5.9 - Noise

5.9.1 - Introduction

This section describes the existing noise setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Acoustical Analysis Technical Report prepared in August 2008 by Michael Brandman Associates, included in this EIR as Appendix I.

5.9.2 - Existing Conditions

Acoustical Terminology

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is generally defined as unwanted sound. Sound is characterized by various parameters that describe the rate of oscillation of sound waves, the distance between successive troughs or crests, the speed of propagation, and the pressure level or energy content of a given sound wave. In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. The unit of sound pressure, a ratio of the faintest sound detectable by a keen human ear, is called a decibel (dB).

A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. The zero point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or fewer are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of more than 3 dB, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness.

Because sound or noise can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale similar to the Richter scale used for earthquake magnitude is used to keep sound intensity numbers at a convenient and manageable level. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, noise levels at maximum human sensitivity are factored more heavily into sound descriptions in a process called “A weighting,” written as dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Any further reference to decibels in this report written as dB should be understood to be A-weighted values.

Time variations in noise exposure are typically expressed in terms of a steady-state energy level equal to the energy content of the time-varying period (called L_{eq}), or, alternately, as a statistical description of the sound pressure level that is exceeded over some fraction of a given observation period. Finally, because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that, for planning purposes, an artificial dB increment be added to quiet-

time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL).

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

- Variation in noise levels over time
- Influence of periodic individual loud events
- Community response to changes in the community noise environment

Numerous methods have been developed to measure sound over a period of time, including:

- Equivalent Sound Level (Leq)
- Community Noise Equivalent Level (CNEL)
- Day/Night Average Sound Level (Ldn)

These methods are described and defined below.

L_{eq}

Time variations in noise exposure are typically expressed in terms of a steady-state energy level equal to the energy content of the time-varying period (called L_{eq}), or, alternately, as a statistical description of the sound pressure level that is exceeded over some fraction of a given observation period. For example, the noise levels exceeded on 10 percent of readings is called L_{10}, the median (50th percentile) reading is called L_{50}, etc.

CNEL

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that, for planning purposes, an artificial dB increment penalty be added to quiet-time noise levels in a 24-hour noise descriptor called CNEL.

L_{dn}

Another commonly used method is the day/night average level or L_{dn}. The L_{dn} is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period call the L_{eq}. The L_{dn} is calculated by averaging the L_{eq} for each hour of the day at a given location after penalizing the sleeping hours (defined as 10:00 p.m. to 7:00 a.m.) by 10 dBA to account for the increased sensitivity of people to noises that occur at night. The maximum noise level recorded during a noise event is typically expressed as L_{max}. The sound level exceeded over a specified time can be expressed as L_n (e.g., L_{90}, L_{50}, L_{10}). L_{50} equals the level exceeded 50 percent of the time, L_{10} equals the level exceeded 10 percent of the time, etc.

As previously mentioned, people respond to changes in sound pressure, which are measured on a noise scale in a logarithmic manner. In general, a 3-dB change in sound pressure level is considered a just detectable difference in most situations. A 5-dB change is readily noticeable, and a 10-dB change is considered a doubling (or halving) of the subjective loudness. Note that a 3-dB increase or decrease in the average traffic nose level is realized by a doubling or halving of the traffic volume, or by about a 7-mile-per-hour increase or decrease in speed.

For each doubling of distance from a point noise source, the sound level will decrease by 6 dB. In other words, if a person is 100 feet from a machine and moves 200 feet from that source, sound levels will drop by approximately 6 dB. Moving 400 feet away, sound levels will drop approximately another 6 dB. For each doubling of distance from a line source, such as a roadway, noise levels are reduced 3 to 5 decibels, depending on the ground cover between the source and the receiver.

Existing Noise

The noise environment within the project area is dominated primarily by vehicle traffic and community activity. Within the project area, there are noise sensitive residential land uses to the south, west and east. Traffic along West Balboa Boulevard generates the majority of the ambient noise in the project area. Occasional aircraft overflight and motorcycle drive-bys generate relatively high noise levels, but are not the major noise events in the project area. A more detailed discussion of these noise sources is below. There are no airports or railroads in the project vicinity.

