

## Introduction

This section identifies and evaluates issues related to noise. The analysis is based on the report entitled “Mare Island Dredged Material Disposal Ponds Project Technical Report: Environmental Noise Impact Analysis” prepared by Wilson Ihrig Associates (WIA) dated June 22, 2005. A copy of this report is provided in Appendix L.

The “Affected Environment” discussion below describes the current setting of the action area. The purpose of this information is to establish the existing environmental context, or background, against which the reader can then understand the environmental changes caused by the action. The environmental setting information is intended to be directly or indirectly relevant to the subsequent discussion of impacts. For example, the setting identifies nearby *noise-sensitive land uses* because the action could increase noise levels in the area and affect these uses.

The environmental changes associated with the action are discussed under “Environmental Consequences.” This section identifies impacts, describes how they would occur, and prescribes mitigation measures to reduce significant impacts where feasible.

## Affected Environment

### Environmental Setting

#### Terminology

Noise terms used in this chapter are briefly defined below (see Appendix L for more background information on acoustics).

- *Sound* is a vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of

being detected by a receiving mechanism, such as the human ear or a microphone.

- *Noise* is sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- The *decibel (dB)* is a unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-Pascals.
- The *A-weighted decibel (dBA)* represents an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- *Maximum sound level ( $L_{max}$ )* is the maximum sound level measured during the measurement period.
- *Minimum sound level ( $L_{min}$ )* is the minimum sound level measured during the measurement period.
- *Equivalent sound level ( $L_{eq}$ )* is the equivalent steady-state sound level that, in a stated period of time, would contain the same acoustical energy.
- *Percentile-exceeded sound level ( $L_{xx}$ )* is the sound level exceeded “x” percent of a specific time period. For example,  $L_{10}$  is the sound level exceeded 10 percent of the time.
- *Day-night level ( $L_{dn}$ )* is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m.
- *Community noise equivalent level (CNEL)* is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m.

$L_{dn}$  and CNEL values rarely differ by more than 1 dB. As a matter of practice,  $L_{dn}$  and CNEL values are considered to be equivalent and are treated as such in this assessment. In general, human sound perception is such that a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level.

## Existing Noise Environment

The study area for noise issues includes the action area and surrounding communities.

## Noise-Sensitive Land Uses

Noise-sensitive land uses are land uses where people reside or where noise could adversely affect the use of the area. Noise sensitive land uses typically include

residences, healthcare facilities, and some types of recreational areas. Noise-sensitive land uses that have been examined in this analysis are the following.

1. The proposed Regional Park at the south end of Mare Island.
2. The existing golf course on the south end of Mare Island.
3. Coral Sea Village (proposed residential development on Mare Island).
4. Farragut Village (residential developed under construction on Mare Island).
5. The existing Sandy Beach residential community (on unincorporated land on the east side of Mare Island Strait).

These land uses are shown on Figures 3.1-1 and 3.4-1.

## Existing Noise Conditions

Current primary noise sources near Piers 34 and 35 are the daily San Francisco ferries, commercial shipping vessels, other vessel traffic, the refineries on the south side of Carquinez Strait, and occasional aircraft overflights.

The current primary noise sources near the disposal ponds are dump trucks, bulldozers, graders, and other large equipment associated with the remediation of the H-1 landfill and construction of Farragut Village and Coral Sea Village housing complexes. The firing ranges are not currently used and are presently being removed by the Navy.

Application of City noise compatibility criteria (discussed below) requires knowledge of the existing  $L_{dn}$  in the receptor location. To obtain  $L_{dn}$  values in the project area, WIA deployed three logging sound level meters from Saturday, April 23, 2005, through Thursday, April 28, 2005. Special 9-inch diameter wind screens were used to eliminate erroneous noise that could otherwise be generated by the high winds in the area. The measurements were A-weighted and used the “slow” meter response. The sound level meters were calibrated with a National Institute of Standards and Technology (NIST)-traceable calibration tone immediately prior to deployment. The sound level meters monitored noise levels continuously and calculated and stored the hourly equivalent ( $L_{eq}$ ) levels for all 24 hours of each day. The day-night average noise level ( $L_{dn}$ ) was calculated from the 24  $L_{eq}$  values.

