposed project would not violate any BMPs for the NPDES.

The primary objectives of the 1987 amendments to the CWA that established a framework for regulating storm water discharges from municipal, industrial, and construction activities under the NPDES include the following:

- Effectively prohibiting non–storm water discharges
- Reducing the discharge of pollutants from storm water conveyance systems to the maximum extent practicable

In the Water Quality Act of 1987, Congress mandated that EPA establish a storm water control program in two phases. Phase I application requirements were published on November 16, 1990, and Phase II regulations were published December 8, 1999.

Phase I regulates storm water discharges from medium and large construction activities of 5 acres or larger (or less than 5 acres if part of a common plan of development or sale), and industrial activities. Phase II extends to activities that would be less than 1 acre in size. The proposed project has been determined to meet the specifications under the Phase I regulations for storm water discharges. The proposed project site operations consist of construction-related activities on up to 19 acres, which includes the development of building pads and pavement of the proposed parking lot and landscaped areas.

Total Maximum Daily Loads

Upon establishment of total maximum daily loads (TMDLs) by the U.S. EPA or the State of California, the State of California is required to incorporate the TMDLs along with appropriate implementation measures into the State Water Quality Management Plan (40 CFR 130.6(c)(1), 130.7). The RWQCB Basin Plan and applicable statewide plans serve as the State Water Quality Management Plan governing the Los Angeles–Long Beach Harbor Complex waters.

In general, the State of California and the City have indicated that the prevailing contributory contamination issues with regards to TMDLs are:

- Storm water runoff
- Sediment transported during runoff events
- Sediment within receiving water mobilized and transported within the system
- Point sources
- Groundwater
- Urban runoff (dry -weather)

Target areas of concern are benthic community effects and sediment toxicity for the Los Angeles–Long Beach Harbor Complex. The City and the State of California review impacts to the Los Angeles–Long Beach Harbor Complex as numeric targets identify the specific water column, sediment, and/or tissue goals or endpoints for the TMDLs that equate to attainment of the narrative and/or numeric water quality standards. In some cases, multiple indicators and associated numeric

target values may be needed to interpret applicable water quality standards (e.g., where there is uncertainty that a single indicator is sufficient to measure protection of designated uses).[7]

General Construction Activity Storm Water Discharges

Storm water discharges that are composed entirely of runoff from qualifying construction activities may be eligible for regulation under the General Construction Activity Storm Water Permit issued by the SWRCB rather than regulation under an individual NPDES permit issued by the appropriate RWQCB. Construction activities that qualify include clearing, grading, excavation, reconstruction, and dredge-and-fill activities that result in the disturbance of at least 5 acres of total land area. The proposed project would be required to conform to the SUSMP in accordance with the NPDES General Construction Activity Storm Water Permit to reduce water quality impacts to the maximum extent practicable. A SUSMP is a report that includes one or more site maps, an identification of construction activities that could cause pollutants to enter the storm water, and a description of measures or BMPs to control these pollutants to the maximum extent practicable. A BMP is defined by the Storm Water Quality Task Force as any program, technology, process, siting criteria, operating method, measure, or device that controls, prevents, removes, or reduces storm water pollution.

Construction storm water BMPs include but are not limited to dewatering runoff controls and construction equipment decontamination. Storm water pollution prevention measures during construction also include recommended practices described in the *Storm Water Best Management Practice Handbook for Construction*.[8]

Regional

Water Quality Control Plan for the Los Angeles Region

The federal CWA is administered and enforced by the SWRCB, which develops regulations to implement water quality control programs mandated at the federal and state levels.

The Los Angeles RWQCB has prepared a Basin Plan that includes the coastal watersheds of Los Angeles and Ventura Counties. The first essentially complete Basin Plan, which was established under the requirements of California's 1969 Porter-Cologne Water Quality Control Act,[9] was adopted in 1975 and revised in 1984. The most recent version of the Basin Plan was adopted in 1994.[10]

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[7] U.S. Environmental Protection Agency, Region 9 Water Division. 2004. *Los Angeles and Long Beach Harbor Complex Framework for Calculating TMDLs*. Available at: http://www.epa.gov/region09/water/

[8] California Storm Water Quality Association. 2003. *California Storm Water Best Management Practice Handbooks: Construction*. Menlo Park, CA. Also Available at: http://www.cabmphandbooks.com/Documents/Construction/Section_3.pdf

[9] State of California. 1969. Porter-Cologne Water Quality Control Act. California Water Code, Section 13000 et seq.: "Water Quality." Available at: http://www.ceres.ca.gov/index.html

[10] California Regional Water Quality Board, Los Angeles Region (4). 13 June 1994. *Water Quality Control Plan Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. Los Angeles, CA.

The Basin Plan assigned beneficial uses to surface and groundwater such as municipal water supply and water contact recreation to all waters in the basin. The Basin Plan also sets water quality objectives, subject to approval by the U.S. EPA, which are intended to protect designated beneficial uses. These objectives apply to specific parameters (numeric objectives) and general characteristics of the water body (narrative objectives). An example of a narrative objective is the requirement that all waters must remain free of toxic substances in concentrations producing detrimental effects on aquatic organisms. Numeric objectives specify concentrations of pollutants that are not to be exceeded in ambient waters of the basin.

Local

City of Long Beach General Plan

The City and the California *Storm Water Best Management Practice Handbook* for Construction Activity[11] has identified standard BMPs that are capable of reducing impacts to soil erosion to below the level of significance.

City of Long Beach Storm Water Management Plan

The objective of the federal CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Section 402(p) of the CWA, as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges from municipal separate storm sewers (MS4s) to waters of the United States. Section 402(p)(3)(B) requires the following for MS4 permits:

> (i) may be issued on a system- or jurisdiction-wide basis; (ii) shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers; and (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

On June 30, 1999 the City was issued NPDES Permit No. CAS 004003. Prior to NPDES Permit No. CAS 004003, municipal storm discharges from the City's storm drain systems were regulated under countywide waste discharge requirements contained in Order No. 90-079 and Order No. 96-054. The City is fully implementing the Long Beach Storm Water Management Program (LBSWMP) to meet the objectives of effectively prohibiting non–storm water discharges and reducing the discharge of pollutants to the maximum extent practicable such that these discharges will not adversely impact the beneficial uses of the City's receiving waters. Essentially, the City's ultimate objective is to comply with the federal CWA and the state Porter-Cologne Water Quality Control Act.

[11] California Storm Water Quality Association. 2003. *California Storm Water Best Management Practice Handbook.* Menlo Park, CA. Available at: http://www.cabmphandbooks.com/Documents/Construction/Section_3.pdf

The LBSWMP is a comprehensive program containing several elements, practices, and activities aimed at reducing or eliminating pollutants in storm water to the maximum extent practicable. The programs that are relevant to the proposed project that contribute toward preventing and mitigating storm water pollution include the following:

- Street maintenance, which consists of the following elements: street sweeping, sidewalk and alley cleaning, and maintenance operations
- Sewage systems operations and maintenance
- Storm drain systems operation and maintenance
- Municipal facilities maintenance
- Public construction activities
- Landscaping maintenance

The LBSWMP also addresses the planning of development projects and construction of projects not within the public street right-of-ways.

3.8.2 Existing Conditions

Drainage

The proposed project area was originally excavated as a joint project of the City and the County Department of Public Works (LACDPW) to create a storm water detention basin in the 1930s. It is located northeast of the corner of East Pacific Coast Highway and Walnut Avenue. The basin is approximately 1,200 feet long by 800 feet wide and has a storage capacity of approximately 160 acre-feet and is drained by pumping to a gravity outfall.[12]

The City is divided into 30 major drainage basins. The Hamilton Bowl Detention Basin is located with Basin 02. According to the Long Beach Storm Water Management Program, "Basin 02 is 1,276 acres and is made up of 905 acres residential, 287 acres commercial, 22 acres industrial, 59 acres institutional and 3 acres of open space. The basin is bound on the north, south, east and west by Hill Street, 3rd Street, Grand Avenue and the L. A. River, respectively."[13]

There are currently two pump stations located on the site that provide drainage and discharge of water during storm events.[14] The Low-flow Pump Station was constructed during the 1930s and is located on the western border of the proposed project site, and the Hamilton Bowl Pump Station is located at the southern end of the proposed project site. During rain events, storm water from the City also drains into the Hamilton Bowl Detention Basin. The Hamilton Bowl Detention Basin is also used by the City of Signal Hill to comply with their NPDES requirements. Approximately one half of Signal Hill's runoff drains into the Hamilton Bowl Detention Basin. By removing trash from this urban runoff, the City of Signal Hill is able to maintain compliance with local and federal regulations.[15] At this time, the Low-flow Pump Station has a 30-horsepower electric submersible

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[12] Moffatt & Nichol. October 2006. *Hamilton Bowl Pump Station / Detention Basin Hydrology Analysis*. Long Beach, CA.

[13] Long Beach Stormwater Management Program. "Geographic Characterization (Section 3)." Accessed on: March 17, 2009. Available at: http://www.lbstormwater.org/plan/stw-pdfs/LBSWMP_GEOGRAPHIC_CHARACTERISITICS_s3.pdf

[14] Moffatt & Nichol. October 2006. *Hamilton Bowl Pump Station / Detention Basin Hydrology Analysis*. Long Beach, CA.

[15] City of Signal Hill, Public Works. November 2007. Web site. "Storm Water Runoff." Available at: http://www.signal-hill.ca.us/public_works/storm_water_runoff.php

pump that is used to pump out the dry weather flow and low level flow from the detention basin. This pump is operated by County of Los Angeles staff during storm activity. The Low-flow Pump Station housed a natural gas engine that has already been relocated to the Hamilton Bowl Pump Station, which is situated at the southern edge of the proposed project site.

The larger of the two pump stations is the Hamilton Bowl Pump Station, which discharges storm water into the 10-foot by 12-foot box storm drain, referred to as the 10th Street Storm Drain, that is within Basin 02. The smaller pump station is the original County of Los Angeles pump station, which discharges storm water into a 48-inch drain that outfalls in the Los Angeles River through the Cerritos pump station, located between 10th Street and 11th Street.

The larger Hamilton Bowl pump station at the proposed project site—the brick structure near the southern edge of the site—discharges storm water into the 10-foot by 12-foot box storm drain into Basin 02.

The smaller pump station (in the historic resource structure near Walnut Avenue) discharges storm water into a 48-inch drain that flows through Basin 04 to the Cerritos pump station.

In general, storm water falling on the Hamilton Bowl watershed area drains into the Hamilton Bowl Detention Basin. These storm water flows are then pumped out by the Hamilton Bowl Pump Station via a forcemain into the 10th Street storm drain (County Flood Control Project No. 131). This 10-foot by 12-foot concrete box storm drain structure in 10th Street was constructed in 1954 The 10th Street Storm Drain creates a drainage watershed area that is bounded by 4th Street on the south across 10th Street extending up to Anaheim Street on the north.

The City retained Moffatt & Nichol (1971) to design the large storm water pump station to be constructed at the Hamilton Bowl Detention Basin, which serves as the main storm water pump today. The discharge line is a 75-inch forcemain that leaves the Hamilton Bowl Pump Station at East Pacific Coast Highway and heads south in Gaviota Avenue until it reaches the 10th Street storm drain. The design of this pump station incorporates devices to control the station's pumps operation and vary their operations according to the available flow capacity of the 10th Street storm drain. With this constraint, the Hamilton Bowl Detention Basin was sized to handle the peak storm when the pump station discharge was restricted due to the 10th Street storm drain limitations.[16]

Maintenance of this drainage system is very important so that a high flood flow capacity may be realized. To aid in this, the City performs maintenance work on the system at least two times a year. Work is also performed on an emergency basis as needed. A plugged drainage system cannot carry water and could cause flooding when it rains. Dumping in the streets or drainage system is in violation of County Ordinance 20.94.040 and Long Beach Municipal Code Section 8.60.

Drainage water flowing from the Los Angeles River formerly entered the harbors where the Dominguez Channel now drains. The Dominguez Channel watershed is approximately 260 square kilometers and is a highly urbanized watershed. The Los Angeles River watershed is approximately 2,100 square kilometers and has a diverse land use composition, including significant open and forested land in the upper third of the watershed and the remainder composed of various highly urbanized land uses. Flow and water quality measurements collected at tributary stations

[16] Moffatt & Nichol. October 2006. *Hamilton Bowl Pump Station / Detention Basin Hydrology Analysis.* Long Beach, CA.

(headwater or confluence stations) are used to model input representing inflows from dry urban runoff.

Pervious Surface

The proposed project site is an undeveloped field and, with the exception of several structures, is nearly completely permeable. The proposed project site is not designated as a groundwater recharge area.

Surface Water Quality

Surface water quality in the proposed project area has been affected in a way that is consistent with the urban development that has occurred. Non-point-source pollution from urban, impervious surfaces (i.e., parking lots, roadways, sidewalks, rooftops, etc.) is a major contributor to impairment of streams and waterways. Impervious surfaces contribute grease, oil, antifreeze, and other vehicle emissions, as well as heavy metals from brake dust, litter, and other debris and pathogens, into water systems. Landscaped areas contribute pesticides, fertilizers, and other landscape waste into the water system. The site operates as the Hamilton Bowl Detention Basin. This site is used as a storm water detention basin, a NPDES compliance site for the City of Signal Hill and the City, and consists almost entirely of pervious surfaces.

3.8.3 Significance Thresholds

The potential for the proposed project to result in impacts to NPDES was analyzed in relation to the questions contained in Appendix G of the State CEQA Guidelines. The proposed project would normally be considered to have a significant impact to NPDES when the potential for any one of the following three thresholds occurs:

- Results in a significant loss of pervious surface
- Creates a significant discharge of pollutants into the storm drain or waterway
- Violates any BMP of the NPDES permit

3.8.4 Impact Analysis

Drainage

As discussed in Section 3.7, *Hydrology and Water Quality*, of this EIR, the design for the proposed project includes upgrades to the drainage infrastructure of the Hamilton Bowl Detention Basin to improve drainage from the proposed project site and to alleviate any erosion or siltation due to the implementation of the proposed project. Upgraded infrastructure to the drainage infrastructure of the Hamilton Bowl Detention Basin would be done to accommodate the proposed project and to improve drainage from the proposed project site. Therefore, impacts to drainage would not be considered significant.

Pervious Surface

The proposed project would result in significant impacts from the loss of pervious surfaces that would be reduced to below the level of significance by the BMPs and Leadership in Energy and Environmental Design (LEED) elements in the project design and with the incorporation of mitigation measures. The current site is pervious to rainfall. Proposed site improvements would be

expected to reduce a portion of the change the pervious areas. Infiltration at the site would increase current levels and the overall volume of flow accumulating on or off site would change from existing conditions. However, it is anticipated the project design features would ensure that the anticipated increase is off-set and reduced. Therefore, the proposed project would result in significant impacts related to NPDES, which would result in an impact from loss of pervious surfaces. However, the implementation of BMPs and mitigation measures would reduce impacts to below the level of significance.

Storm Drain and Waterway

The proposed project consists of the development of a recreational facility. Development of the recreational facility would not be expected to create a significant discharge of pollutants into the storm drain or waterway after incorporation of project elements and BMPs. The total increase in vehicular trips on roadways and driveways, and the associated increase in parking surrounding the proposed project site, would be expected to contribute additional pollutants to storm water runoff.