Existing noise levels around the project vicinity were determined for a previous project on the site of the proposed project. Existing noise levels were derived almost exclusively from vehicular sources on the streets throughout the area. In order to better define the existing noise environment in the project vicinity, a 24 hour noise measurement program was conducted on February 5 and 6, 2004 by Giroux, Inc. for the Noise Impact Analysis for the proposed Marina Park Resort and Community Plan. On site noise measurements were made at two locations. One meter was placed in the play area of Las Arenas Park north of Balboa Boulevard, approximately 186 feet to centerline of Balboa Boulevard. The second meter was placed near the Girl Scout office and tennis courts, north of Balboa Boulevard and approximately 60 feet to its centerline. Table 5.9-1 summarizes the measurement results. These measurements present the ambient noise levels in the project area. The existing noise levels used for projecting future noise conditions with and without the project, as discussed under Impact 5.9-C, were derived using traffic data contained in the Austin-Foust Associates, Inc. May 2008 Traffic Impact Analysis completed for the proposed project.

Table 5.9-1: On-Site Noise Modeling Results (dBA)

Parameter	Property Line	
	Play Area Las Arenas Park	Girl Scout Office/ Tennis Courts
24-Hour CNEL	59	63
Maximum 1-Hour LEQ	63	65
When (?)	3:00 p.m. to 4:00 p.m.	3:00 p.m. to 4:00 p.m.
2nd-Highest Hourly LEQ	60	63
When (?)	11:00 a.m. to 12:00 p.m.	8:00 a.m. to 9:00 a.m.
Minimum 1-Hour LEQ	44	45
When (?)	2:00 p.m. to 3:00 p.m.	2:00 p.m. to 4:00 p.m.
1-Second Maximum	89	91
1-Second Minimum	40	30
Source: Giroux, 2004.		

Vehicular Traffic Noise Levels

Future peak hour traffic noise levels were modeled using the Federal Highway Administration Noise Prediction Model (FHWA-RD-77-108). The model calculates noise levels for varying traffic volumes and speeds. Noise model output worksheets for existing conditions and year 2011 with and without the project are included as Appendix A. Modeling was conducted using data from the Traffic Impact Analysis prepared by Austin-Foust Associates, Inc. in November 2008, included in this EIR as Appendix J.

Recreational Noise Levels

Other noise sources in the project area include recreational activities, including water vehicles. Newport Beach has the largest small boat harbor in Southern California. Thousands of boats operate near noise-sensitive residential uses that border much of Newport Bay. Charter boats generate engine noise and noise from occupants, as well as use loudspeakers or live entertainment. Typical recreational noise includes activities such as league and youth sporting games, as well as recreational rowers in Newport harbor. Types of noise generated from these activities include people shouting and whistles/horns blowing, as well as loudspeakers.

Sensitive Receptors

Sensitive receptors are land uses that are sensitive to increases in ambient noise levels. For purposes of CEQA, the General Plan Noise Element considers a sensitive receptor to be residential uses, public and private educational facilities, hospitals, convalescent homes, day cares, and other facilities that are considered noise sensitive (but are undefined).

Rather than determining a radius from the project site and then counting the number of sensitive receptors within that radius, existing receptors for the project were determined by starting from the

project site and radiating out to determine those closest to the project. This method is preferred because noise impacts would diminish at each further receptor; therefore, the nearest sensitive receptors would generally represent a worst-case scenario related to noise, and further receptors would experience decreased impacts.

The existing site encompasses 10.45 acres and is built-up in nature with residential (i.e., mobile homes) community service (e.g., community center, public tennis courts, beach access, etc.), and surface parking lot uses. However, the existing mobile home and community facilities would be removed prior the construction of the proposed project. Existing sensitive receptors near the project site are summarized in Table 5.9-2.

The closest offsite sensitive receptors are residential land uses located to the south, west, and east of the project site. There are several mobile homes located to the west of the project site across 18th street at an approximate distance of 40 feet from the project boundary. Residences are located along the east side of 15th Street, approximately 75 feet east of the project site. There are also residences located approximately 100 feet south of the project boundary across West Balboa Boulevard. In addition, the project encompasses the public beach on the west side of the project site and there are residences approximately 700 feet across the Bay to the north on Lido Isle. The nearest church to the project site is approximately 320 feet from the southeast corner of the project boundary. Newport Elementary is the closet school to the project site, located approximately 830 feet from the southeast corner of the project boundary. Although there are other sensitive receptors at greater distances from the project site, this assessment identifies the nearest sensitive receptors because they would receive the greatest impact from the onsite project noise. Project buildout would not introduce new sensitive receptors to the project site.