Two meters were deployed on Sandy Beach Road; both were hung from public utility poles approximately 15 feet above the ground and more than 4 feet from the nearest wall or any other reflecting surface. One meter was hung near #2 Sandy Beach Road, very near the point at which the road turns after the long downhill portion and the closest residence to Mare Island, and the other near #12 Sandy Beach Road. Six of the 288 measured hourly  $L_{eq}$  were adjusted to account for interference from rain; the adjustments all served to lower the existing  $L_{dn}$ . After the adjustments, the standard deviation over the six days was less than 1 dBA. The average  $L_{dn}$  near #2 Sandy Beach Road was 58 dBA, and the average near #12 Sandy Beach Road was 55 dBA. For the purposes of

assessing Policy 2c Criteria and Solano County criteria, 57  $L_{dn}$  and 57 CNEL (the average of the two measurements) were used as the existing ambient noise level for Sandy Beach community.

One meter was deployed on a gate fence post between Ponds 4M and 4N to estimate the ambient noise levels for Coral Sea Village and Farragut Village. The measurement location was due west of Farragut Village. Representative noise measurements could not be made near Farragut Village because it is currently under construction. After adjusting two of the 144 hours measured for rain, the average  $L_{dn}$  at the ponds was 47 dBA with a standard deviation of 2 dBA. Because the future residents of the Villages will themselves generate noise, 7 dBA was added to the measured value for a projected future  $L_{dn}$  of 54 dBA. This value is 3 dB less than the measured  $L_{dn}$  at Sandy Beach, so this value is reasonable and probably conservative for a residential area.

## Regulatory Setting

### Federal Regulations and Guidelines

There are no federal noise regulations that apply to the proposed action.

### State Regulations and Guidelines

There are no state noise regulations that apply to the proposed action.

### Local Regulations and Guidelines

Noise standards in the City of Vallejo General Plan noise element and municipal code (noise ordinance) apply to the proposed project. The Solano County noise guidelines were also considered because Sandy Beach (a sensitive noise receptor) is outside the Vallejo city limits. The following is a summary of applicable parts of these community noise standards.

#### City of Vallejo General Plan Noise Element

Policy 2 of the City of Vallejo Noise Element stipulates the community norms for limiting noise from new development:

**Policy 2:** Avoid adverse effects of noise-producing activities on existing land uses by implementing noise reduction measures, limiting hours of operation, or by limiting increases in noise.

**2a.** Continue to enforce the noise regulations within the Vallejo Municipal Code, including Chapter 7.84 “Regulation of Noise Disturbances” and Chapter 16.72 “Performance Standards Regulations”.

**2b.** Where appropriate, limit noise generating activities (for example, construction and maintenance activities and loading and unloading activities) to the hours of 7:00 a.m. to 9:00 p.m.

**2c.** When approving new development limit project-related noise increases to no more than 10 dB in non-residential areas and 5 dB in residential areas where the with-project noise level is less than the maximum “normally acceptable” level in Table 2 (in the noise element). Limit project-related increases in all areas to no more than 3 dB where the with-project noise level exceeds the “normally acceptable” level in Table 2 (in the noise element).

Table 2 in the noise element indicates that the Maximum Normally Acceptable Level for Residential development is 60 Ldn (dBA) and for Parks and Golf Courses is 70 Ldn (dBA).

## City of Vallejo Noise Ordinance

Sections 7.84 and 16.72 of the City of Vallejo municipal code (noise ordinance) are applicable to the proposed project.

### **7.84.010 General prohibition – Loud unnecessary and unusual noise.**

Notwithstanding any other provisions of the Vallejo Municipal Code and in addition thereto, it shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary, and unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area. The standard which may be considered in determining whether a violation of the provisions of this chapter exist may include, but not be limited to, the following:

- A. The level of noise;
- B. Whether the nature of the noise is usual or unusual;
- C. Whether the origin of the noise is natural or unnatural;
- D. The level and intensity of the background noise, if any;
- E. The proximity of the noise to residential sleeping facilities;
- F. The nature and zoning of the area within which the noise emanates;

- G. The density of the inhabitation of the area within which the noise emanates;
- H. The time of the day and night the noise occurs;
- I. The duration of the noise;
- J. Whether the noise is recurrent, intermittent, or constant; and
- K. Whether the noise is produced by a commercial or noncommercial activity.