The municipal storm water NPDES permit issued to the County by the Los Angeles RWQCB in 1996 requires the development and implementation of a program addressing storm water pollution issues in development planning for private projects. As part of the NPDES permit, the LBSWMP requires new developments to meet the permit requirements through BMPs to reduce or eliminate non–storm water discharges to the storm water system. These requirements meet the water quality standards as set forth by the responsible agencies and address storm runoff quantity and flow rate, suspended solids (primarily from erosion), and contaminants such as phosphorus (primarily from landscaping) and hydrocarbons (primarily from automobiles). The implementation of BMPs and mitigation measures would reduce impacts to below the level of significance.

Implementation of BMPs with regards to hazardous waste is to prevent or reduce the discharge of pollutants to storm water from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.

Construction of the proposed project would include the implementation of a Storm Water Pollution Prevention Plan and BMPs to reduce the level of impact of proposed project–related activities. In addition, the site would be improved in the manner described in the Section 3.7 of this EIR to ensure compliance with NPDES requirements. It is anticipated that with the incorporation of these measures, potentially significant impacts related to the compliance of the proposed project with BMPs of the NPDES permit would be reduced to below the level of significance.

Cumulative Impacts

The incremental impact of the proposed project, when considered with the related past, present, or reasonably foreseeable, probable future projects as discussed in Section 2, *Project Description*, of this EIR, would not cause a significant cumulative impact to the NPDES permit. The proposed project would not impact NPDES because sustainable elements within the proposed project design would limit the net increase in impervious surfaces from that of the existing conditions that would otherwise be expected to result from the development proposed project. The proposed project would include the incorporation of LEED elements and BMPs for reducing discharge of the pollutants into the storm drain and waterway system. Therefore, implementation of the proposed project would not cause a significant cumulative impact on NPDES when considered with the related past, present, or reasonably foreseeable, probable future project.

3.8.5 Mitigation Measure

Measure NPDES-1

The applicant shall be required to demonstrate that the construction contractor is implementing best management practices consistent with National Pollutant Discharge Elimination System Permit No. CAS 004003 to reduce transport of pollutants of concern from the construction site to the storm drainage and waterway system for each construction phase of the project as well as during the operation of the project. Prior to the issuance of permits for each construction phase of the project, the applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that final plans and specifications require compliance with National Pollutant Discharge Elimination System Permit No. CAS 004003 throughout the life of the project. The construction contractor for each construction phase shall be required to submit a Standard Urban Storm Water Management Plan to the City of Long Beach Department of Development Services for review and approval at least 30 days prior to the anticipated need for a grading permit. The City of Long Beach Department of Development Services shall monitor construction to ensure compliance with National Pollutant Discharge Elimination System Permit No. CAS 004003. The City of Long Beach Department of Development Services shall ensure National Pollutant Discharge Elimination System compliance throughout the duration of the project.

3.8.6 Level of Significance after Mitigation

Implementation of mitigation measure NPDES-1 would be expected to reduce potential impacts to NPDES to below the level of significance.

3.9 LAND USE AND PLANNING

As a result of the Initial Study (Appendix A), the City of Long Beach (City) determined that the proposed Kroc Community Center (proposed project) had the potential to result in impacts to land use and planning. Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to land use and planning and to identify potential alternatives.

The analysis of land use and planning consists of a summary of the regulatory framework that guides the decision-making process, a description of the existing conditions at the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and the level of significance after mitigation. Land use and planning at the proposed project site were evaluated with regard to state, regional, and local data and forecasts for land use and planning, and the City General Plan.[1]

The proposed project lies within the primary land use jurisdiction of the City. As such, the proposed project is required to comply with the City land use policies, ordinances, and regulations. The proposed project is subject to comply with the City General Plan.

3.9.1 Regulatory Framework

Regional

The Open Space and Conservation element of the Southern California Association of Governments' Regional Comprehensive Plan and Guide states that urban-type land uses and facilities are required to support future additional population growth, which will consume a large portion of the remaining privately held land in the region.[2] The plan emphasizes four primary goals:

- Provide adequate opportunities to meet the needs for outdoor recreation, considered important for providing a good quality of life for residents who live in highly urbanized areas of the region
- Maintain open space for adequate protection to lives and properties against natural and man-made disasters
- Maintain adequate viable resource production lands, particularly those set aside for commercial and mining operations
- Develop well-managed viable ecosystems or known habitats of rare, threatened, and endangered species

[1] City of Long Beach, Department of Planning and Building. July 1991. *City of Long Beach General Plan, Land Use Element.* Long Beach, CA.

[2] Southern California Association of Governments. Adopted April 1995. *Regional Comprehensive Plan and Guide.* Chapter 9, "Open Space and Conservation." Available at: http://www.scag.ca.gov/rcp/pdf/pastprojects/1996RCPGOpenSpaceChapter.pdf

Local

Land Use Designation

The City land use designation for the proposed project site is Land Use District (LUD) No. 11 Open Space and Park District. All lands designated LUD No. 11 are intended to remain in or be redeveloped in the future in (essentially) an open condition.

The proposed project would include amending the land use designation to LUD No. 10 – Institutional and School District, in order to accommodate the full spectrum of services to be offered by the proposed project. The City General Plan describes land uses in LUD No. 10 as "characterized by the permanence of the built use, or the intentions for such use, once the location has been established for the proper citywide or subregional distribution of public services." These uses include civic buildings and academic, medical, and religious headquarters and facilities. The Land Use element further states that "institutional uses serve basic public needs over a long period of time, enduring through changes in the surrounding socio-economic environment." [3]

Zoning

The proposed project site is currently zoned as Park (P) and the City Zoning Ordinance lists Hamilton Bowl / Chittick Field as a Special Use Park. The proposed project would be built atop a raised building pad, which would be re-zoned as Institutional (I).[4] The lower portions of the site would continue to function as flood detention and open space, which would be consistent with the existing zoning class specifications. The purpose of the "I" zoning classification is to create, preserve, and enhance areas for public and institutional land uses. The "I" zoning designation would allow for the spectrum of services to be combined and incorporated into the proposed project, including an educational and vocational training center and day care.[5]

According to the City Zoning Ordinance:

> "any site with a lot area exceeding forty thousand square feet shall submit a long range development plan for the institution. Such long range development plan shall include all development of the site and site expansions (within the institutional zone or under the institution's ownership, whichever is greater) anticipated over the next twenty years. Such plan shall be submitted to the planning commission for approval through the site plan review procedure. No site plan review shall be approved and no building permit shall be issued for any building or structure which is not consistent with the long range development plan."[6]

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[3] City of Long Beach, Department of Planning and Building. July 1991. *City of Long Beach General Plan, Land Use Element*. Long Beach, CA.

4 City of Long Beach. 1988. Title 21, Zoning, Chapter 21.34, Institutional District. Available at: http://municipalcodes.lexisnexis.com/codes/longbeach/_DATA/TITLE21/index.html

[5] City of Long Beach. 1988. Title 21, Zoning, Chapter 21.34, Institutional District. Available at: http://municipalcodes.lexisnexis.com/codes/longbeach/_DATA/TITLE21/index.html

[6] City of Long Beach. 1988. Title 21, Zoning, Chapter 21.34, Institutional District. Available at: http://municipalcodes.lexisnexis.com/codes/longbeach/_DATA/TITLE21/index.html

City of Long Beach General Plan, Land Use Element and Open Space and Recreation Element

The Land Use element of the City General Plan provides the following goal related to land use and planning in the proposed project area:

- Arts and Culture Support: Long Beach recognizes art and culture to be necessary ingredients of a quality living environment, and will create and support the mechanisms through which private individuals and organizations can expand cultural opportunities for all residents.

The Land Use element of the City General Plan[7] states that, in the Central Area neighborhood, a severe shortage in open recreation space exists and further notes that "enhancements are needed in the form of additional park and recreation space, school facilities and day care [for the Central Area neighborhood]."

The Open Space and Recreation element of the City General Plan[8] provides the following goal related to land use and planning in the proposed project area:

Goal 4.2: Add recreation open space and recreation facilities in the areas of the City that are most underserved.

The City Strategic Plan 2010[9] states the need for additional youth services in the City of Long Beach:

> "A burgeoning population of children and youth, as well as an increase in the population of working parents, has left many youths on their own. Our parks, playgrounds, and libraries are crowded. Non-profit agencies and City departments offer some organized, constructive social activities for teens, but there is not enough. As a result, many youths are not realizing their full potential, not realizing the importance of belonging to a community, and are at risk for antisocial behavior. We must find the resources to encourage youth to engage in productive activities."

3.9.2 Existing Conditions

Existing Land Use

The proposed project is located on the Hamilton Bowl / Chittick Field site in the Central Area neighborhood of the City (2.1-1). The proposed project site currently operates as a storm water detention basin, a National Pollution Discharge Elimination System–compliance site for the City of Signal Hill and the City, and as a general recreational area for seasonal sports by the surrounding community. The land uses surrounding the proposed project site include a small flood control area to the north, a residential area to the east, commercial development along East Pacific Coast Highway to the south, and Long Beach City College–Pacific Coast Campus to the west.

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[7] City of Long Beach, Department of Planning and Building. July 1991. *City of Long Beach General Plan, Land Use Element.* Long Beach, CA.

[8] City of Long Beach, Department of Planning and Building. October 2002. *City of Long Beach General Plan, Open Space and Recreation Element.* Long Beach, CA.

[9] City of Long Beach. 20 June 2000. *Long Beach Strategic Plan 2010.* Long Beach, CA. Available at: http://www.longbeach.gov/civica/filebank/blobdload.asp?BlobID=3191

Land Use Designation

The City General Plan Land Use element[10] designates the site as LUD No. 11 Open Space and Park District.

Zoning Designation

The proposed project site is currently zoned Park (P) (Figure 3.9.2-1, *Existing Land Uses*). As previously stated, the City Zoning Ordinance lists the Hamilton Bowl / Chittick Field site as a Special Use Park.

The proposed project site consists of largely undeveloped parcels of land with three structures on the detention basin. A structure for restrooms and the Low-flow Pump Station are located off Walnut Avenue on the west side of the property. There is a privately owned single-family residence located near the northwest corner and outside of the proposed project site. The Hamilton Bowl Pump Station is located on the south side of the site and borders commercial development off East Pacific Coast Highway.

Adjacent Land Uses and Land Use Compatibility

The land uses surrounding the proposed project site include a flood control area to the north, a residential area to the east, commercial development along the East Pacific Coast Highway to the south, and institutional uses to the west. The land use designations surrounding properties to the immediate north, east, south, and west are LUD 9R, Restricted Industry; LUD 3B, Moderate Density Residential; LUD 8M, Mixed Office / Residential Strips; and LUD 10, Institutional and School respectively. Adjacent and neighboring land uses near the proposed project site are largely commercial and residential land uses, including: LUD 8A, Traditional Retail Strip Commercial District; LUD 1, Single-Family District; and LUD 2, Mixed Style Homes District.

The existing land uses on the proposed project site, including its recreational uses and its use as a storm water detention basin, does not conflict with the surrounding land uses.

3.9.3 Significance Thresholds

The potential for the proposed project to result in impacts related to land use and planning was analyzed in relation to the questions contained in Appendix G of the State California Environmental Quality Act Guidelines. The project would normally be considered to have a significant impact to land use and planning when the potential for any one of the following three thresholds occurs:

- Conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Physical division of an established community.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

[10] City of Long Beach, Department of Planning and Building. July 1991. *City of Long Beach General Plan, Land Use Element*. Long Beach, CA.

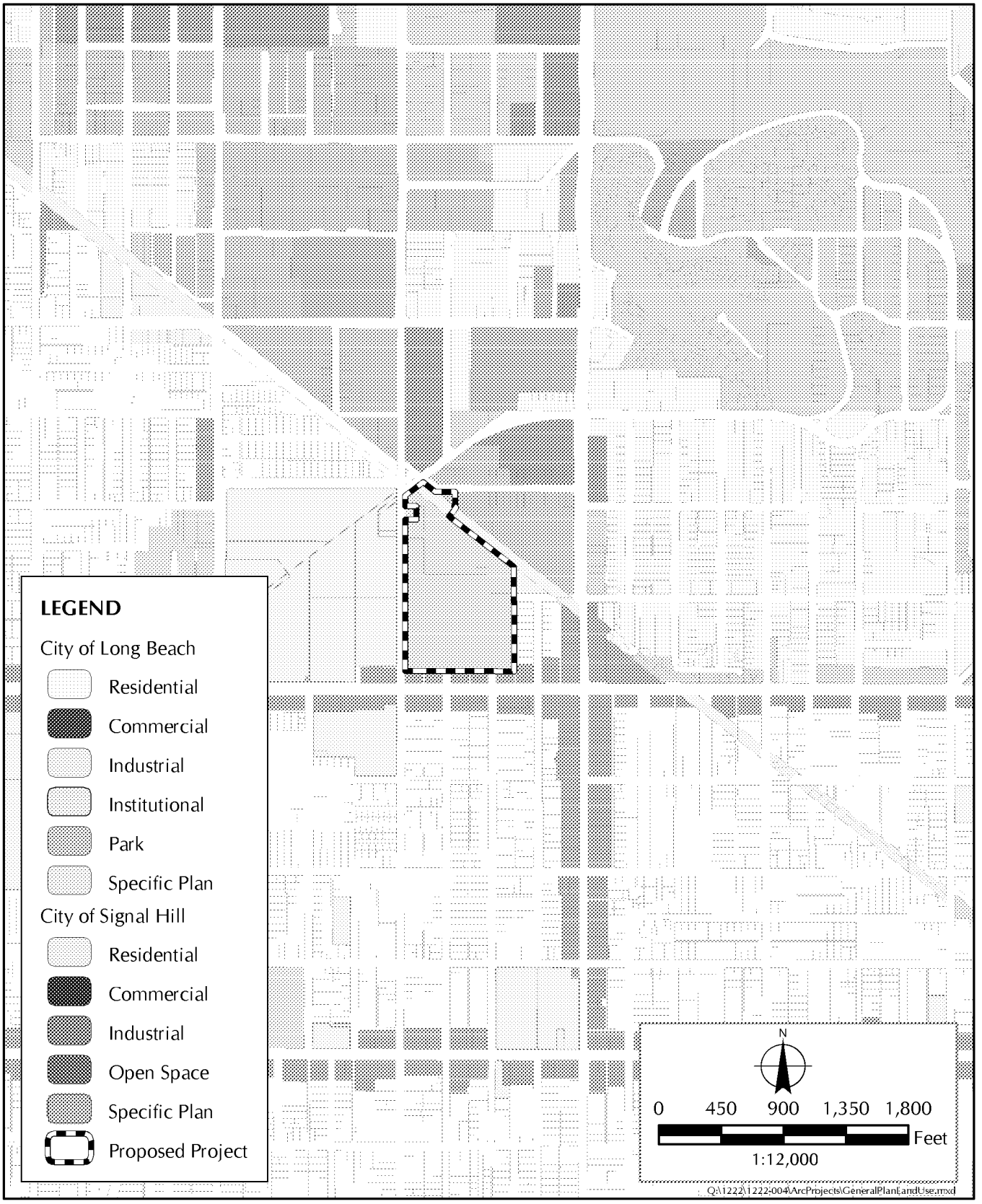

FIGURE 3.9.2-1
Existing Land Uses

3.9.4 Impact Analysis

Physical Division of an Established Community

The proposed project would not be expected to result in impacts to land use and planning through the physical division of the proposed project site or the surrounding community in the City and the adjacent City of Signal Hill. The proposed project would be located on land that is currently owned by the County of Los Angeles Department of Public Works. The Hamilton Bowl / Chittick Field site is currently owned and operated by the County of Los Angeles Department of Public Works. The project applicant has acquired a 99-year lease and would be interested in options to purchase the property. The approximately 19-acre property is bounded by the Hamilton Bowl / Chittick Field flood control area to the north, a residential area to the east, commercial development along the East Pacific Coast Highway to the south, and Long Beach City College–Pacific Coast Campus to the west. The Hamilton Bowl / Chittick Field site is currently bordered by a fence that ensures the safety of visitors to the site and to the residential units and homes adjacent to the site. The proposed project would include a fence around portions of the facility in order to maintain the security of the site. However, the proposed project is compatible with existing land uses on the proposed project site and is located in a manner that is compatible with the existing community and would not cause a physical division within an established community. Furthermore, the proposed project would be planned to encourage visitation via bike and pedestrians access, which is consistent with the Citywide plans for bike and pedestrian travel. Therefore, there are no expected impacts to land use and planning that result in a physical division to the established community.