Table 5.9-2: Existing Sensitive Receptors

Receptor	Relationship to Project Site
Mobile home residences along the west side of 18th Avenue	40 feet to the west
Residences along the east side of 15th Street	75 feet to the east
Residences along the south side of West Balboa Boulevard	100 feet to the south
Our Lady of Mount Carmel Catholic Church on West Balboa Boulevard	320 feet to the southeast
Residences across the Bay to the north on Lido Isle	700 feet to the north
Newport Elementary on West Balboa Boulevard	830 feet to the southeast
Source: Michael Brandman Associates, 2008.	

5.9.3 - Regulatory Setting

State Regulatory Agencies

Office of Noise Control Standards

The former California Office of Noise Control has set the land use compatibility noise standards and encouraged local jurisdictions to adopt them. Noise/land use compatibility standards for various classes of land uses are generally expressed in the Noise Element of the General Plan to insure that noise exposure is considered in any development decisions. The State of California has developed a noise and land use compatibility matrix for recommended incorporation into local general plan noise elements. The City of Newport Beach has incorporated specific components of these guidelines into city noise exposure standards as shown in the City of Newport Beach land use compatibility matrix, Exhibit 5.9-1, and the City interior and exterior noise standards, Table 5.9-4 (see below under Local Regulatory Agencies).

Caltrans Vibration Guidance

Construction vibration is regulated in accordance with standards established by the Transportation and Construction-Induced Vibration Guidance Manual, issued by the California Department of Transportation (Caltrans). Table 5.9-3 presents these standards. Transient sources create a single isolated vibration event, such as blasting or drop ball impacts. Continuous/frequent intermittent sources include multiple impacts from pile drivers, the use of vibratory compaction equipment, and other construction equipment that creates vibration other than in single events.

Table 5.9-3: Groundborne Vibration Exposure Standards

Structure and Condition	Maximum Peak Particle Velocity (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic building, ruins, ancient monuments	0.12	0.08
Older residential structures with plaster walls/ceilings	0.50	0.30
New residential structures with gypsum board walls/ceilings	1.00	0.50
Modern industrial/commercial buildings	2.00	0.50
Strongly perceptible	0.90	0.10
Source: California Department of Transportation, 2004.		

Local Regulatory Agencies

City of Newport Beach General Plan

City of Newport Beach noise standards are established in the City of Newport Beach General Plan Noise Element (2006), Table N2, similar to the State of California Office of Noise Control model element guidelines, on which most standards are now based. Exhibit 5.9-1 shows the City of Newport Beach Land Use Compatibility Matrix, which provides the acceptable range of ambient noise levels for residential and open space (park) developments within the City of Newport Beach. In

Table N2 Land Use Noise Compatibility Matrix

Land Use Categories		Community Noise Equivalent Level (CNEL)						
Categories	*Uses*	*<55*	*55–60*	*60–65*	*65–70*	*70–75*	*75–80*	*>80*
Residential	Single Family, Two Family, Multiple Family	A	A	B	C	C	D	D
Residential	Mixed Use	A	A	A	C	C	C	D
Residential	Mobile Home	A	A	B	C	C	D	D
Commercial Regional, District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
Commercial Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theatre	A	A	A	A	B	B	C
Commercial Industrial Institutional	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
Commercial Recreational **Institutional** Civic Center	Amphitheatre, Concert Hall Auditorium, Meeting Hall	B	B	C	C	D	D	D
Commercial Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A	B	B	D	D
Commercial General, Special **Industrial, Institutional**	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
Institutional	Hospital, Church, Library, Schools' Classroom	A	A	B	C	C	D	D
Open Space	Parks	A	A	A	B	C	D	D
Open Space	Golf Course, Cemeteries, Nature Centers Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C
Agriculture	Agriculture	A	A	A	A	A	A	A

SOURCE: Newport Beach, 2006

Zone A: Clearly Compatible—Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Zone B: Normally Compatible**—New construction or development should be undertaken only after detailed analysis of the noise reduction requirements and are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Zone C: Normally Incompatible—New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

Zone D: Clearly Incompatible—New construction or development should generally not be undertaken.

Source: Newport Beach General Plan.

Michael Brandman Associates

Exhibit 5.9-1
Land Use Compatibility Matrix

Newport Beach, no new residential development is allowed in areas of 65 dBA CNEL or greater unless sound levels in outdoor living areas can be attenuated to 65 dBA CNEL or less and interior sound levels (with windows closed) are attenuated to 45 dBA CNEL. The corresponding sound level standard for open space including parks is 70 dBA CNEL.