#### **7.84.020 Specific prohibitions.**

In addition to and separate from the prohibition set forth in Section 7.84.010 above, the following acts, and the causing or permitting thereof, are hereby declared to be in violation of this ordinance. As used in this section, the term "noise disturbance" means any sound which (1) endangers or injures the safety or health of humans or animals; (2) annoys or disturbs a reasonable person of normal sensitiveness; or (3) endangers or injures personal or real property. The listing of specific prohibited activities in this section is not intended to limit the city's authority to regulate any and all loud, unnecessary and unusual noise pursuant to Section 7.84.010. Any noise not falling within the specific prohibitions set forth in this section is subject to regulation under the provisions of Section 7.84.010 above.

F. Loading and Unloading. It shall be unlawful to load, unload, open, close, or to do other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of nine p.m. and seven a.m. in such a manner as to cause a noise disturbance across a residential real property boundary. This subsection shall not apply to the collection and disposal of garbage and recyclable materials by the city's franchises.

#### **16.72.030 Noise performance standards.**

No land use shall generate sound exceeding the maximum levels permitted in the following table when such sounds are measured in any of the zoning districts listed in this table:

Zoning District	Maximum Sound Pressure Level in Decibels
Resource Conservation, Rural Residential, and Medical Districts	55
Low, Medium, and High Density Residential Districts	60
Professional Offices, Neighborhood, Pedestrian, and Waterfront Shopping and Services Districts	70
Freeway Shopping and Service, Linear Commercial and Intensive Use Districts	75

**16.72.040 Noise performance standards – Correction factors.**

The following correction factors, when applicable, shall be applied to the maximum sound pressure levels given in Section 16.72.030:

Time and Operation of Type of Noise	Correction in Maximum Permitted Decibels
Emission only between 7 a.m. and 10 p.m.	Plus 5
Noise of unusual impulsive character such as hammering or drill pressing	Minus 5
Noise of unusual periodic character such as hammering or screeching	Minus 5

**16.72.050 Noise performance standards – Exceptions.**

The following sounds, upon compliance with state conditions, may exceed the maximum sound pressure levels given in Section 16.72.030:

- C. Sounds from transportation equipment used exclusively in the movement of goods and people to and from a given premises, temporary construction or demolition work;

Although construction noise is exempt from the City’s noise ordinance standards, the City’s standard conditions of approval for a site development permit require that construction be limited to the hours between 7:00 a.m. and 6:00 p.m.

**Solano County General Plan Noise Element**

Because the Sandy Beach community is located in unincorporated Solano County, community noise standards in the Solano County general plan are provided for informational purposes only.

**Policy 4** in the noise element relates to the proposed project and states the following:

The introduction of any fixed point, permanent, non-residential, noise-emitting land use (industrial, commercial, public, etc.) shall be prohibited if the projected noise emission level will exceed one or more of the following:

- a. 50 dBA CNEL as measured at the boundary of a nearby residential zone.
- b. 60 dBA CNEL as measured at the boundary of a nearby commercial zone, business zone (personal service, offices), or noise-sensitive industrial or manufacturing zone (research, communications, etc).

The noise element also identifies maximum allowable noise levels from construction equipment. The maximum allowable noise levels vary by equipment type and are in the range of 75 to 80 dBA for most equipment and as high as 95 dB for pile driving equipment.

## Environmental Consequences

### Standards for Determining Significance under NEPA

The criteria used for determining significance under NEPA are the same as those for CEQA, as described below.

### Criteria for Determining Significance under CEQA

According to the State CEQA Guidelines, a project may have a significant environmental effect if it would

- expose people to noise levels exceeding established standards,
- expose people to excessive ground-borne vibration,
- substantially increase ambient noise (temporary, periodic, or permanent), or
- expose people to excessive noise near a public-use airport or private airstrip.

The following significance thresholds have been developed based on the CEQA guidelines and noise standards in the City of Vallejo noise ordinance, ~~and~~ City of Vallejo General Plan noise element, and construction noise guidance from the U.S. Department of Transportation (FTA 1995). The proposed action is considered to result in a significant noise impact if any of the following circumstances occur.