Conflicts with Adopted Relevant Plans and Policies

Direct and Indirect Impacts

The Initial Study identified a potential significant impact to land use and planning due to the potential for the proposed project to conflict with the goals of the City General Plan concerning preservation of historic homes and buildings.

The proposed project site is located within the City; therefore, the development in the project area is subject to the policies, procedures, and standards set forth in the City General Plan.[11] The Land Use element designates the proposed project site as LUD No. 11 Open Space and Park District.[12] As previously stated, the proposed project would include a General Plan amendment to change the land use designation to LUD No. 10 – Institutional and School District, to define and better accommodate the full spectrum of services to be offered by the proposed project. The proposed project would include amending the Land Use Map of the City General Plan to LUD No. 10 – Institutional and School District, in order to accommodate the proposed use. The proposed use of the site would be consistent with the LUD No. 10 – Institutional and School District, designation following the development of the proposed project.

The zoning designation for the Hamilton Bowl / Chittick Field site is P. The lower elevation portions of the site would continue to function as flood detention and open space, which would be consistent with the existing zoning class specifications. However, the proposed project facilities would sit on

[11] City of Long Beach, Department of Planning and Building. July 1991. *City of Long Beach General Plan, Land Use Element.* Long Beach, CA.

[12] City of Long Beach, Department of Planning and Building. July 1991. *City of Long Beach General Plan, Land Use Element.* Long Beach, CA.

raised building pads, which would be re-zoned as Institutional (I).[13] The proposed project would be consistent with the zoning designation I.

The proposed project site contains a structure, the Low-flow Pump Station, which is eligible for designation as a historic resource through the California Register of Historical Resources. The proposed project would include the demolition of this structure, which would conflict with the goals and policies of the City General Plan.

The proposed project would result in significant impacts to land use and planning related to a substantial adverse change in the significance of a potential historic resource. The Land Use element of the City General Plan includes the goal of managed growth. One component of this goal is that the City should support efforts aimed at supporting the City's significant historic and cultural places and buildings.[14] The Conservation element of the City General Plan includes the goal of identifying and preserving sites of outstanding scenic, historic, and cultural significance and recreational potential.[15] The Housing element of the City General Plan includes the goal of retaining and improving the quality of existing housing and improving the quality of life in neighborhoods. One policy of this goal is to continue to preserve and maintain the City's historical and architecturally significant buildings and neighborhoods by establishing and maintaining historical landmarks and districts. The City Strategic Plan 2010[16] includes the goal of supporting neighborhood efforts to create beauty and pride. One aspect of this goal is to promote historic preservation and neighborhood appreciation. As such, demolition of the Low-flow Pump Station would result in a significant impact as it relates to land use and planning. The impact associated with this conflict is further discussed in Section 3.4, *Cultural Resources*, of this EIR. Mitigation measure Cultural-2 would reduce significant direct and cumulative impacts to historical resources scheduled for demolition to the maximum extent feasible. However, the demolition of this historical resource would still remain a significant adverse impact.

Conflict with Any Applicable Habitat Conservation Plan or Natural Community Conservation Plan

The proposed project would not be expected to result in impacts to land use and planning in relation to conflicting with any applicable habitat conservation plan or natural community conservation plan. The proposed project area would not be located in an area proposed or adopted as part of a habitat conservation plan.[17] The proposed project area is not located in an area proposed or adopted as part of a natural community conservation plan.[18] Therefore, there are no expected impacts to existing land use and planning related to a conflict with any adopted habitat conservation plan or natural community conservation plan.

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[13] City of Long Beach. 1988. Ordinances [Ord. C-7663 § 8, 1999: Ord. C-7047 § 7, 1992: Ord. C-6933 §§ 23, 24, 1991; Ord. C-6684 § 42 (part), 1990: Ord. C-6533 § 1 (part)]. Available at: http://municipalcodes.lexisnexis.com/codes/longbeach/_DATA/TITLE21/Chapter_21_32_COMMERCIAL_DISTR.html

[14] City of Long Beach, Department of Planning and Building. July 1991. *City of Long Beach General Plan, Land Use Element.* Long Beach, CA.

[15] City of Long Beach, Department of Planning and Building. July 1991. *City of Long Beach General Plan, Conservation Element.* Long Beach, CA.

[16] City of Long Beach. 20 June 2000. *Long Beach Strategic Plan 2010.* Long Beach, CA. Available at: http://www.longbeach.gov/civica/filebank/blobdload.asp?BlobID=3191

[17] City of Long Beach, Department of Planning and Building. 1973. *City of Long Beach General Plan, Conservation Element.* Long Beach, CA.

[18] California Department of Fish and Game. Accessed 28 June 2007. Web site. "Natural Community Conservation Planning." Sacramento, CA. Available at: http://www.dfg.ca.gov/nccp/

Cumulative Impacts

The incremental impact of the proposed project, when evaluated in relation to the related past, present, or reasonably foreseeable, probable future projects listed in Table 2.8-1 would not be expected to cause significant impacts to land use. Implementation of the proposed project would not be expected to cause incremental impacts to land use and planning when considering related past, present, or foreseeable future projects. No mitigation measures are required to reduce cumulative impacts.

3.9.5 Mitigation Measure

The proposed project's demolition of historical resources is expected to conflict with an adopted relevant plan and policy in the proposed project area. Mitigation measures have been outlined in Section 3.4, *Cultural Resources*, to mitigate the impacts of the proposed demolition of the Low-flow Pump Station.

Measure Cultural-2

Impacts related to the loss of an historical resource, the Low-flow Pump Station, shall be reduced through archival documentation of as-found conditions. Prior to issuance of demolition permits, the applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that documentation of the Low-flow Pump Station is completed by the applicant in the form of a Historic American Buildings Survey that shall comply with the *Secretary of the Interior's Standards for Architectural and Engineering Documentation*. The documentation shall include large-format photographic recordation; a detailed historic narrative report including description, history, and statement of significance; measured architectural drawings (as built and/or current conditions); and a compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards for History and/or Architectural History. The original archival-quality documentation shall be offered as donated material to the National Park Service Heritage Documentation Program, Historic American Buildings Survey, for inclusion in the Library of Congress. Archival copies of the documentation also would be submitted to the Long Beach Public Library; the Historical Society of Long Beach; California State University, Long Beach; the Office of Historic Preservation; and the South Central Coastal Information Center where it would be available to local researchers.

Completion of this mitigation measure shall be monitored and enforced by the City of Long Beach Department of Development Services.

3.9.6 Level of Significance after Mitigation

Implementation of mitigation measure Cultural-2 would be expected to reduce anticipated significant impacts to land use and planning resulting from construction of the project to the maximum extent feasible; however, demolition of the historical resource remains a significant impact to land use and planning due to its conflict with the City General Plan.

3.10 NOISE

As a result of the Initial Study (Appendix A), the City of Long Beach (City) determined that implementation of the proposed Kroc Community Center (proposed project) would have the potential to result in impacts to noise. Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report. This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts from noise and to identify potential alternatives.

The analysis of noise consists of a summary of the regulatory framework that guides the decision-making process, a description of the existing conditions in the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation.

The potential for impacts from noise has been analyzed in accordance with Appendix G of the State California Environmental Quality Act Guidelines (State CEQA Guidelines),[1] and the methodologies and thresholds of significant provided by the City General Plan Noise element;[2] the City Noise Ordinance;[3] and the site-specific acoustics, noise, and vibration technical analysis (Appendix E, *Noise and Vibration Impact Report*) that was prepared for the proposed project.

3.10.1 Regulatory Framework

Noise Definition

Noise is defined as unwanted sound. The human response to environmental noise is subjective and varies considerably from individual to individual. Sensitive receptors, such as residential areas, convalescent homes, schools, auditoriums, and other similar land uses, may be affected to a greater degree by increased noise levels than industrial, manufacturing, or commercial facilities. The effects of noise can range from interference with sleep, concentration, and communication, to the causation of physiological and psychological stress, and, at the highest intensity levels, hearing loss.

The method commonly used to quantify environmental noise involves evaluation of all frequencies of sound, with an adjustment to reflect the constraints of human hearing. Since the human ear is less sensitive to low and high frequencies than to midrange frequencies, noise measurements are weighted more heavily within those frequencies of maximum human sensitivity in a process called A-weighting. A measured noise level is called the A-weighted sound level measured in A-weighted decibels (dBA). In practice, environmental noise is measured using a sound level meter that includes an electronic filter corresponding to the A-weighted frequency spectrum (Table 3.10.1-1, *A-weighted Sound Levels*).

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[1] *California Code of Regulations*. Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[2] City of Long Beach, Department of Planning and Building. Updated 25 March 1975. *City of Long Beach General Plan, Noise Element*. Long Beach, CA.

[3] City of Long Beach. *The Long Beach Municipal Code, Noise*. Section 8.80.010-8.80-410. Available at: http://www.longbeach.gov/cityclerk/lbmc/title-08/frame.htm

TABLE 3.10.1-1
A-WEIGHTED SOUND LEVELS

Common Noise Source	A-weighted Sound Level (in dBA)	Subjective Loudness	Effect of Noise
Near jet engine	130	Intolerable or deafening	Hearing loss
Loud auto horn	100	Very noisy	Hearing loss
Normal conversation at 5–10 feet	60	Loud	Speech interference
Bird calls	40	Moderate	Sleep disturbance
Whisper	30	Faint	No effect
Rustling leaves	10	Very faint	No effect

NOTE: dBA = decibels in A-weighted sound levels

There are several statistical tools used to evaluate and compare noise level measurements. To account for the fluctuation in noise levels over time, noise impacts are commonly evaluated using time-averaged noise levels. Equivalent levels (L_{eq}) are used to represent the noise level experienced over a stated period of time averaged as a single noise level. Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, an artificial decibel increment is added to quiet time noise levels to create a 24-hour noise descriptor, or a 24-hour L_{eq}, called the community noise equivalent level (CNEL). This equivalent level is also known as the day-night level (L_{dn}).

Another measure used to characterize noise exposure is the variation in sound levels over time, measured by the percentage exceedance level. L_{10} is the A-weighted sound level that is exceeded for 10 percent of the measurement period, and L_{90} is the level that is exceeded for 90 percent of the measurement period. L_{50} is the median sound level. Additional statistical measures include L_{min} and L_{max}, the minimum and maximum sound levels, respectively, measured during a stated measurement period.

These descriptions of noise are based on the sound level at the point of measurement. When determining potential impacts to the environment, the noise level at the receptor is considered. Noise is attenuated as it propagates from the source to the receiver. Attenuation is the reduction in the level of sound resulting from the absorption by the topography (i.e., paved or vegetated surface), the atmosphere, distance, barriers, and other factors. Attenuation is also logarithmic, rather than linear, so that for stationary sources like the proposed project, noise levels decrease approximately 6 dBA for every doubling of distance, and for streets, noise levels decrease by 3 to 5 dBA for every doubling of distance.

To estimate a receiver's subjective reaction to a new noise is to compare the new noise with the existing noise environment, the ambient noise level, to which the receiver has become adapted. An increase of 1 dBA over the ambient noise level cannot be perceived unless in carefully controlled laboratory experiments; a 3-dBA increase is considered as a just-perceivable difference; an increased of at least 5 dBA is a noticeable change, thereby causing community response and often being considered as a significant impact; and a 10-dBA increase is subjectively heard as approximately a doubling in loudness, thereby almost always causing an adverse community response.

The assessment of the noise impact depends on the environment, the nature and level of noise-generating activities, the pathway through which the noise travels, the sensitivity of the receptor, the period of exposure, and the exceedance of the noise level over the ambient level.

Ground-borne Vibration Definition

Vibration is an oscillatory motion in terms of displacement, velocity, or acceleration. The effects of ground-borne vibration include fellable movements of the building floors, rattling of window, and shaking of items on shelves or hangings on the walls. In extreme cases, vibration can cause damage to buildings. The noise radiated from the motion of the room surfaces is called ground-borne noise. Typical levels of ground-borne vibration are listed in Table 3.10.1-2, *Typical Levels of Ground-borne Vibration*. The vibration motion normally does not provoke the same adverse human reactions as the noise unless there is an effect associated with the shaking of the building. In addition, the vibration noise can only occur inside buildings. Similar to the propagation of noise, vibration propagated from the source to the receptor depends on the receiving building (i.e., the weight of the building), soil conditions, layering of the soils, the depth of groundwater table, etc.

TABLE 3.10.1-2
TYPICAL LEVELS OF GROUND-BORNE VIBRATION

Response	Velocity Level (10^6 inches/second)	50 Feet from Typical Source
Minor cosmetic damage of fragile buildings	100	Blasting from construction projects
Difficulty with tasks	90	Bulldozer and other heavy tracked construction equipment
Residential annoyance infrequent events	80	Rapid transit upper range
Human response begins – Residential annoyance is a frequent event	70	Rapid transit typical range
Sensitive equipment criteria threshold of perception	60	Bus or truck typical range
No impact	50	Typical background vibration level

SOURCE: Harris, Miller, Miller & Hanson, Inc. 16 January 2008 *Chapter 7: Basic Ground-Borne Vibration Concepts*. Available at: http://www.hmmh.com/cmsdocuments/FTA_Ch_07.pdf

State

In the State of California, Senate Bill 860 (the Noise Element Guidelines), which became effective January 1, 1976, directed the California Office of Noise Control within the State Department of Health Services to prepare Guidelines for the Preparation and Content of Noise Elements of the General Plan.[4] These guidelines provide information concerning the noise environment in the community that should be considered in the land use planning process. As part of this publication, Land Use Compatibility Standards were developed in four categories.

[4] California Department of Health Services, Office of Noise Control. February 1976. *Guidelines for the Preparation and Content of Noise Elements of the General Plan*. Sacramento, CA.