City of Newport Beach land use compatibility standards generally apply to discretionary actions such as development approval. They are designed to protect various land uses from sources of noise pre-empted from local control such as cars, aircraft, ships, trains, etc. Sources of noise within the jurisdiction of local government are typically regulated by the noise ordinance as part of the municipal code.

Newport Beach Municipal Code

The City of Newport Beach Municipal Code contains the City's Noise Ordinance. The Noise Ordinance identifies Designated Noise Zones for various land uses (Section 10.26.020) with specific numerical noise exposure standards for these different uses (Section 10.26.025 Exterior Noise Standards; Section 10.26.030 Interior Noise Standards). The City of Newport Noise Ordinance Limits are as follows:

Table 5.9-4: City of Newport Beach Noise Standards

Designated Noise Zone	Exterior Noise Standards		Interior Noise Standard	
	7:00 a.m.-10:00 p.m. (dBA)	10:00 p.m.-7:00 a.m. (dBA)	7:00 a.m.-10:00 p.m. (dBA)	10:00 p.m.-7:00 a.m. (dBA)
Noise Zone 1: All single, two- and multiple-family residential properties	55	50	45	40
Noise Zone 2: All commercial properties	65	60	—	—
Noise Zone 3: Residential portions of mixed-use properties	60	50	45	40
Noise Zone 4: Industrial or manufacturing	70	70	—	—
Source: City of Newport Beach Municipal Code, 2008.				

Noise ordinance standards apply to on site noise generation from mechanical equipment, site maintenance, social functions, etc. These standards ensure that sensitive noise receptors are not exposed to excessive noise levels from stationary noise sources, such as heating, ventilation, and air conditioning equipment. Additionally, the noise ordinance states that if the ambient noise level exceeds any of the noise limit categories above, the allowable level should be increased to the value of the ambient level in the appropriate category. If the measurement location is on a boundary between two different noise zones, the lower noise level standard of the adjacent zones shall apply.

Section 10.28.040 of the City of Newport Beach Municipal Code exempts construction activity from noise standards granted they are conducted between 7:00 a.m. and 6:30 p.m. Monday through Friday and between 8:00 a.m. and 6:00 p.m. on Saturdays.

5.9.4 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether noise impacts are significant environmental effects, the following questions are analyzed and evaluated. Would the project result in:

a.) 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?

b.) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c.) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d.) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

e.) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f.) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Thresholds for Substantial Noise Increase

The CEQA Guidelines and the City of Newport Beach General Plan provide no definition of what constitutes a substantial noise increase; however, the California Department of Transportation provides guidance that can be used to define substantial changes in noise levels that may be caused by a project. The thresholds below generally apply to transportation noise that is usually expressed in terms of average noise exposure during a 24-hour period, such as the Day/Night Average Level (L_{dn}) or CNEL. Project-generated increases in noise levels that exceed those outlined in the thresholds below and that affect existing noise sensitive land uses (receptors) are considered substantial and, therefore, would constitute a significant noise impact. The project will create a significant noise-related impact if it would:

- Increase noise levels by 5 dB or more where the existing noise level is less than 65 dB
- Increase noise levels by 3 dB or more where the existing noise level is 65 to 70 dB

On the basis of the City of Newport Beach's normally compatible residential exterior noise threshold of 65 dBA, a noise level increase of 3 dB or more would be considered significant in areas where ambient conditions are greater than 65 dBA.

Groundborne Vibration Thresholds

Groundborne vibration consists of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of groundborne vibration typically cause a nuisance only to people, but at extreme vibration levels, damage to buildings may occur. Although groundborne vibration can be felt outdoors, it is typically an annoyance only indoors, where the associated effects of the shaking of a building can be notable. Groundborne noise is an effect of groundborne vibration and typically only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may consist of the rattling of windows or dishes on shelves.

Peak particle velocity (PPV) relates to the maximum instantaneous peak of the vibration signal and is often used in measuring the magnitude of vibration. Scientific studies have shown that human responses to vibration vary by the source of vibration: continuous or transient. Continuous sources of vibration include construction, while transient sources include truck movements. Generally, the thresholds of perception and annoyance are higher for transient sources than continuous sources.

Based on the structural damage thresholds established in the Caltrans Transportation- and Construction-Induced Vibration Guidance Manual, the proposed project would create a significant vibration impact if it generated groundborne vibration levels on sensitive receptors in excess of 0.5 PPV during construction and 1.0 PPV during operations.