- Noise from construction activities exceeds 60 dBA at residences between the hours of 10:00 p.m. and 7:00 a.m. This threshold is based on City of Vallejo General Plan Noise Element Policy 2b, which states that, where appropriate, the City will limit noise-generating activities (i.e. construction and operation activities) to the hours of 7:00 a.m. to 9:00 p.m. The threshold of 60 dBA for nighttime work is based on the City's noise ordinance standard. Although construction is exempt from the noise ordinance, this is a reasonable threshold to apply to nighttime construction work.
- Noise from construction activities would exceed 90 dBA at residences between the hours of 7:00 a.m. and 6:00 p.m. (90 dBA is the daytime noise limit for residences recommended by the U.S. Department of Transportation [FTA 1995]).
- Noise from project operations would exceed noise performance standards in the City of Vallejo noise ordinance; specifically if noise from project operations would exceed 65 dBA (7:00 a.m. to 10:00 p.m.) or 60 dBA (10:00 p.m. to 7:00 a.m.) at residences; or if noise from project operations would exceed 75 dBA (7:00 a.m. to 10:00 p.m.) at the regional park or golf course. (Although the noise ordinance does not specify limits for the golf course and park, application of a limit 10 dB higher than the residential standard is reasonable, based on the difference between residential and park standards in the general plan noise element). Because the park and golf course would be closed at night, no nighttime standard is applied to these areas.
- Noise from project operations would increase the  $L_{dn}$  value at residences in the City by more than 5 dB where the with-project noise level is 60  $L_{dn}$  or less.
- Noise from project operations would increase the  $L_{dn}$  value at residences in the City by more than 3 dB where the with-project noise level is greater than 60  $L_{dn}$ .
- Noise from project operations would increase the  $L_{dn}$  value at park or recreation area in the City by more than 10 dB where the with-project noise level is 70  $L_{dn}$  or less.
- Noise from the project would increase the  $L_{dn}$  value at a park or recreation area in the City by more than 3 dB where the with-project noise level is greater than 70  $L_{dn}$ .

## Methods and Assumptions for the Effect Analysis

Noise effects associated with implementation of project alternatives were evaluated by calculating predicted noise levels at noise-sensitive land uses and then comparing predicted noise levels to the significance thresholds defined above.

## Effects

### Effect 3.7-1: Exposure of Noise-Sensitive Land Use to Noise from Construction Activities

Under each of the three action alternatives, construction activities related to raising levees would occur. This activity could take place as close as 150 feet from residences in Coral Sea Village (proposed development) and Farragut Village (currently under construction).

The following equipment is anticipated to be used during construction:

- three bulldozers,
- one backhoe/loader,
- seven scrapers,
- three sheep’s foot rollers,
- one water truck, and
- one pickup truck.

Table 3.7-1 summarizes typical noise levels produced by this equipment.

**Table 3.7-1.** Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level 50 ft from Source (dBA)
Backhoe	80
Bulldozer	85
Loader	85
Roller	74
Scraper	89
Truck	88

Source: Federal Transit Administration 1995.

A reasonable worst-case assumption is that the three loudest pieces of equipment (truck, scraper, and bulldozer) would operate at the same time in the same area. The combined sound level of these three pieces of equipment is 92 dBA at 50 feet. Using an attenuation rate of 6 dB per doubling of distance construction noise at the nearest residences (150 feet from source) could be as high as 82 dBA. Because the Sandy Beach community is more than 1,800 feet from any potential construction activities, noise from construction is predicted to be less than 65 dBA.

### **No Action**

Under the No Action Alternative, there would be no levee construction and therefore no noise effects from construction. No mitigation is required.

### **Alternatives 1, 2 and 3**

Under Alternatives 1, 2, and 3, construction could generate noise levels as high as 82 dBA at Farragut Village and Coral Sea Village. At Sandy Beach, construction noise is predicted to be less than 65 dBA. Because the City's standard conditions of approval for a site development permit require that construction be limited to the hours between 7:00 a.m. and 6:00 p.m. and because construction noise during daytime hours is not predicted to exceed 90 dBA, this impact is considered less than significant. No mitigation is required.

## **Effect 3.7-2: Exposure of Noise-Sensitive Land Uses to Noise from Routine Operations**

The proposed project would provide facilities for dredging contractors operating in San Francisco Bay and the Sacramento River Delta to dispose of dredged materials. Under all three alternatives, the primary means of unloading for large loads would be a stationary, hydraulic off-loader near Pier 35 on Mare Island. The dredged material slurry would then be pumped from barges to Ponds 2 and 4 through a fixed pipeline. A secondary means of unloading for smaller loads would use a crane to scoop material from a barge into dump trucks on Pier 34. The trucks would then dump the material in Pond 7 where it would be spread using a bulldozer. Under Alternative 3, material off-loaded on to trucks from Pier 34 would not be delivered to Pond 7 but rather to Ponds 2 and 4.