These categories include normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable. These categories were based on earlier work completed by the Department of Housing and Urban Development. The interpretation of the four categories is as follows:

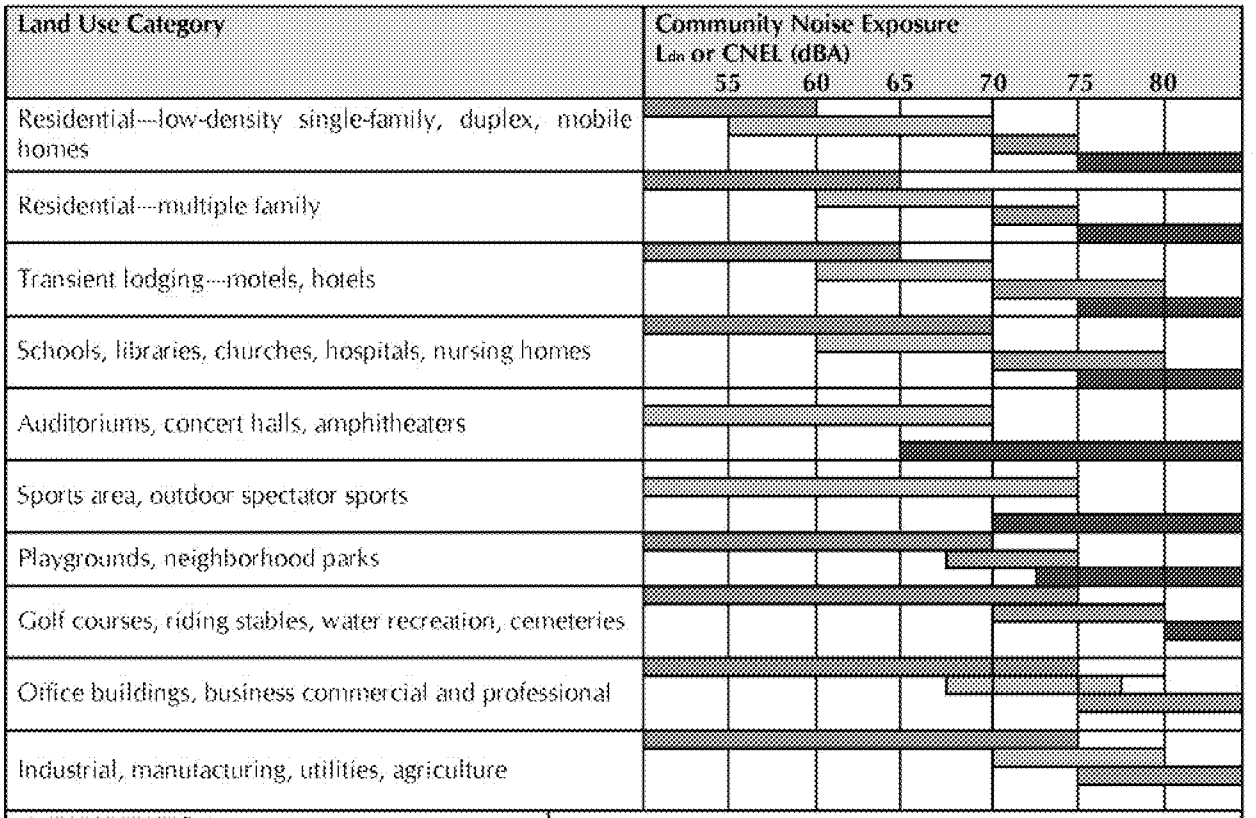
Normally Acceptable:	Specified land use is satisfactory without special insulation.
Conditionally Acceptable:	New development requires detailed analysis of noise insulation requirements.
Normally Unacceptable:	New development is discouraged and requires a detailed analysis of insulation features.
Clearly Unacceptable:	New development should not be undertaken.

The Land Use Compatibility Matrix for Community Noise Environments, as established by the state, defines four categories of acceptance and assigns CNEL values to them.

The State Uniform Building Code (Title 24, Part 2, California Code of Regulations) establishes uniform minimum noise insulation performance standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment houses, and residential units, other than detached single-family residences, from the effects of excessive noise, including, but not limited to, hearing loss or impairment and interference with verbal communication and sleep. Residential structures to be located where the CNEL or L_{dn} (day night level) is 60 dBA or greater are required to provide sound insulation to limit the interior CNEL to a maximum of 45 dBA. An acoustical analysis report, prepared by a person experienced in the field of acoustical engineering, is required for the issuance of a building permit for these structures. Conversely, land use changes that result in increased noise levels at residences of 60 dBA or greater must be considered in the evaluation of impacts on ambient noise levels. Table 3.10.1-3, *Land Use Compatibility for Community Noise Environments*,[5] depicts noise levels for a variety of uses.

[5] California Department of Health Services, Office of Noise Control. February 1976. *Guidelines for the Preparation and Content of Noise Element of the General Plan*. Sacramento, CA.

TABLE 3.10.1-3
LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS



NOTES:
L_{dn} = Day-Night Level
CNEL = Community Noise Equivalent Level
dBA = decibels in A-weighted sound levels

SOURCE:
California Department of Health Services, Office of Noise Control. February 1976. *Guidelines for the Preparation and Content of Noise Elements of the General Plan*. Sacramento, CA.

Local

City of Long Beach General Plan, Noise Element

The proposed project site is located within the City; therefore, development in the area is governed by the policies, procedures, and standards set forth in the City General Plan. The Land Use District map in the City General Plan describes land use categories and characteristics within the City and provides a policy framework for Citywide development.[6] The proposed project would include the development of a recreational facility. The proposed project would be expected to be consistent with the City General Plan land use designations for the area and would not be expected to result in a change to the population growth assumptions used by South Coast Air Quality Management District for attainment planning.[7] The City has developed goals, policies, and programs containing goals, practices, and recommendations aimed at reducing or eliminating noise. The recommendations that are relevant to the proposed project and that could contribute toward preventing and mitigating noise including the following:

- **Recommendation 6.17.** Require that new buildings near the airport be made more adequately soundproofed by the use of noise absorbent materials, special construction techniques such as double windows, and air conditioning.

- **Recommendation 6.21.** Encourage residents to use alternative modes of transportation, such as bicycling and mass transit, which will reduce traffic generated noise throughout the City.

- **Recommendation 7.7.** Require adequate exhaust and intake mufflers and soundproofed enclosures to restrict the noise level output and the duration of noise exposures generated by heavy construction equipment.

- **Recommendation 7.9.** Require the erection of temporary sound barriers to reduce the level of noise exposure generated by small construction projects.

- **Recommendation 7.14.** Encourage the demolition of structures and the excavation and channelization of projects by use of implosive techniques rather than by conventional heavy equipment.

- **Recommendation 9.3.** Require the stationary noise generating equipment to be enclosed with sound-absorbing materials.

- **Recommendation 9.12.** Identify physical soundproofing alterations to structures in order to reduce noise levels in problem areas.

- **Recommendation 11.8.** Recreational facilities and programs continue to afford a wider opportunity to all citizens for a pleasurable escape from noisy environments.

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[6] City of Long Beach, Department of Development Services. 27 December 2007. *Land Use District Map*. Available at: http://www.longbeach.gov/plan/pb/apd/general_plan/lud_map.asp

[7] City of Long Beach, Department of Planning and Building. July 1991. *City of Long Beach General Plan, Land Use Element*. Long Beach, CA.

City of Long Beach Municipal Code

Operational Noise

Section 8.80.130 of Chapter 8 of the City Municipal Code (LBMC) recognizes that noise is a major source of environmental pollution that represents a threat to the serenity, the peace and quiet of any neighborhoods, and quality of life in the City.[8] Excess noise often has an adverse physiological and psychological effect on human beings, thus contributing an economic and social loss to the community. The LBMC prohibits any loud, unnecessary, or unusual noise and vibration generated from or by any sources in such a manner that sounds disturb the peace and quiet of any neighborhood or which causes any discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.[9]

The LBMC[10] establishes exterior noise levels for designated land use districts (Table 3.10.1-4, *Exterior Noise Limits*).

TABLE 3.10.1-4
EXTERIOR NOISE LIMITS

Receiving Land Use District	Time Period	Noise Level (dBA)
District One: Predominantly residential with other land use types also present	Night (10:00 p.m.–7:00 a.m.)	45
	Day (7:00 a.m.–10 p.m.)	50
District Two: Predominantly commercial with other land use types also present	Night (10:00 p.m.–7:00 a.m.)	55
	Day (7:00 a.m.–10 p.m.)	60
District Three: Predominantly industrial with other land use types also present	Any time	65
District Four: Predominantly industrial with other land use types also present	Any time	70
District Five: Airport, freeways, and waterways regulated by other agencies	Regulated by other agencies and laws	

NOTES: Districts Three and Four are intended primarily for use at their boundaries rather than for noise control within those districts
SOURCE: City of Los Angeles, 1977. *Exterior Noise Limits – Sound Levels by Receiving Land Use*. Municipal Code, Title 8 Health and Safety, Chapter 8.80 Noise, Section 8.80.150.

The City Noise Ordinance (Ordinance)[11] includes the following standards governing exterior noise levels:

- No person shall operate or cause to be operated any source of sound at any location within the incorporated limits of the City or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such

[8] City of Long Beach. *The Long Beach Municipal Code, Noise*. Section 8.80.130, "Disturbing Noises Prohibited." Available at: http://www.longbeach.gov/cityclerk/lbmc/title-08/frame.htm

[9] City of Long Beach. *The Long Beach Municipal Code, Noise*. Section 8.80.130, "Disturbing Noises Prohibited." Available at: http://www.longbeach.gov/cityclerk/lbmc/title-08/frame.htm

[10] City of Long Beach. 1977. *Noise Control Ordinance of the City of Long Beach*. Municipal Code, Title 8 Health and Safety, Chapter 8.80 Noise. Available at: http://municipalcodes.lexisnexis.com/codes/longbeach/

[11] City of Long Beach. 1977. *Noise Control Ordinance of the City of Long Beach*. Municipal Code, Title 8 Health and Safety, Chapter 8.80 Noise. Available at: http://municipalcodes.lexisnexis.com/codes/longbeach/

person, which causes the noise level when measured from any other property, either incorporated or unincorporated, to exceed:

1. The noise standard for that land use district as specified in Table A in Section 8.80.160 for a cumulative period of more than 30 minutes in any hour (as shown in Table 3.10.1-4); or

2. The noise standard plus 5 decibels for a cumulative period of more than 15 minutes in any hour; or

3. The noise standard plus 10 decibels for a cumulative period of more than 5 minutes in any hour; or

4. The noise standard plus 15 decibels for a cumulative period of more than 1 minute in any hour; or

5. The noise standard plus 20 decibels or the maximum measured ambient, for any period of time.

- If the measured ambient level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibels increments in each category as appropriate to encompass or reflect the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

Based on the City Land Use District Index Map[12] and the City Noise District Map,[13] the proposed project area is determined to be located within the City Noise Receiving Land Use District One, which prohibits exterior noise from exceeding a decibel level of 45 dBA between the hours of 10:00 p.m. and 7:00 a.m. and a decibel level of 50 dBA between the hours of 7:00 a.m. and 10:00 p.m.[14]

Construction Noise

The Ordinance also restricts the hours and days of operation for noise generating construction activities. The restrictions are as follows:

- Weekdays and federal holidays. No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition or any other related building activity which produce loud or unusual noise which annoys or disturbs a reasonable person of normal sensitivity between the hours of 7:00 p.m. and 7:00 a.m. the following day on weekdays,

[12] City of Long Beach, Department of Development Services. 5 March 2007. *Land Use District Map*. Available at: http://www.longbeach.gov/plan/pb/apd/general_plan/lud_map.asp

[13] City of Long Beach. *The Long Beach Municipal Code, Noise*. Section 8.80.160, "Exterior Noise Limits – Correction for Character of Sound." Available at: http://www.longbeach.gov/cityclerk/lbmc/title-08/frame.htm

[14] City of Long Beach. *The Long Beach Municipal Code, Noise*. Section 8.80.160, "Exterior Noise Limits-Correction for Character of Sound." Available at: http://www.longbeach.gov/cityclerk/lbmc/title-08/frame.htm

except for emergency work authorized by the building official. For purposes of this section, a federal holiday shall be considered a weekday.

- Saturdays. No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition or any other related building activity, which produce loud or unusual noise that annoys or disturbs a reasonable person of normal sensitivity between the hours of 7:00 p.m. on Friday and 9:00 a.m. on Saturday and after 6:00 p.m. on Saturday, except for emergency work authorized by the building official.

- Sundays. No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition or any other related building activity at any time on Sunday, except for emergency work authorized by the building official or except for work authorized by permit issued by the noise control officer.

- Sunday work permits. Any person who wants to do construction work on a Sunday must apply for a work permit from the noise control officer. The noise control officer may issue a Sunday work permit if there is good cause shown; and in issuing such a permit, consideration will be given to the nature of the work and its proximity to residential areas. The permit may allow work on Sundays, only between 9:00 a.m. and 6:00 p.m., and it shall designate the specific dates when it is allowed.

Vibration

The Ordinance considers, "operating or permitting the operation of any device that creates vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at one hundred fifty feet (forty-six meters) from the source if on a public space or public right-of-way" to be in violation of the Ordinance.[15] The Ordinance defines *vibration perception threshold* to be "...the minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such directed means as, but not limited to, sensation by touch or visual observation of moving objects." Section 8.80.020 in the Ordinance describes the magnitude of vibration as acceleration, using *g* as a unit of gravity (where one g is equal to 32.2 feet per second^2 or is equal to 9.31 meter per second^2).[16] For this analysis, the perception threshold shall be presumed to be 0.001 g in the frequency range of 0–30 Hertz and 0.003 g in the frequency range between 30 and 100 hertz.[17]

[15] City of Long Beach. 1977. *Noise Control Ordinance of the City of Long Beach*. Municipal Code, Title 8 Health and Safety, Chapter 8.80 Noise. Available at: http://municipalcodes.lexisnexis.com/codes/longbeach/

[16] City of Long Beach. 1977. *Noise Control Ordinance of the City of Long Beach*. Municipal Code, Title 8 Health and Safety, Chapter 8.80 Noise. Available at: http://municipalcodes.lexisnexis.com/codes/longbeach/

[17] City of Long Beach. 1977. *Noise Control Ordinance of the City of Long Beach*. Municipal Code, Title 8 Health and Safety, Chapter 8.80 Noise. Available at: http://municipalcodes.lexisnexis.com/codes/longbeach/

3.10.2 Existing Conditions

Exposure of Persons to or Generation of Noise

The existing noise environment in the vicinity of the proposed project site is characterized by vehicular traffic and noises typical to a dense urban area. Vehicular traffic is the primary source of noise in the vicinity of the proposed project. To analyze the significance of noise and vibration levels associated with the proposed project's construction and operation, the existing noise levels (the ambient noise level at the proposed project site) were obtained. Terry A. Hayes Associates LLA measured the noise level at various locations in the vicinity of the proposed project between 8:00 a.m. and 10:30 a.m. on October 30, 2008 (Figure 3.10.2-1, *Noise Monitoring Locations*). These measurements were used to establish existing ambient noise conditions. The existing ambient sound levels range between 51.1 and 71.3 dBA L_{eq} (Table 3.10.2-1, *Noise Monitoring Locations*).