5.9.5 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Noise Levels in Excess of Standards

Impact 5.9-A:	**The project would not result in 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.**

Project-Specific Analysis

This impact discussion analyzes the potential for project construction noise and operational noise to cause noise levels in excess of established City of Newport Beach noise standards. Substantial increases in noise, as determined using guidance issued by Caltrans for substantial noise increases, are analyzed in Impact 5.9-C, Permanent Increase in Ambient Noise Levels.

Noise levels in the project area would be influenced by construction activity in the short term and by traffic, water vehicle, and recreational noise in the long-term.

Short-term Noise

Construction noise represents a short-term increase in ambient noise levels. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, the sensitivity of nearby land uses, and the timing and duration of the construction activities. Section 10.28.040 of the City of Newport Beach Municipal Code exempts construction activity from noise standards granted they are conducted between 7:00 a.m. and 6:30 p.m. Monday through Friday and between 8:00 a.m. and 6:00 p.m. on Saturdays. Therefore, although there are no construction standards for noise generation, all construction activity is required to be conducted in accordance with the City of Newport Beach Municipal Code, and thus construction noise would not expose persons to or generate noise levels in excess of standards.

Long-term Noise

Traffic and recreational noise, including water vehicles, all represent long-term sources of ambient noise in the project area. The land use compatibility guidelines in Exhibit 5.9-1 establish the acceptable range of ambient noise levels for open space park uses within the City of Newport Beach. Noise levels are normally compatible at 65 dB CNEL for residential uses, and normally compatible at 70 dB CNEL for open space uses such as parks. Traffic noise modeling using the traffic data in the traffic report for the project was conducted. The noise modeling was conducted for existing and future (Year 2011) noise levels. As shown in Tables 5.9-6 and 5.9-7, future traffic noise levels would be below 70 dB CNEL at analyzed intersections, which are considered to experience higher noise levels than those at the proposed park. Therefore, implementation of the proposed park would result in less than significant traffic noise impacts.

In addition, noise from water vehicles (vessels) would occur when the vessels run their engines. Since these vessels would be located within the marina, noise levels would be governed by the City's Municipal Code, which has specific allowed noise levels and durations. Vessels would be required to comply with the noise regulations in the City's Municipal Code. The noise regulations for vessels would be enforced by the Harbor Patrol. Therefore, the proposed activities within the marina would result in less than significant noise impacts on adjacent residents.

Cumulative

Short-term construction activities on the project site would result in less than significant noise impacts to adjacent residences. The short-term noise levels of the project would contribute to cumulative noise levels; however, the project's contribution to cumulative noise impacts would be less than cumulatively considerable.

Long-term operational impacts would result in less than significant noise levels on future visitors of the park and onsite uses would be required to comply with existing noise regulations in the City's Municipal Code. The proposed project would contribute to long-term cumulative noise levels; however, this contribution is considered less than cumulatively considerable.

Mitigation Measures

Project-Specific

No mitigation measures are required.

Cumulative

No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific

Less than significant impact.

Cumulative

Less than significant impact.

Excessive Groundborne Vibration

Impact 5.9-B:	**The project would not result in expose persons to or generation of excessive groundborne vibration or groundborne noise levels.**

Project-Specific Analysis

This impact discussion analyzes the potential for short-term construction and long-term operational activities to cause excessive levels of groundborne vibration.

Construction Vibration

Construction activities can produce vibration that may be felt by adjacent uses. The construction of the proposed project would not require the use of equipment such as jackhammers and pile drivers, which are known to generate substantial construction vibration levels. The primary sources of vibration during construction would be from bulldozers, backhoes, crawler tractors, and scrapers. A vibratory roller would produce the greatest amount of vibration on the project site, with a 0.210 PPV at 25 feet. Sensitive receptors in the project area are listed in Table 5.9-2, along with distance from the project site to each sensitive receptor.

Construction activities would include both single vibratory events and periods in which multiple or continuous vibration would occur. Therefore, construction impacts were assessed using the continuous/frequent intermittent structural damage vibration threshold of 0.5 PPV for construction. Table 5.9-5 below provides the estimated construction vibration levels at the residences and other sensitive receptors.

Table 5.9-5: Estimated Construction Vibration Levels

Nearest Sensitive Receptor	Predicted Maximum Peak Particle Velocity (inches/second)	Structural Damage Threshold
Mobile home residences along west side of 18th Avenue	0.26	0.5
Residences along the east side of 15th Street	0.14	0.5
Residences along south side of West Balboa Boulevard	0.105	0.5
Our Lady of Mount Carmel Catholic Church on West Balboa Boulevard	0.033	0.5
Residences across the Bay to the north on Lido Isle	0.015	0.5
Newport Elementary on West Balboa Boulevard	0.013	0.5
Source: Michael Brandman Associates, 2008.		