TABLE 3.10.2-1
NOISE MONITORING LOCATIONS

Noise Monitoring Location	Distance from Project Site (Feet)	Sound Level (dBA, L_{eq})
Single-family residences adjacent and east of the proposed project site	Adjacent	51.1
Long Beach City College–Pacific Coast Campus	65	65.5
Single- and Multi-family residences south of the proposed project site	175	71.3
Single-family residences adjacent and west of the proposed project site	Adjacent	69.2 /a/
John G. Whittier Elementary School	310	67.1
Alvarado (Juan Bautista) Elementary School	520	55.4
Mary Butler Elementary School	530	67.8

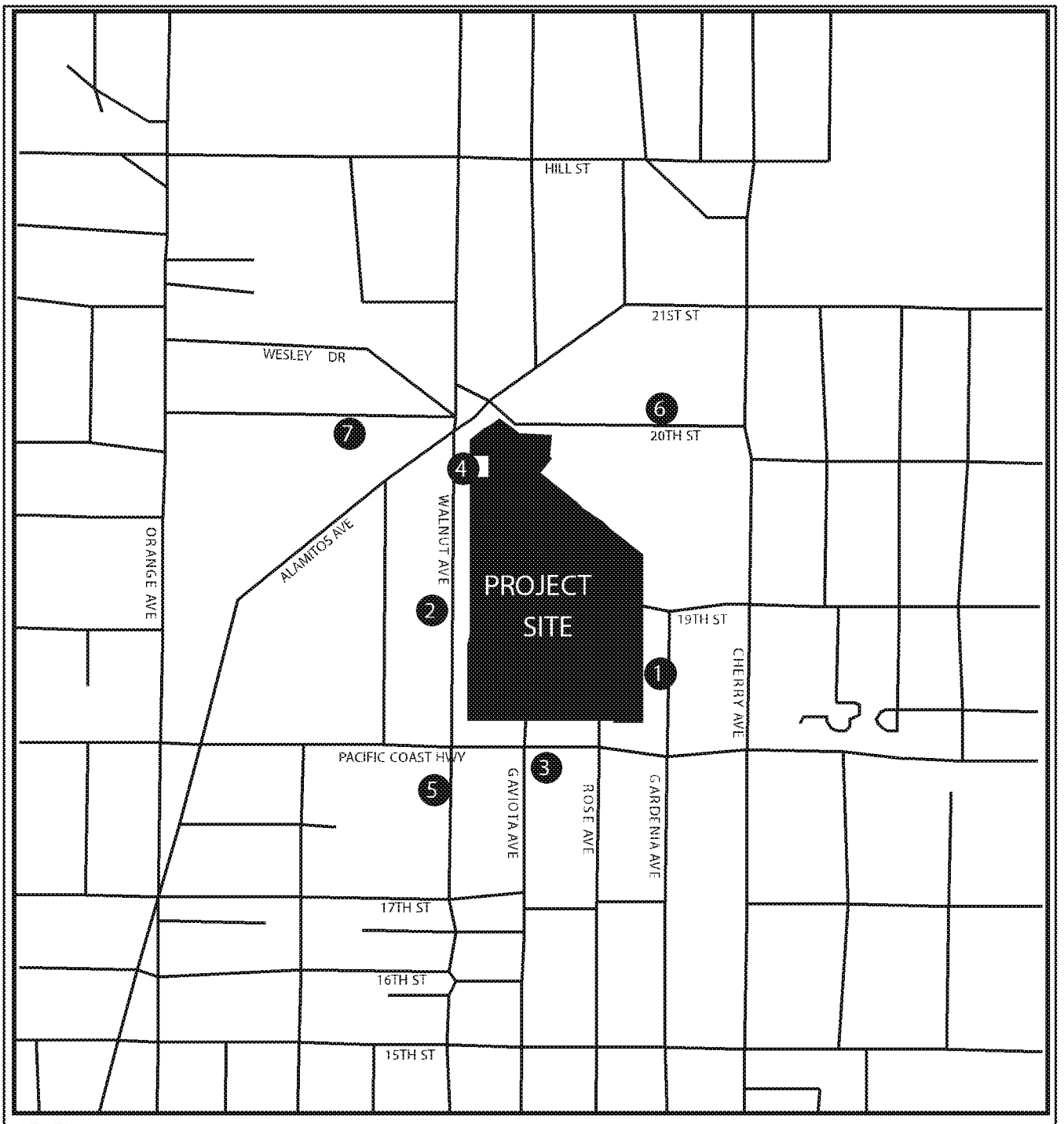
KEY: /a/ Construction activity was occurring adjacent to this location during the noise monitoring period and this measurement is not utilized in the analysis.
SOURCE: Terry A. Hayes Associates LLC. November 2008. *Kroc Community Center Project Noise and Vibration Impact Report.* Culver City, CA.

Ground-borne Vibration and Ground-borne Noise Levels

The vibration environment is dominated by traffic from nearby roadways. Large trucks can generate ground-borne vibrations that vary depending on vehicle type, weight, and pavement conditions. Field observations made by Terry A. Hayes Associates LLC indicated that large truck travel is not unusually intense along East Pacific Coast Highway and Walnut Avenue and that vibration levels from adjacent roadways are not perceptible at the proposed project site.

Airports and Airport Land Use Plans

The proposed project is not located within an airport land use plan. However, the proposed project site is located in the vicinity of a public airport. The nearest public airport is the Long Beach Municipal Airport, which is located approximately 1.3 miles northeast of the proposed project site (Figure 3.6.2-1). With such a close proximity to a public airport, the proposed project site does



LEGEND

Noise Monitoring Locations

1. Single-Family Residences
2. Long Beach Community College
3. Single- and Multi-Family Residences
4. Single-Family Residence
5. John G. Whittier Elementary School
6. Alvarado (Juan Bautista) Elementary School
7. Mary Butler Elementary School

SOURCE: TAHA, 2008

FIGURE 3.10.2-1
Noise Monitoring Locations

experience noise related to air traffic. Characteristics of the Long Beach Municipal Airport[18] include:

- A multi-million dollar system called the Airport Noise and Operations Monitoring System is in place to monitor aircraft noise and to help enforce the Airport Noise Compatibility Ordinance.
- There are 18 noise monitors located throughout the City.
- The airport has a budget of nearly half a million dollars a year devoted to maintaining monitoring and reporting aircraft noise.
- 41 commercial flights per day is the minimum allowed under the Noise Ordinance.
- The 41 flights may only be exceeded if the City determines that the additional flights will not exceed the airlines portion of the CNEL budget limits based on the baseline year of 1989–90.
- The Long Beach Airport is open 24 hours, but within those 24 hours, there are different single event noise exposure level (SENEL) limits.
- All airline operations must be scheduled between 7:00 a.m. to 10:00 p.m. Operations between 10:00 p.m. to 11:00 p.m. are allowed if the delays were caused by weather, air traffic, or mechanical issues.
- The 7:00 a.m. to 10:00 p.m. SENEL limit on our main runway (30/12) is 101.5 SENEL dBA on arrival and 102.5 SENEL dBA on departures.
- The 6:00 a.m. to 7:00 a.m. and 10:00 p.m. to 11:00 p.m. limit is a more restrictive 90.0 SENEL dBA.
- The 11:00 p.m. to 6:00 a.m. limits are the most restrictive at 79.0 SENEL dBA.
- The Noise Ordinance states that commercial airlines must be scheduled to arrive or depart between the hours of 7:00 a.m. to 10:00 p.m., but the Noise Ordinance also states that violations occurring between the hours of 10:00 p.m. and 11:00 p.m., which are the results of unanticipated delays beyond the reasonable control of the aircraft owner/operator shall be waived upon the presentation of evidence satisfactory to the City that the delayed arrival or departure resulted from such circumstances.
- If the airlines operate after 11:00 p.m., they receive a monetary fine.

Private Airstrips

There are no private airstrips in the vicinity of the proposed project.

Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise- and vibration-sensitive and may warrant unique measures for protection from intruding noise.

[18] City of Long Beach, Department of Public Works. 14 January 2008. *Airport Noise Abatement.* Available at: http://www.longbeach.gov/airport/noiseabatement/faqs.asp

Noise sensitive receptors near the project site include the following (Figure 3.2.2-3 and Figure 3.10.2-1):

- Single- and multi-family residences located adjacent and east of the proposed project site
- Single-family residence located adjacent and west of the proposed project site
- Multi-family residences located adjacent and south of the proposed project site
- Long Beach City College–Pacific Coast Campus located approximately 65 feet west of the proposed project site
- Single-family residences located approximately 175 feet south of the proposed project site
- Single-family residences located approximately 200 feet northwest of the proposed project site
- John G. Whittier Elementary School located approximately 310 feet south of the proposed project site
- John G. Whittier Preschool located approximately 749 feet southwest of the proposed project site
- Alvarado Elementary School located approximately 520 feet northeast of the proposed project site
- Mary Butler Elementary School located approximately 530 feet west of the proposed project site
- Courtyard Care Center located approximately 1,210 feet east of the proposed project site

The above receptors represent the nearest residential and school land uses with the potential to be impacted by the proposed project. Additional single- and multi-family residences are located in the surrounding community, within 0.25 mile of the proposed project site.

Vehicular Traffic

Vehicular traffic is the predominant noise source in the proposed project vicinity. Using existing traffic volumes provided by the Linscott, Law & Greenspan, Engineers and the Federal Highway Administration (FHWA) RD-77-108 noise calculation formulas, the CNEL was calculated for various roadway segments near the project site. Mobile noise levels in the project area range from 58.5 to 71.8 dBA CNEL. Modeled vehicle noise levels are typically lower than the noise measurements along similar roadway segments as modeled noise levels do not take into account additional noise sources (e.g., sirens and reflected noise).

3.10.3 Significance Thresholds

The potential for the proposed project to result in impacts related to noise was analyzed in relation to the questions contained in Appendix G of the State CEQA Guidelines.

The proposed project would normally be considered to have a significant impact from noise when the potential for any one of the following six thresholds occurs:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Exposure of persons to or generation of excessive groundborne vibration.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public or public use airport, exposure of persons residing or working in the project area to excessive noise levels.
- For a project within the vicinity of a private airstrip, exposure of persons residing or working in the project area to excessive noise levels.

The potential for construction and operation of the proposed project to result in significant impacts on ambient noise levels was assessed in relation to the CNEL. The proposed project would cause a significant impact if it causes the ambient noise level measured at the property line of the affected uses to increase by 5 dBA or greater, and/or if it causes the ambient noise level measured at the property line of the affected uses to increase by 3-dBA CNEL to or within the normally unacceptable or clearly unacceptable categories, as show in Table 3.10.1-3.

3.10.4 Impact Analysis

Typically, major noise concerns include project demolition and construction noises and project operation noises like noises generated from building operation, building activities, and additional traffic. The proposed project's demolition and construction noise levels depend on the mix of construction equipment scheduled for use during each construction phase. The LBMC limits construction to between the hours of 7:00 a.m. and 7:00 p.m. on weekdays/holidays. On Saturdays, work would commence at 9:00 a.m. and cease no later than 6:00 p.m. Construction work could not be conducted outside of these hours, or at any time on Sundays or holidays.

Construction Noise

Construction of the proposed project would result in temporary increases in ambient noise levels in the proposed project area on an intermittent basis. The increase in noise would occur during the 29-month construction schedule. Noise levels would fluctuate depending on the construction

phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers.

Construction activities typically require the use of numerous noise generating-equipment, such as jackhammers, pneumatic impact equipment, saws, and tractors. Typical noise levels from various types of equipment that may be used during construction are listed in Table 3.10.4-1, *Maximum Noise Levels of Common Construction Machines*. The table shows noise levels at distances of 50 and 100 feet from the construction noise source. Whereas Table 3.11.4-1 shows the noise level of individual equipment, the noise levels shown in Table 3.10.4-2, *Outdoor Construction Noise Levels* take into account the likelihood that more than one piece of construction equipment would be in operation at the same time and lists the typical overall noise levels that would be expected for each phase of construction. These noise levels are based on surveys conducted by the U.S. Environmental Protection Agency (EPA) in the early 1970s. Since 1970, regulations have been enforced to improve noise generated by certain types of construction equipment to meet worker noise exposure standards. However, many older pieces of equipment are still in use. Thus, the construction phase noise levels indicated in Table 3.10.4-1 represent worst-case conditions. As the table shows, the highest noise levels are expected to occur during the grading/excavation and finishing phases of construction. A typical piece of equipment is assumed to be active for 40 percent of the 8-hour workday (consistent with the U.S. EPA studies of construction noise), generating a noise level of 89 dBA at a reference distance of 50 feet.

TABLE 3.10.4-1
MAXIMUM NOISE LEVELS OF COMMON CONSTRUCTION MACHINES

Noise Source	Noise Level (dBA) /a/	
	50 feet	100 feet
Jackhammer	82	76
Steamroller	83	77
Street paver	80	74
Backhoe	83	77
Street compressor	67	61
Front-end loader	79	73
Street cleaner	70	64
Idling haul truck	72	66
Cement mixer	72	66

NOTE: /a/ Assumes a 6-dBA drop-off rate for noise generated by a point source and traveling over hard surfaces. Actual measured noise levels of the equipment listed in this table were taken at distances of 10 and 30 feet from the noise source.
SOURCES: City of Los Angeles. 2006. *LA CEQA Thresholds Guide*. Los Angeles, CA.; Terry A. Hayes Associates, LLC. November 2008. *Noise and Vibration Impact Report*. Culver City, CA.

TABLE 3.10.4-2
OUTDOOR CONSTRUCTION NOISE LEVELS

Construction Phase	Noise Level at 50 Feet (dBA)
Ground clearing	84
Grading/Excavation	89
Foundations	78
Structural	85
Finishing	89

SOURCES: City of Los Angeles. 2006. *LA CEQA Thresholds Guide*. Los Angeles, CA.

The noise level during the construction period at each receptor location was calculated by: (1) making a distance adjustment to the construction source sound level and (2) logarithmically adding the adjusted construction noise source level to the ambient noise level. The estimated construction noise levels at sensitive receptors are shown in Table 3.10.4-3, *Construction Noise Levels at Sensitive Receptors*. Construction noise levels would exceed the 5-dBA significance threshold at multiple receptors located near the proposed project site. Table 3.10.4-3 presents noise levels for construction activity occurring at the closest point to the receptors. The proposed project site is approximately 19 acres, and the majority of construction activity would occur away from sensitive receptors. Nonetheless, the proposed project would be anticipated to result in a significant impact in terms of exposure of persons to or generation of construction-related noise levels in excess of applicable standards.

TABLE 3.10.4-3
CONSTRUCTION NOISE LEVELS AT SENSITIVE RECECPTORS

Sensitive Receptor	Distance (Feet) /a/	Maximum Construction Noise Level (dBA) /b/	Existing Ambient (dBA, L_{eq}) /c/	New Ambient (dBA, L_{eq}) /d/	Increase /e/
Single-family residences east of proposed project	Adjacent	89.0	61.1	89.0	37.9
Single-family residences west of proposed project	Adjacent	89.0	65.1	89.0	19.8
Multi-family residences south of the proposed project	Adjacent	89.0	71.3	89.1	17.8
Long Beach City College–Pacific Coast Campus	65	86.7	65.1	86.8	21.7
John G. Whittier Elementary School	310	68.2	67.1	70.7	3.6
Alvarado (Juan Bautista) Elementary School	520	63.7	55.4	64.3	8.9
Mary Butler Elementary School	530	63.5	67.8	69.2	1.4

KEY: /a/ Distance of noise source from receptor.
/b/ Construction noise source's sound level at receptor location, with distance and building adjustment.
/c/ Pre-construction activity ambient sound level at receptor location.
/d/ New sound level at receptor location during the construction period, including noise from construction activity.
/e/ An incremental noise level increase of 5 dBA or more would result in a significant impact.
SOURCE: Terry A. Hayes Associates, LLC. November 2008. *Noise and Vibration Impact Report*. Culver City, CA.

Operational Noise

Vehicular Noise. According to the Traffic Impact Analysis prepared by Linscott, Law & Greenspan, Engineers (Appendix F, *Traffic Impact Analysis*), the proposed project would generate 3,770 weekday and 1,482 Saturday daily vehicle trips. To determine off-site noise impacts, traffic was modeled under future year (2010) No Project and With Project conditions utilizing FHWA RD-77-108 noise calculation formulas. Weekday and weekend results of the analysis are summarized in Table 3.10.4-4, *2008 and 2010 Estimated Community Noise Equivalent Level – Weekday*, and Table 3.10.4-5, *2008 and 2010 Estimated Community Noise Equivalent Level – Weekend*, respectively. The greatest weekday project-related noise increase would be 0.8-dBA CNEL and

would occur along Alamitos Avenue between Walnut and Cherry Avenues. The greatest weekend project-related noise increase would be 1.1-dBA CNEL and would occur along Alamitos Avenue between Walnut and Cherry Avenues. Roadway noise levels attributed to the proposed project would increase by less than 3-dBA CNEL at all analyzed segments.

TABLE 3.10.4-4
2008 AND 2010 ESTIMATED COMMUNITY NOISE EQUIVALENT LEVEL - WEEKDAY

Roadway Segment	Estimated dBA, CNEL		
	No Project (2008)	Project (2010)	Project Impact
Walnut Avenue between Hill Street and 20th Street	61.1	61.7	0.6
Walnut Avenue between 20th Street and East Pacific Coast Highway	62.7	63.3	0.6
Walnut Avenue south of East Pacific Coast Highway	61.3	61.6	0.3
Cherry Avenue between 21st Street and East Pacific Coast Highway	68.0	68.0	<0.1
Alamitos Avenue between Walnut and Cherry Avenues	58.6	59.4	0.8
East Pacific Coast Highway between Alamitos and Walnut Avenues	72.0	72.2	0.2
East Pacific Coast Highway between Walnut and Rose Avenues	71.9	72.0	0.1
East Pacific Coast Highway between Rose and Cherry Avenues	71.9	72.0	0.1
East Pacific Coast Highway between Cherry and Temple Avenues	71.6	71.6	<0.1

NOTE: The predicted CNEL were calculated as peak hour L_{eq} and converted into CNEL using the California Department of Transportation Technical Noise Supplement (October 1998). The conversion involved making a correction for peak hour traffic volumes as a percentage of average daily traffic and a nighttime penalty correction. The peak hour traffic was assumed to be 10 percent of the average daily traffic.
SOURCE: Terry A. Hayes Associates, LLC. November 2008. *Kroc Community Center Project Noise and Vibration Impact Report.* Culver City, CA.

TABLE 3.10.4-5
2008 AND 2010 ESTIMATED COMMUNITY NOISE EQUIVALENT LEVEL - WEEKEND

Roadway Segment	Estimated dBA, CNEL		
	No Project (2010)	Project (2010)	Project Impact
Walnut Avenue between Hill Street and 20th Street	59.9	60.5	0.6
Walnut Avenue between 20th Street and East Pacific Coast Highway	60.5	61.3	0.8
Walnut Avenue south of East Pacific Coast Highway	59.6	59.9	0.3
Cherry Avenue between 21st Street and East Pacific Coast Highway	69.9	69.9	<0.1
Alamitos Avenue between Walnut and Cherry Avenues	56.5	57.6	1.1
East Pacific Coast Highway between Alamitos and Walnut Avenues	70.2	70.5	0.3
East Pacific Coast Highway between Walnut and Rose Avenues	70.1	70.1	<0.1
East Pacific Coast Highway between Rose and Cherry Avenues	70.1	70.2	0.1
East Pacific Coast Highway between Cherry and Temple Avenues	70.4	70.5	0.1

NOTE: The predicted CNEL were calculated as peak hour L_{eq} and converted into CNEL using the California Department of Transportation Technical Noise Supplement (October 1998). The conversion involved making a correction for peak hour traffic volumes as a percentage of average daily traffic and a nighttime penalty correction. The peak hour traffic was assumed to be ten percent of the average daily traffic.
SOURCE: Terry A. Hayes Associates, LLC. November 2008. *Kroc Community Center Project Noise and Vibration Impact Report.* Culver City, CA.

Mobile noise generated by the proposed project would neither cause the ambient noise level measured at the property line of the affected uses to increase by 3-dBA CNEL and therefore increase the noise level rating to the normally unacceptable or clearly unacceptable category

(Table 3.10.1-3) nor cause a 5-dBA or more increase in noise level. Therefore, the proposed project would result in a less than significant mobile noise impact.

Stationary Noise. Potential stationary noise sources related to the long-term operations of the proposed project include mechanical equipment. Mechanical equipment [e.g., heating, ventilation, and air conditioning (HVAC) equipment] typically generates noise levels of approximately 60 dBA at 50 feet. In addition, mechanical equipment would be screened from view as necessary to comply with Section 8.80.200 of the LBMC. Operation of mechanical equipment would not be anticipated to increase ambient noise levels by 5 dBA or more. Stationary noise would result in a less than significant impact.

Indoor Activity Noise. The proposed project site would include a two-story auditorium (lecture hall/sanctuary, stage, lobby, etc.), a four-story administrative and educational building (offices, library, multipurpose rooms, etc.), and a two-story recreation center (gymnasium, exercise rooms, etc.). Activities conducted within these buildings would be enclosed on all sides, and noise generated by these facilities would be inaudible at nearby sensitive receptors. Indoor activity noise would result in a less than significant impact.

Outdoor Activity Noise. The proposed project site would include an outdoor recreation area with three pools (a 50-meter, warm-up, and leisure pool), an amphitheater, a soccer field, a playground, walking trails, outdoors climbing wall, and challenge course. Outdoor activities typically generate 73 dBA noise level at 50 feet.[19] The closest sensitive receptors to outdoor activity areas include three residential land uses adjacent to the proposed project site.

As shown in Table 3.10.4-6, *Outdoor Activity Noise Impact*, the highest ambient noise increase due to outdoor activity noise would occur at the single- and multi-family residences along Gardenia Street, located approximately 15 feet east of the proposed project boundary. The nearest outdoor activity noise would occur at the pool facility, approximately 250 feet from these residences. These residential uses would experience an 8.6-dBA increase in ambient noise from noise generated at the pool facilities. This would exceed the 5-dBA threshold for operational noise. All other nearby sensitive uses would experience ambient noise level increases below the 5-dBA threshold from outdoor activity noise. Therefore, the proposed project would be anticipated to result in a significant impact in terms of exposure of persons to or generation of outdoor activity–related noise levels in excess of applicable standards.

[19] Cowan, James P. 1993. *Handbook of Environmental Acoustics*. New York, NY: Wiley-Interscience.

TABLE 3.10.4-6
OUTDOOR ACTIVITY NOISE IMPACT

Sensitive Receptor	Distance (feet) /a/	Maximum Outdoor Activity Noise Level /b/	Existing Ambient (dBA, L_{eq}) /c/	New Ambient (dBA, L_{eq}) /d/	Increase /e/
Single- and multi-family residences along Gardenia Street east of the proposed project	250	59.0	51.1	59.7	8.6
Long Beach City College–Pacific Coast Campus	250	59.0	65.1	66.1	1.0
Single-family residence along Walnut Avenue west of the proposed project	320	56.9	65.1	65.7	0.6
Multi-family residence along East Pacific Coast Highway south of the proposed project	515	52.7	71.3	71.4	0.1

KEY: /a/ Distance from nearest outdoor activity noise source to receptor.
/b/ Outdoor activity noise source's sound level at receptor location, with distance and building adjustment.
/c/ Pre-construction activity ambient sound level at receptor location.
/d/ New sound level at receptor location during the operational period, including noise from nearest outdoor activity areas.
/e/ An incremental noise level increase of 5 dBA or more would result in a significant impact.
SOURCE: Terry A. Hayes Associates, LLC. November 2008. *Kroc Community Center Project Noise and Vibration Impact Report.* Culver City, CA.

Parking Noise. The proposed project would include two parking facilities. A surface parking lot would be located on the west side of the proposed project site along Walnut Avenue approximately 65 feet from Long Beach City College–Pacific Coast Campus. A two-level parking structure would be located on the southeast portion of the proposed project site approximately 50 feet from single- and multi-family residential uses to the east and 25 feet from the multi-family residential use to the south. Automobile parking activity typically generates a noise level of approximately 58.1 dBA L_{eq} at 50 feet (e.g., tire noise, engine run-ups, and door slams).[20]

As shown in Table 3.10.4-7, *Parking Activity Noise Impact*, the highest ambient noise increase due to parking activity noise would occur at the single- and multi-family residences along Gardenia Street, located approximately 15 feet east of the proposed project boundary. The nearest parking activity noise would occur at the surface level of the parking structure, approximately 50 feet from these residential uses. These residential uses would experience a 7.8-dBA increase in ambient noise from noise generated at the parking structure. This would exceed the 5-dBA threshold for operational noise. All other nearby sensitive uses would experience ambient noise level increases below the 5-dBA threshold from parking activity noise. Therefore, the proposed project would be anticipated to result in a significant impact in terms of exposure of persons to or generation of parking-related noise levels in excess of applicable standards.

[20] The referenced parking noise level is based on a series of noise measurements completed 50 feet from vehicles accessing a multi-level parking structure.

TABLE 3.10.4-7
PARKING ACTIVITY NOISE IMPACT

Sensitive Receptor	Distance (feet) /a/	Maximum Parking Activity Noise Level /b/	Existing Ambient (dBA, L_{eq}) /c/	New Ambient (dBA, L_{eq}) /d/	Increase /e/
Multi-family residence along East Pacific Coast Highway south of the proposed project	25	58.1	71.3	71.5	0.2
Single- and multi-family residences along Gardenia Street east of the proposed project	50	58.1	51.1	58.9	7.8
Long Beach City College–Pacific Coast Campus	65	55.8	65.1	65.6	0.5
Single-family residence along Walnut Avenue west of the proposed project	180	47.0	65.1	65.2	0.1

KEY: /a/ Distance from nearest Parking activity noise source to receptor.
/b/ Parking activity noise source's sound level at receptor location, with distance and building adjustment.
/c/ Pre-construction activity ambient sound level at receptor location.
/d/ New sound level at receptor location during the operational period, including noise from nearest outdoor activity areas.
/e/ An incremental noise level increase of 5 dBA or more would result in a significant impact.
SOURCE: Terry A. Hayes Associates, LLC. November 2008. *Kroc Community Center Project Noise and Vibration Impact Report.* Culver City, CA.

Loading Activity and Delivery Truck Noise. The proposed project would include one loading dock for delivery trucks located at the back of the administration and education building. Noise levels from medium duty trucks accessing the proposed project site would range from 71 to 79 dBA L_{eq} at 50 feet.[21] Back-up safety alarms would generate a single-event noise level of approximately 79 dBA at 50 feet.[22]

The loading dock would be accessed from the surface parking level of the two-level parking structure. Delivery trucks would enter the proposed project site along Rose Avenue and would park in a loading dock at the back of the administration building. The loading dock would be enclosed on three sides by walls and would be completely screened from the multi-family residence to the south, from Long Beach City College–Pacific Coast Campus to the west, and the single-family residence adjacent to the proposed project site along Walnut Avenue. The loading would mainly service step vans (e.g., FedEx trucks) that do not have backup alarms. Trucks would back into the loading area such that unloading/loading would occur to the west with the truck facing east. Loading activity would not be audible at the residential uses located east of the proposed project site, and loading activity would result in a less than significant impact.

[21] California Department of Transportation. October 1998. *Technical Noise Supplement.* Available at: http://www.dot.ca.gov/hq/env/noise/pub/Technical%20Noise%20Supplement.pdf

[22] The back-up safety alarm noise level was based on regulations set forth by the Occupational Safety and Health Administration.

Ground-Borne Vibration

Construction Phase Ground-borne Vibration Impacts

As shown in Table 3.10.4-8, *Vibration Velocities for Construction Equipment*, the use of heavy equipment (e.g., a large bulldozer) generates vibration levels of 0.089 inch per second peak particle velocity (PPV) at a distance of 25 feet. The nearest residential structures to the proposed project site would be approximately 25 feet from occasional heavy equipment activity and could experience vibration levels of 0.089 inch per second PPV. Vibration levels at these receptors would be perceptible but would not exceed the potential building damage threshold of 0.5 inch per second PPV.

The proposed project may require drilled or driven piles. Impact pile driving would generate a vibration level of 0.644 inch per second PPV at the multi-family residence to the south, which would exceed the potential building damage threshold of 0.5 inch per second PPV. The proposed project would result in a significant construction vibration impact without mitigation.

TABLE 3.10.4-8
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 25 Feet (Inch/Second) /a/
Pile driving (Impact)	0.644
Pile driving (Sonic)	0.170
Caisson drilling	0.089
Large bulldozer	0.089
Loaded trucks	0.076

KEY: /a/ Fragile buildings can be exposed to ground-borne vibration levels of 0.5 inch per second peak particle velocity (PPV) without experiencing structural damage.
SOURCE: Federal Transit Authority. May 2006. *Transit Noise and Vibration Impact Assessment.*

Ambient Noise Levels

The proposed project's operation would potentially result in a substantial permanent increase in ambient noise levels. The LBMC does not define what constitutes a *substantial* increase. However, an increase of at least 5 dBA is a noticeable change, thereby causing community response, and is often considered as a significant impact. Therefore, a 5-dBA noise increase over the ambient noise level will be considered substantial for the purpose of this analysis. In addition, the proposed project would cause a significant impact if it causes the ambient noise level measured at the property line of the affected uses to increase by 3-dBA CNEL and therefore increase the noise level rating to the normally unacceptable or clearly unacceptable categories (Table 3.10.1-3).

As discussed in the *Operational Noise* subsection earlier in this section, roadway noise levels attributed to the operation of mechanical equipment activities conducted indoors during operation of the proposed project, as well as loading activities conducted during operation of the proposed project, would not be anticipated to result in a substantial increase over the ambient noise level. However, ambient noise increase due to outdoor activity (Table 3.10.4-6) and parking activity (Table 3.10.4-7) would exceed the 5-dBA threshold for operational noise. Therefore, implementation of the proposed project would result in significant impacts in terms of a permanent increase in ambient noise levels in the proposed project vicinity above those existing without the proposed project.