The maximum vibration that the nearest residential receptor would be expected to experience is 0.26 PPV, which is below the 0.5 PPV significance level for potential structural damage. Therefore, construction-related vibration impacts from the proposed project on existing sensitive receptors would be less than significant.

Operational Vibration

The proposed project would develop a park facility and would not be expected to result in increased vibration during operation. Occasional delivery trucks may operate in the area, but would not result in a perceptible change.

As shown in Table 5.9-5 the discussion of operational vibration, project construction and operation vibration levels would not result in significant impacts.

Cumulative

The proposed Project would result in construction vibration, but would not exceed significance thresholds at the nearest existing residential receptors, and therefore, would not be cumulatively considerable.

Mitigation Measures

Project-Specific

No mitigation measures are required.

Cumulative

No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific

Less than significant impact.

Cumulative

Less than significant impact.

Permanent Increase in Ambient Noise Levels

Impact 5.9-C:	**The project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.**

Project-Specific Analysis

This impact discussion analyzes the potential for a substantial permanent increase in ambient noise levels in the project vicinity associated with operation of the proposed project, including impacts related to offsite vehicular noise and exposure of neighboring land uses to stationary noise.

The ongoing operation of the proposed project would be affected by long-term ambient noise sources. Potential noise impacts associated with the operations of the proposed project are the result of project-generated vehicular traffic on project-vicinity roadways, along with onsite recreational noise impacts.

Recreational Noise

Sources of stationary noise from the project site may include typical recreational noise such as water vehicles, sporting games, children playing and pets. Noise from water vehicles, sporting games, children playing and pets are intermittent noise events and would not represent a substantial contribution to the ambient noise levels. Section 10.26.025, Exterior Noise Standards, contains the allowable levels for daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) periods for residential properties, based on the length [of time] the noise level is sustained (refer to Table 5.9-4). Noise from recreation activities would not be expected to result in noise levels greater than 65 dB. Noise from recreation activities would not expose the future receptors at the project site to substantial noise levels (an increase of 3 dBA), based on Caltrans standards; therefore, impacts would be less than significant. Section 10.26 of the Newport Beach Municipal Code serves as the City's noise ordinance. Therefore, impacts would be less than significant.

Vehicular Noise

Long-term noise impacts would result from vehicle traffic associated with the project. City of Newport Beach noise standards are established in the City of Newport Beach General Plan Noise Element (2006), Table N2, similar to the State of California Office of Noise Control model element guidelines, which on most standards are now based. Exhibit 5.9-1 shows the City of Newport Beach's Land Use Compatibility Matrix.

As shown in Exhibit 5.9-1, the land use compatibility guidelines provide the acceptable range of ambient noise levels for open space parks as well as residential developments within the City of Newport Beach. Exterior noise levels are normally compatible at 65 dB CNEL for residential uses and 70 dB CNEL for open space park uses. Using traffic data contained in the Traffic Impact Analysis, Table 5.9-6 and Table 5.9-7 provide the existing and future noise levels for the year 2011, both with and without the project. These tables show that future noise levels with the project for 2011

would not experience a substantial increase in noise levels of 3 dBA or greater (based on Caltrans standards) when compared with conditions without the project. Therefore, implementation of the project would result in less than significant permanent noise increase impacts.

Table 5.9-6: Existing and Future Traffic Noise Levels (AM Peak Hour)

Roadway Intersection (Distance to Centerline in feet)	Noise Levels (dBA CNEL)				
	Existing Condition	Future Condition (2011)		Project-Related Increase	Potentially Significant Impact?
		Without Project	With Project		
Newport Boulevard at Hospital Road (300)	57.7	57.9	57.9	0	N
Balboa Boulevard/Superior Avenue at Coast Highway (175)	62.3	62.7	62.7	0	N
Newport Boulevard at Coast Highway (375)	56.6	57.0	57.0	0	N
Riverside Avenue at Coast Highway (600)	49.1	49.7	49.7	0	N
Tustin Avenue at Coast Highway (450)	44.1	44.7	44.7	0	N
Newport Boulevard at Via Lido (75)	65.5	65.6	65.6	0	N
Newport Boulevard at 32nd Street (200)	58.1	58.1	58.2	0.1	N
Source: Michael Brandman Associates, 2008.					