The proposed project's operation would potentially result in a substantial temporary or periodic increase in ambient noise levels. The LBMC does not define what constitute a *substantial* increase. However, an increase of at least 5 dBA is a noticeable change, thereby causing community response, and is often considered as a significant impact. Therefore, a 5-dBA noise increase over the ambient noise level will be considered substantial for the purpose of this analysis. In addition, the proposed project would cause a significant impact if it causes the ambient noise level measured at the proposed property line of the affected uses to increase by 3-dBA CNEL and therefore increase the noise level rating to the normally unacceptable or clearly unacceptable categories (Table 3.10.1-3).

As discussed in the *Construction Noise* subsection earlier in this section, construction noise levels would exceed the 5-dBA significance threshold at multiple receptors located near the proposed project site (Table 3.10.4-8). Therefore, implementation of the proposed project would result in significant impacts in terms of a substantial temporary increase in ambient noise levels in the proposed project vicinity above those existing without the project.

Airports and Airport Land Use Plans

The proposed project would not result in significant impacts from airports or the carrying out of airport land use plans. While the proposed project would be located within 2 miles of a public airport, it would still not be expected to result in significant impacts. The Long Beach Municipal Airport has an Airport Noise Compatibility Ordinance that places restrictions on the daily number of commercial flights and on the noise generated by the airport. The proposed project site is outside of the 60-CNEL contour line of noise generated by the airport, which is approximately 1.3 miles northeast of the proposed project site at its closest location.[23] Therefore, the proposed project would not result in significant impacts from the exposure of people residing or working in the project area to excessive noise levels caused by a public airport.

Private Airstrips

The implementation of the proposed project would not result in significant impacts from private airstrips. There are no private airstrips near the proposed project area. Therefore, the proposed project would not result in significant impacts from the exposure of people residing or working in the project area to excessive noise levels caused by private airstrips.

Cumulative Impacts

Table 3.10.4-9, *2008 and 2010 Estimated Cumulative Community Noise Equivalent Level - Weekday*, and Table 3.10.4-10, *2008 and 2010 Estimated Cumulative Community Noise Equivalent Level - Weekend*, present the cumulative increase in future traffic noise levels at intersections (i.e., 2008 existing no project conditions plus proposed project traffic) for weekday and weekend conditions, respectively. The maximum cumulative weekday roadway noise increase would be 0.9-dBA CNEL and would occur along Alamitos Avenue between Walnut and Cherry Avenues. The maximum cumulative weekend roadway noise increase would be 1.1-dBA CNEL and would occur along two segments: Alamitos Avenue between Walnut and Cherry Avenues, and

[23] City of Long Beach, Department of Development Services. November 2005. *Long Beach Airport Terminal Area Improvement Project Draft EIR*. Long Beach, CA. Available at: http://www.longbeach.gov/civica/filebank/blobdload.asp?BlobID=9287

Walnut Avenue between 20th Street and East Pacific Coast Highway. No analyzed intersection would experience a cumulative increase greater than 3-dBA CNEL. Mobile noise would result in a less than significant impact.

The predominant vibration source near the proposed project site is heavy trucks traveling on the local roadways. Neither the proposed project nor related projects would substantially increase heavy-duty vehicle traffic near the proposed project site. The proposed project would not add to a cumulative vibration impact.

TABLE 3.10.4-9
2008 AND 2010 ESTIMATED CUMULATIVE COMMUNITY NOISE EQUIVALENT LEVEL - WEEKDAY

Roadway Segment	Estimated dBA, CNEL		
	Existing (2008)	Project (2010)	Cumulative Impact
Walnut Avenue between Hill Street and 20th Street	60.9	61.7	0.8
Walnut Avenue between 20th Street and East Pacific Coast Highway	62.6	63.3	0.7
Walnut Avenue south of East Pacific Coast Highway	61.0	61.6	0.6
Cherry Avenue between 21st Street and East Pacific Coast Highway	67.8	68.0	0.2
Alamitos Avenue between Walnut and Cherry Avenues	58.5	59.4	0.9
East Pacific Coast Highway between Alamitos and Walnut Avenues	71.8	72.2	0.4
East Pacific Coast Highway between Walnut and Rose Avenues	71.7	72.0	0.3
East Pacific Coast Highway between Rose and Cherry Avenues	71.7	72.0	0.3
East Pacific Coast Highway between Cherry and Temple Avenues	71.3	71.6	0.3

NOTE: The predicted CNEL were calculated as peak hour L_{eq} and converted into CNEL using the California Department of Transportation Technical Noise Supplement (October 1998). The conversion involved making a correction for peak hour traffic volumes as a percentage of average daily traffic and a nighttime penalty correction. The peak hour traffic was assumed to be 10 percent of the average daily traffic.
SOURCE: Terry A. Hayes Associates, LLC. November 2008. *Kroc Community Center Project Noise and Vibration Impact Report.* Culver City, CA.

TABLE 3.10.4-10
2008 AND 2010 ESTIMATED CUMULATIVE COMMUNITY NOISE EQUIVALENT LEVEL - WEEKEND

Roadway Segment	Estimated dBA, CNEL		
	Existing (2008)	Project (2010)	Cumulative Impact
Walnut Avenue between Hill Street and 20th Street	59.6	60.5	0.9
Walnut Avenue between 20th Street and East Pacific Coast Highway	60.2	61.3	1.1
Walnut Avenue south of East Pacific Coast Highway	59.1	59.9	0.8
Cherry Avenue between 21st Street and East Pacific Coast Highway	69.6	69.9	0.3
Alamitos Avenue between Walnut and Cherry Avenues	56.5	57.6	1.1
East Pacific Coast Highway between Alamitos and Walnut Avenues	69.9	70.5	0.6
East Pacific Coast Highway between Walnut and Rose Avenues	69.7	70.1	0.4
East Pacific Coast Highway between Rose and Cherry Avenues	69.8	70.2	0.4
East Pacific Coast Highway between Cherry and Temple Avenues	70.1	70.5	0.4

NOTE: The predicted CNEL were calculated as peak hour L_{eq} and converted into CNEL using the California Department of Transportation Technical Noise Supplement (October 1998). The conversion involved making a correction for peak hour traffic volumes as a percentage of average daily traffic and a nighttime penalty correction. The peak hour traffic was assumed to be 10 percent of the average daily traffic.
SOURCE: Terry A. Hayes Associates, LLC. November 2008. *Kroc Community Center Project Noise and Vibration Impact Report.* Culver City, CA.

3.10.5 Mitigation Measures

Construction Phase Mitigation Measures

Measure Noise-1

All construction equipment shall be equipped with mufflers and other suitable noise attenuation devices.

Measure Noise-2

The applicant shall require that grading and construction contractors use equipment with rubber tires rather than tracks to the extent possible, to minimize the impacts of excavation and grading noise upon the adjacent neighborhood.

Measure Noise-3

A 10-foot sound attenuation blanket shall be installed along the eastern portion of the property line such that the line of sight is blocked from construction activity to the residential land uses. The blankets shall remain in place as long as construction activity utilizing heavy duty equipment is located within 200 feet of the property line.

Measure Noise-4

A 10-foot sound attenuation blanket shall be installed along the northwestern portion of the property line such that the line of sight is blocked from construction activity to the single-family residence. The blankets shall remain in place as long as construction activity utilizing heavy duty equipment is located within 130 feet of the property line.

Measure Noise-5

A 10-foot sound attenuation blanket shall be installed along the southern portion of the property line such that the line of sight is blocked from construction activity to the multi-family residence. The blankets shall remain in place as long as construction activity utilizing heavy duty equipment is located within 100 feet of the property line.

Measure Noise-6

A 10-foot sound attenuation blanket shall be installed along the northern portion of the property line such that the line of sight is blocked from construction activity to the Alvarado (Juan Bautista) Elementary School. The blankets shall remain in place as long as construction activity utilizing heavy duty equipment is located within 50 feet of the property line.

Measure Noise-7

A noise disturbance coordinator shall be established. The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall be required to implement reasonable.

Operational Phase Mitigation Measures

Measure Noise-8

A 6-foot-high solid wall shall be constructed along the eastern portion of the outdoor aquatics area such that the line of sight is blocked from the swimming pools to residential land uses.

Measure Noise-9

A 6-foot-high solid wall shall be constructed along the eastern property line of the project site such that the line of sight is blocked from the parking lot to residential land uses.

3.10.6 Level of Significance after Mitigation

Implementation of mitigation measure Noise-1 would reduce noise levels by approximately 3 dBA. Implementation of mitigation measures Noise-3 through Noise-6 would reduce noise levels by at least 10 dBA. Implementation of mitigation measures Noise-2 and Noise-7 would further assist in attenuating construction noise levels. Table 3.10.6-1, *Construction Noise Impact – Mitigated*, shows anticipated construction noise levels after implementation of mitigation measures Noise-1 through Noise-7. While implementation of mitigation measures Noise-1 through Noise-7 would reduce construction generated noise levels, noise levels would still exceed the 5-dBA significance

threshold at multiple receptors. Therefore, construction-generated noise would still remain a significant adverse and unavoidable impact.

TABLE 3.10.6-1
CONSTRUCTION NOISE IMPACT - MITIGATED

Sensitive Receptor	Distance (Feet) /a/	Maximum Construction Noise Level (dBA) /b/	Existing Ambient (dBA, L_{eq}) /c/	New Ambient (dBA, L_{eq}) /d/	Increase /e/
Single-family residences east of proposed project	Adjacent	76.0	61.1	76.1	15.0
Single-family residence west of proposed project	Adjacent	76.0	65.1	76.8	19.8
Multi-family residence south of the proposed project	Adjacent	76.0	71.3	77.3	6.0
Long Beach City College–Pacific Coast Campus	65	83.7	65.1	83.8	18.7
John G. Whittier Elementary School	310	65.2	67.1	69.3	2.2
Alvarado (Juan Bautista) Elementary School	520	50.7	55.4	56.7	2.3
Mary Butler Elementary School	530	63.5	67.8	69.2	1.4

KEY: /a/ Distance of noise source from receptor; /b/ Construction noise source's sound level at receptor location, with distance and building adjustment; /c/ Pre-construction activity ambient sound level at receptor location; /d/ New sound level at receptor location during the construction period, including noise from construction activity; /e/ An incremental noise level increase of 5 dBA or more would result in a significant impact.
SOURCE: Terry A. Hayes Associates, LLC. November 2008. *Kroc Community Center Project Noise and Vibration Impact Report.* Culver City, CA.

Implementation of mitigation measure Noise-8 would reduce outdoor activity noise levels at the single- and multi-family residential uses to the east of the project site by approximately 5 dBA. With the implementation of this mitigation measure, these residential uses would experience a 4.7 dBA increase from outdoor activity over the existing ambient noise level. This level would not exceed the 5-dBA threshold for operational noise. Therefore, implementation of the mitigation measure Noise-8 would reduce significant impacts related to outdoor activity–generated noise to below the level of significance.

Implementation of mitigation measure Noise-9 would reduce outdoor activity noise levels at the single- and multi-family residential uses to the east of the project site by approximately 5 dBA. With the implementation of this mitigation measure, these residential uses would experience a 4.1-dBA increase from parking activity over the existing ambient noise level. This level would not exceed the 5-dBA threshold for operational noise. Therefore, implementation of mitigation measure Noise-9 would reduce significant impacts related to parking activity–generated noise to below the level of significance.

3.11 RECREATION

As a result of the Initial Study (Appendix A), the City of Long Beach (City) determined that the proposed Kroc Community Center (proposed project) had the potential to result in impacts to recreation. Therefore, this issue has been carried forward for detailed analysis in this Environmental Impact Report (EIR). This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to recreation and to identify potential alternatives.

The analysis of recreation consists of a summary of the regulatory framework that guides the decision-making process, a description of the existing conditions at the proposed project area, thresholds for determining if the proposed project would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation. Recreation at the proposed project site was evaluated with regard to state, regional, and local data and forecasts for recreation, the City General Plan Open Space and Recreation element,[1] and the Long Beach Strategic Plan 2010.[2]

3.11.1 Regulatory Framework

Federal

Americans with Disabilities Act of 1990

The Americans with Disabilities Act (ADA) is a comprehensive civil rights law that prohibits discrimination on the basis of disability. To ensure access to the built environment, the ADA requires the establishment of design criteria for the construction and alteration of facilities covered by the law. The ADA Accessibility Guidelines, originally published in 1991, serves as the basis for standards used to enforce the design requirements of the ADA. The most recent update of the ADA Accessibility Guidelines, published in 2004, includes supplements that cover state and local government facilities, building elements designed for children's use, play areas, and recreation facilities. Alterations to qualified historic buildings shall comply with the guidelines set forth for existing buildings and facilities in Chapter 2 of the ADA Accessibility Guidelines for Buildings and Facilities.[3]

Exceptions exist if the State Historic Preservation Officer or Advisory Council on Historic Preservation determines that the compliance with the requirements for accessible routes, entrances, or toilet facilities would threaten or destroy the historic significance of the building or facility (per Section 202.5 in the ADA Accessibility Guidelines).

Section 4(f) of the Department of Transportation Act

Section 4(f) of the Department of Transportation Act [Section 4(f), re-codified at 49 USC 303], analyzes whether a proposed project has the potential to result in a use of public parks and recreation lands, wildlife and waterfowl refuges, and any historic sites as defined by the Department of Transportation. Use within the context of Section 4(f) occurs when a proposed project requires a physical taking or

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[1] City of Long Beach, Department of Planning and Building. October 2002. *City of Long Beach General Plan, Open Space and Recreation Element.* Long Beach, CA.

[2] City of Long Beach. 20 June 2000. *Long Beach Strategic Plan 2010.* Long Beach, CA. Available at: http://www.longbeach.gov/civica/filebank/blobdload.asp?BlobID=3191

[3] Americans with Disabilities Act. 2004. ADA Accessibility Guidelines, Chapter 2, "Scoping Requirements." Available at: http://www.access-board.gov/ADA-ABA/index.htm

other direct control of the land for the purpose of the proposed project. Use also includes adverse environmental impacts, also termed constructive use. Constructive use may occur when impacts substantially impair the activities, features, or attributes of the resource that contribute to its significance or its enjoyment. As outlined for the proposed project, no such use would be considered applicable for project completion.