Table 5.9-7: Existing and Future Traffic Noise Levels (PM Peak Hour)

Roadway Intersection (Distance to Centerline in feet)	Noise Levels (dBA CNEL)				
	Existing Condition	Future Condition (2011)		Project-Related Increase	Potentially Significant Impact?
		Without Project	With Project		
Newport Boulevard at Hospital Road (300)	57.6	58.0	58.0	0	N
Balboa Boulevard/Superior Avenue at Coast Highway (175)	62.4	63.0	63.0	0	N
Newport Boulevard at Coast Highway (375)	56.9	57.4	57.4	0	N
Riverside Avenue at Coast Highway (600)	49.7	50.3	50.3	0	N
Tustin Avenue at Coast Highway (450)	44.7	45.5	45.5	0	N
Newport Boulevard at Via Lido (75)	66.2	66.3	66.3	0	N
Newport Boulevard at 32nd Street (200)	58.9	58.9	59.0	0.1	N
Source: Michael Brandman Associates, 2008.					

Cumulative

Since the proposed project would increase vehicular traffic noise imperceptibly, the project's contribution to the cumulative noise increase is considered less than cumulatively considerable; therefore, less than significant.

Mitigation Measures

Project-Specific

No mitigation measures are required.

Cumulative

No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific

Less than significant impact.

Cumulative

Less than significant impact.

Temporary or Periodic Increase in Ambient Noise Levels

Impact 5.9-D:	**The project would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.**

Project-Specific Analysis

This impact discussion analyzes the potential for project construction noise to cause a substantial temporary increase in ambient noise levels in the project vicinity.

Construction noise represents a short-term increase in ambient noise levels. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, the sensitivity of nearby land uses, and the timing and duration of the construction activities.

Short-term noise impacts could occur during construction activities either from the noise impacts created from the transport of workers and movement of construction materials to and from the project site, or from the noise generated onsite during demolition, ground clearing, excavation, grading, dredging, and construction activities. Table 5.9-8 lists typical construction equipment noise levels for equipment that would be used during construction of the proposed project. Some non-typical equipment, including pile drivers, excavators, and dredging equipment, would be used for excavation and dredging of material from the marina. Table 5.9-9 lists construction equipment noise levels for excavation and dredging equipment. The marina site is at an elevation of 10 feet and all soil removal down to a mean high tide (set at approximately 5 feet) would be excavated. The remaining soil would be dredged down to an approximate elevation of 30 feet. All excavation would be completed using excavators and dump trucks. All dredging would be completed using a floating barge pulled by a tug

boat. The floating barge would either have a crane with a clamshell or utilize hydraulic dredging equipment. Excavation and dredging would each take approximately 2 months to complete. In order to excavate and dredge the marina, sheet piling and a sea wall would be constructed around the entire marina using jetting and vibrating for the majority of construction and pounding in areas with dense sand. Construction of the sea wall and sheet piling would take approximately six months. Construction activities are carried out in discrete steps, each of which has a unique mix of equipment and, consequently, unique noise characteristics. These sequential phases would change the character of the noise levels surrounding the construction site as work progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise ranges to be categorized by work phase.

Table 5.9-8: Noise Associated with Typical Construction Equipment

Construction Phases	Maximum Noise Levels Measured (dBA at 50 feet)
Grading	89
Backhoe	90
Pneumatic tools	88
Air compressor	86
Crane	83
Plate compactor	89
Concrete vibrator	85
Trucks	87
Source: Federal Transit Agency, 1995.	

Table 5.9-9: Noise Associated with Excavation and Dredging Equipment

Equipment	Typical Noise Levels Measured (dBA at 50 feet)
Excavator	85
Diesel-powered barges	85
Dump Trucks	84
Small clamshell dredge	80
Sheet pile driver	95
Crane	82
Source: Thalheimer 1996.	

On the basis of their proximity to the project site, the residential land uses to the west, east and south of the project site are the sensitive receptors of most concern as they relate to project construction noise. Table 5.9-10 provides the estimated maximum noise levels each existing sensitive receptor would be expected to experience during construction. Note that construction noise often varies

significantly on a day-to-day basis, and the noise levels shown in the table represent a worst-case scenario.