Regional

Southern California Association of Government's (SCAG) Regional Comprehensive Plan and Guide

The Open Space and Conservation element of the Southern California Association of Government's *Regional Comprehensive Plan and Guide* states that urban-type land uses and facilities need to support future additional population growth that will consume a large portion of the remaining privately held land in the region.[4] The plan emphasizes three primary goals that are related to the consideration of the proposed project:

- Provide adequate opportunities to meet the needs for outdoor recreation, which is considered important to providing a good quality of life for residents who live in highly urbanized areas of the region
- Maintain open space for adequate protection of lives and property against natural and manmade disasters
- Develop well-managed and viable ecosystems or known habitats of rare, threatened, and endangered species

Local

City of Long Beach General Plan, Open Space and Recreation Element

The Open Space and Recreation element of the General Plan includes goals and principles that guide decision making related to recreation resources. The goals of the General Plan aim to preserve natural resources, to manage production of resources, to protect against natural hazards, and to provide adequate public recreational opportunities. Specific principles related to the proposed project include:[5]

- Achieving a ratio of 8 acres of publicly owned recreation open per 1,000 residents
- Adding recreation open space and recreation facilities in the areas of the City that are most underserved
- Providing the recreational resources the public wants
- Making all recreational resources environmentally friendly and socially and economically feasible
- Increasing recreation resources and supplementing publicly owned recreation resources with privately owned recreation resources
- Providing access to recreation resources for all individuals in the community

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[4] Southern California Association of Governments. Adopted April 1995. *Regional Comprehensive Plan and Guide.* Chapter 9, "Open Space and Conservation." Available at: http://www.scag.ca.gov/rcp/pdf/pastprojects/1996RCPGOpenSpaceChapter.pdf

[5] City of Long Beach, Department of Planning and Building. October 2002. *City of Long Beach General Plan, Open Space and Recreation Element.* Long Beach, CA.

City of Long Beach City Council, Interim Green Building Requirements for Private Development

The City Council adopted interim Green Building Requirements for Private Development on November 21, 2006.[6] The interim policy applies to all new projects that are submitted for development entitlements and meet the policy thresholds beginning November 22, 2006, until the date that a permanent policy is adopted and becomes effective.

According to the interim Green Building Requirements for Private Development in the City, "all private development projects that receive direct city funding or benefit from other direct city incentives would be required, prior to the issuance of a Certificate of Occupancy, to have registered their project with the U.S. Green Building Council with the intent to achieve a minimum level of Leadership in Energy and Environmental Design (LEED) certification in their final building design or to provide third-party verification that they meet the equivalent of the minimum requirements of LEED certification in the final building design to the satisfaction of the Director of Planning and Building."[7]

3.11.2 Existing Conditions

The proposed project site is located on Hamilton Bowl / Chittick Field, at 1900 Walnut Avenue, Long Beach, County of Los Angeles, California. The proposed project area consists of up to 7.5 acres of development on an approximately 19-acre site located in the City, County of Los Angeles, California. The proposed project site is roughly 1.87 miles north of the Pacific Ocean. The proposed project area is partially located on a storm water detention basin known as Hamilton Bowl / Chittick Field and currently is owned by the County of Los Angeles Department of Public Works (Figure 2.1-4). The San Diego Freeway (Interstate 405) is roughly 1.45 miles north of the proposed project site, the San Gabriel River Freeway (Interstate 605) is approximately 4.7 miles to the east, and the Long Beach Freeway (Interstate 710) is a little more than 2 miles west of the proposed project site. The site consists of approximately 19 acres of undeveloped parcels of land that are used as a storm water dry detention basin. The 19-acre property is bounded by East 20th Street, a small flood control area, and the City of Signal Hill to the north. East of the proposed project site is a residential area with a narrow alley between Rose Avenue and Gardenia Avenue. Commercial development borders the proposed site to the south and faces East Pacific Coast Highway, and the Long Beach City College–Pacific Coast Campus is located directly adjacent to the site off Walnut Avenue to the west.

Within the City, five park facilities exist within a 1-mile radius of the proposed project site. The nearest park is the Martin Luther King, Jr. Park, an 8.9-acre area that is located approximately 0.3 mile west of the proposed project. The park includes a community center, handball/racquetball court, picnic areas, playground, soccer fields, swimming pool, softball fields, and restrooms. Signal Hill Park is the second nearest park to the proposed project site and consists of a 10-acre area that lies 0.5 mile north of the site. This park includes a new playground, restrooms, four sheltered picnic tables, five mini-shelters, four picnic tables, barbeque grills, horseshoe pits, an amphitheatre, two basketball courts with lights, and a ball wall. Hilltop Park is another nearby park that lies 0.7 mile northeast of the proposed project site that covers a 3.2-acre area. The park includes two covered and two uncovered picnic tables, a submerged 1.2-million-gallon water reservoir, unique artwork, 360° views, and restrooms. MacArthur Park is the fourth park within the 1-mile radius of the proposed project site. The park lies 0.8 mile south of the proposed project site, covering a 3.9-acre area and includes the Homeland Cultural Center, ball field, basketball courts, a community center, a volleyball court, a playground, a picnic

[6] City of Long Beach. Accessed 24 November 2007. Web site. "Green Building for Private Development (Green Ribbon Committee)." Available at: http://www.lbds.info/planning/advance_planning/green_building/default.asp#priv_dev

[7] City of Long Beach. Accessed 24 November 2007. Web site. "Green Building for Private Development (Green Ribbon Committee)." Available at: http://www.lbds.info/planning/advance_planning/green_building/default.asp#priv_dev

area, restrooms, a sports field, and open space. Discovery Well Park is a 4.9-acre area that lies approximately 1.2 miles northeast of the proposed project site. The site includes a small community center, a playground, a basketball half court, two picnic shelters, BBQ grills, restrooms, public art areas, an open turf area, an amphitheater, a ball wall, and a playground.

3.11.3 Significance Thresholds

The potential for the proposed project to result in impacts related to recreation was analyzed in relation to the questions contained in Appendix G of the State CEQA Guidelines. The project would normally be considered to have a significant impact to recreation when the potential for any one of the following two thresholds occurs:

- Increase in the use of existing neighborhoods and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

- The construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

3.11.4 Impact Analysis

This section analyzes the potential for significant impacts on recreation that would occur from implementation of the proposed project. The thresholds for determining if significant impacts on recreation would occur are based on Appendix G of the State CEQA Guidelines.

The indoor components intended for the proposed project would be enclosed in an approximately 170,536-square-foot, three- to four-story, three-building complex and would include the following:

- *Chapel / Auditorium building.* This roughly 12,455-square-foot structure would be located at the southwest corner of the proposed project site near East Pacific Coast Highway and Walnut Avenue. This two-story building would include a lobby, lecture halls, stage, and backstage areas.

- *Administration/Education building.* The building would be roughly 73,910 square feet set back from Walnut Avenue and situated off the northeast corner of the chapel / auditorium building. This four-story building would house a drop-in daycare, a 3,500-square-foot kitchen, art studios, multipurpose rooms, classrooms, a library, a computer lab, and administrative offices.

- *Recreation Center.* This two-story building would be located to the north of the administration/education building and would consist of approximately 84,171 square feet, including a gymnasium, classrooms, a fitness center, exercise rooms, a weight room, locker rooms, a game room, and an indoor therapy pool.

The outdoor components would consist of the following:

- *Outdoor Recreation.* This space would consist of a playing field (discussed below) and 2 acres of gardens, play yards, and horticulture areas. The outdoor aquatics complex would include a 50-meter pool, a warm-up pool, a leisure pool with fountains and slides, and a children's area. Other site amenities would include a playground, walking

trails, a roughly 10,000-square-foot amphitheater, an outdoor climbing wall, a challenge course, an exterior patio, and a horticulture area.

- *Recreation "Soccer" Field.* This space would be a 4-acre field that would accommodate up to 5,000 spectators. It would be adjacent to a 10,000-square-foot amphitheater that would accommodate up to 750 spectators in a bowl-shaped seating area.[8]

- *Landscaping.* Landscaping at the proposed project site would be consistent with the plant species and vegetation for the area. Planting of vegetation would consist of plant species that would continue to support the presence of the identified lepidopteran (specifically butterfly) species at the proposed project site, as well as the additional wildlife that would be supported by these plants.[9] The proposed landscaping and irrigation system would be designed for moderate to draught tolerant plants for conservation purposes.[10]

Direct Impacts

Accelerated Physical Deterioration of Existing Neighborhood Recreational Facilities

The proposed project would not result in significant impacts to recreation related to the accelerated physical deterioration of existing neighborhood recreational facilities. Currently, the proposed project site is used by residents of the City and the adjacent City of Signal Hill as recreational open space with several picnic tables and a general recreational field for seasonal sports. The increased use of the nearby parks during the construction of the proposed project may result in minimal physical deterioration of the parks, due to short-term loss of public access to these facilities during the approximately 29-month construction of the proposed project. However, once the proposed facilities are open, the project would provide outdoor and indoor recreational facilities that would help better address the recreational needs of the community. Therefore, the proposed project would not be expected to result in significant impacts to recreation related to the accelerated physical deterioration of existing neighborhood recreational facilities.

Site development for the proposed project would reduce the amount of recreational field space available for sports and recreational activities. Reduction of the amount of recreational field space would not be a significant adverse impact on the physical deterioration of existing neighborhood recreational facilities because the overall development of recreational space at the proposed project site would provide a diverse, multi-use recreational field space expected to meet the recreational needs of the community. As described in Section 2, *Project Description*, of this Draft EIR, outdoor recreational space would consist of a 4-acre playing field that would accommodate up to 5,000 spectators, and also consist of 2 acres of gardens, play yards, and horticulture areas. The outdoor aquatics complex would include a 50-meter pool, a warm-up pool, and a leisure pool with fountains, slides, and a children's area. Other site amenities would include a playground, walking trails, a roughly 10,000-square-foot amphitheater, an outdoor climbing wall, a challenge course, and an exterior patio. These facilities would then provide more overall recreational space than the amount of recreational space that was available on the existing site. Therefore, the proposed project would not be

[8] Salvation Army, Southern California Division. 30 July 2007. Kroc Facilities and Program Design. Los Angeles, CA.

[9] Sapphos Environmental, Inc. 22 October 2008. Memorandum for the Record, 1222-004, No. 3. Pasadena, CA.

[10] Long Beach Water Department. 28 November 2007. Correspondence to Jeffery Winklepleck, City of Long Beach, Long Beach, CA.

expected to result in significant impacts to recreation related to the accelerated physical deterioration of existing neighborhood recreational facilities.

Required Construction or Expansion of Recreational Facilities to Have Adverse Physical Effect on the Environment

The proposed project would not result in significant impacts to recreation related to construction or expansion of recreational facilities that may have an adverse physical effect on the environment. The proposed project would include the development of roughly 170,536 square feet in structures on a recreational site that is currently covered by approximately 8,899 square feet of structures. However, it is anticipated that the proposed project would include LEED elements that may significantly reduce the potential environmental impacts of the proposed project.

The proposed project would provide outdoor and indoor recreational facilities, helping to fulfill the City General Plan Open Space and Recreation element goal of better addressing the recreational needs of the community.[11] The proposed project includes the construction of recreational facilities that may result in the demolition of a potentially historical resource that has been identified on the proposed project site. The Low-flow Pump Station on the proposed project site was constructed during the 1930s and is located on the western border of the proposed project site. At this time, the Low-flow Pump Station's sole use is to store a portable 30-horsepower pump that is manually lowered into the ground by County of Los Angeles staff during storm activity. This pump house appears to meet the criteria for a historical resource pursuant to the State CEQA Guidelines based on architectural significance, integrity, and the date of construction. Therefore, Phase I demolition of the pump house as defined in the proposed project is a significant adverse impact that generally cannot be reduced to below the threshold of significance through the incorporation of mitigation measures. Implementation of mitigation measures would be expected to reduce significant impacts to recreation to the maximum extent feasible in terms of adverse physical effect on the environment resulting from construction of the proposed project. However, the demolition of any historic building would remain a significant impact. The impact analysis for the Low-flow Pump Station and the mitigation measures are discussed in more detail in the Section 3.4, *Cultural Resources*.

Indirect Impacts

The proposed project includes the construction of recreational facilities that may result in the demolition of potentially historical resources that have been identified on the proposed project site. Demolition of a historical resource on the proposed project site is a significant adverse impact that generally cannot be reduced to below the threshold of significance through the incorporation of mitigation measures. The Low-flow Pump Station on the proposed project site was constructed during the 1930s and is located on the western border of the proposed project site. At this time, the Low-flow Pump Station's sole use is to store a portable 30-horsepower pump that is manually lowered into the ground by County of Los Angeles staff during storm activity. This pump house appears to meet the criteria for a historical resource pursuant to State CEQA Guidelines based on architectural significance, integrity, and the date of construction. The analysis and mitigation measures are discussed in more detail in the Section 3.4, *Cultural Resources*.

[11] City of Long Beach, Department of Planning and Building. October 2002. *City of Long Beach General Plan, Open Space and Recreation Element.* Long Beach, CA.

Cumulative Impacts

The incremental impacts of the proposed project on recreation, when added to the related past, present, or reasonably foreseeable, probable future projects listed in Section 2, *Project Description*, would not be expected to be significant. This determination was made based upon a review of state, regional, and local data and forecasts for recreation, as well as the City General Plan Open Space and Recreation element[12] and the Long Beach Strategic Plan 2010.[13] In addition, the proposed project is consistent with the neighboring community and would not create or contribute as substantial impact related to recreation. Therefore, implementation of the proposed project would not cause an incremental impact when considered with the related past, present, or reasonably foreseeable, probable future project.

3.11.5 Mitigation Measure

The proposed project would have the potential to result in significant impacts to recreation constituting a significant adverse effect on the environment. The recreation impacts as identified in this section may be reduced to the maximum extent feasible through the adoption of mitigation measure Cultural-2.

The proposed project includes the construction of recreational facilities that may result in the demolition of a potentially historical resource that has been identified on the proposed project site. Therefore, the proposed project would have the potential to result in significant impacts to recreation constituting a significant adverse effect on the environment. Mitigation measure Cultural-2, as specified in Section 3.4 *Cultural Resources*, will be implemented to reduce significant adverse effects on the environment, including impacts to recreation, resulting from demolition of the Low-flow Pump Station to the maximum extent feasible.

Measure Cultural-2

Impacts related to the loss of an historical resource, the Low-flow Pump Station, shall be reduced through archival documentation of as-found conditions. Prior to issuance of demolition permits, the applicant shall demonstrate to the satisfaction of the City of Long Beach Department of Development Services that documentation of the Low-flow Pump Station is completed by the applicant in the form of a Historic American Buildings Survey that shall comply with the *Secretary of the Interior's Standards for Architectural and Engineering Documentation*. The documentation shall include large-format photographic recordation; a detailed historic narrative report including description, history, and statement of significance; measured architectural drawings (as built and/or current conditions); and a compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards for History and/or Architectural History. The original archival-quality documentation shall be offered as donated material to the National Park Service Heritage Documentation Program, Historic American Buildings Survey, for inclusion in the Library of Congress. Archival copies of the documentation also would be submitted to the Long Beach Public Library; the Historical Society of Long Beach; California State University, Long Beach; the Office of Historic Preservation; and the South Central Coastal Information Center where it would be available to local researchers.

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[12] City of Long Beach, Department of Planning and Building. October 2002. *City of Long Beach General Plan, Open Space and Recreation Element*. Long Beach, CA.

[13] City of Long Beach. 20 June 2000. *Long Beach Strategic Plan 2010*. Long Beach, CA. Available at: http://www.longbeach.gov/civica/filebank/blobdload.asp?BlobID=3191

Completion of this mitigation measure shall be monitored and enforced by the City of Long Beach Department of Development Services.

3.11.6 Level of Significance after Mitigation

Implementation of mitigation measure Cultural-2 would be expected to reduce significant direct, indirect, and cumulative impacts to recreation to the maximum extent feasible, in terms of a historical resource scheduled for demolition. However, the demolition of this historical resource would still remain a significant adverse impact.