Table 5.9-10: Estimated Construction Noise Levels at Sensitive Receptors

Receptor	Distance and Direction From Project Site (feet)	Maximum Noise Levels (L_{max}, dB)
Mobile home residences along the west side of 18th Avenue, west of the project site	40 feet to the west	92
Residences along the east side of 15th Street, east of the project site	75 feet to the east	87
Residences along the south side of West Balboa Boulevard, south of the project site	100 feet to the south	84
Our Lady of Mount Carmel Catholic Church, located southeast of the project site	320 feet to the southeast	75
Residences across the Bay to the north on Lido Isle.	700 feet to the north	67
Newport Elementary, located southeast of the project site	830 feet to the southeast	66

Notes:
Noise levels based on construction noise at 90 dB measured at 50 feet from project site; assumes a 6-dB reduction for each doubling of distance. Noise levels in this table depict peak levels and do not predict the 24-hour weighted average (CNEL).
This table does not include pile driving associated with excavating and dredging of the marina.
Source: Michael Brandman Associates, 2008.

Maximum construction noise levels are estimated to be 92 dB at the mobile home residences along the west side of 18th Avenue, west of the project site; 87 dB at the residences along the east side of 15th Street, east of the project site; 84 dB at the residences along the south side of West Balboa Boulevard, south of the project site; 75 dB at Our Lady of Mount Carmel Catholic Church, located southeast of the project site; 67 dB at the residences across the Bay to the north on Lido Isle; and 66 dB at Newport Elementary, located southeast of the project site.

As stated above, these noise levels would be worst-case. Noise levels would vary depending on the type and duration of the construction equipment. Construction noise levels would occur for limited times when construction is performed near the site boundary. Construction activities will be performed in accordance with the City's Municipal Code noise regulations that sets the times during the day that construction activities are allowed. Adherences to the City's Municipal Code would reduce the project's potential temporary noise impact, however, temporary ambient noises due to construction are still considered potentially significant.

Cumulative

Construction noise would result in temporary increases in ambient noise levels. The project's contribution to cumulative temporary noise impacts is considered less than cumulatively considerable, therefore less than significant.

Mitigation Measures

Project-Specific

MM-5.9-D.1 The construction contractor shall ensure that all construction equipment on-site is properly maintained and tuned to minimize noise emissions.

MM-5.9-D.2 The construction contractor shall ensure that construction equipment is fit with properly operating mufflers, air intake silencers, and engine shrouds no less effective than as originally equipped by the manufacturer.

MM-5.9-D.3 The construction contractor shall locate all stationary noise sources (e.g., generators, compressors, staging areas) as far from residential and recreational receptor locations as is feasible.

MM-5.9-D.4 Material delivery, soil haul trucks, equipment servicing, and construction activities shall be restricted to the hours set forth in the City of Newport Beach Municipal Code, Section 10.28.040.

Cumulative

No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific

Less than significant impact.

Cumulative

Less than significant impact.

Airport Noise Levels

Impact 5.9-E:	**For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would not expose people residing or working in the project area to excessive noise levels.**

Project-Specific Analysis

This impact discussion analyzes the potential for nearby airports to expose people residing or working in the project area to excessive noise levels.

The nearest airport to the Marina Park site is the John Wayne Airport. This airport is approximately 6.8 miles from the project site. Noise from aircraft activity is not a primary source of noise in the project area. There are no other airports in the project vicinity.

Based on distance to nearby airports, and the expected noise level from those facilities, aircraft noise would not result in excessive noise at the project site, and therefore, there would be no aircraft noise impacts.

Cumulative

Based on distance to nearby airports, and the expected noise level from those facilities, aircraft noise would not result in excessive noise at the project site. Therefore, there would be no cumulative aircraft noise impacts.

Mitigation Measures

Project-Specific

No mitigation measures are required.

Cumulative

No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific

No impact.

Cumulative

No impact.

Private Airstrip Noise Levels

Impact 5.9-F:	**For a project within the vicinity of a private airstrip, the project would not expose people residing or working in the project area to excessive noise levels.**

Project-Specific Analysis

This impact discussion analyzes the potential for nearby private airstrips to expose people residing or working in the project area to excessive noise levels.

There are no private airstrips in the project vicinity. Therefore, aircraft noise would not result in excessive noise at the project site. Therefore, there would be no aircraft noise impacts.

Cumulative

There are no private airstrips in the Project vicinity, thus there would be no cumulatively considerable impacts.

Mitigation Measures

Project-Specific

No mitigation measures are required.

Cumulative

No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific

No impact.

Cumulative

No impact.