This analysis assesses the potential noise impacts from the following operations associated with the proposed project alternatives.

### **Alternatives 1 and 2:**

- Mechanically off-loading material at Pier 34.
- Mechanically dumping and spreading material at Pond 7.
- Hydraulically off-loading material near Pier 35.
- Spreading material at Ponds 2 and 4.
- Ditching at Ponds 2 and 4.

**Alternative 3:**

- Mechanically off-loading material at Pier 34.
- Hydraulically off-loading material near Pier 35.
- Spreading material at Ponds 2 and 4.
- Ditching at Ponds 2 and 4.
- Trucking material to Pond 2 and 4.
- Dumping and spreading material in Ponds 2 and 4.

The following is a discussion of noise level calculations for each of these operations. Refer to Appendix L for detailed information on the noise modeling methodology.

***Mechanical Off-Loading at Pier 34***

For this operation, one to three barges per day would be brought to Pier 34 using a harbor tug. There would be no need for a generator on the tug, nor would a public address system be used. The material on the barges would be off-loaded onto dump trucks at the end of the pier using a 50-ton movable crane located either on the barge or on the pier. Only one truck would be on the pier at a time. It would take approximately 5 minutes to load a single dump truck, during which time its engine will be at idle. Once a truck is full, it would back off the pier and another truck would drive onto the pier. Because of the logistics of moving trucks on and off the pier, only two trucks would be present at a time, and both would be idling except when driving on or off the pier.

Because of the potential disturbance that typical back-up alarms could cause at the Sandy Beach community during the nighttime hours, flagmen would be used in lieu of back-up alarms ~~during the hours of 10 PM to 7 AM~~ **after dark**. The activities of flagmen are assumed not to make any noise for the purposes of this analysis.

Other noise sources would include a small workboat to deploy and retrieve a silt curtain and pneumatic, hand-held tools to work on the machinery when necessary. Neither of these is expected to have high utilization rates. Finally, a small, 6.5 HP generator would be used during the nighttime hours to power a light on the pier.

The nearest receptor to Pier 34 is the proposed Regional Park, which actually includes the pier. During off-loading, access to the piers, roadways, and south shoreline would be restricted. Most of the other portions of the proposed park would be shielded from Pier 34 noise by the high bluff. However, there is one spot along Imhoff Road from which Pier 34 is visible. This location, which is approximately 1,200 feet from the pier, has been used for this analysis because the lack of shielding makes it a reasonable “worst case” location. Sandy Beach is the closest residential area and has a clear view of Pier 34 (and thus is not acoustically shielded from Pier 34). Coral Sea Village, Farragut Village, and the golf course are all shielded by the bluff and are much further away.

Off-loading at Pier 34 is expected to occur an average of 25 ~~44~~ and up to 90 ~~50~~ days per year. Only small projects would be off-loaded at Pier 34. If a hydraulic off-loader is available near Pier 35 when material from these small projects arrive, hydraulic off-loading near Pier 35 would be used instead of mechanical off-loading at Pier 34. Accordingly, there is a very low probability that both Piers 34 and 35 would be used simultaneously.

#### ***Mechanical Dumping and Spreading at Pond 7 (Material from Pier 34 Only)***

Under Alternatives 1 and 2, material that is mechanically off-loaded onto dump trucks at Pier 34 would be dumped and spread in Pond 7 at the southern end of Mare Island. Three trucks at most are expected to be in the area at any give time, and their loads would be distributed in Pond 7 by a bulldozer.

The golf course, Coral Sea Village, and Farragut Village are all shielded from Pond 7 by terrain. Sandy Beach and parts of the Regional Park have direct line of sight to the pond.

#### ***Hydraulic Off-Loading at Pier 35***

For this operation, one to three barges per day would be brought to Pier 35 using a harbor tug. A diesel or electric 2,500-HP off-loader would be used to pump the slurried material off the barge and along a fixed pipeline to Ponds 2 and 4. A small work boat would be used to lay and inspect floating pipeline, and a 500-HP diesel generator would be used to provide auxiliary power, and 6.5-HP generator for lighting. A second 1,000-HP electric-powered booster pump would be located near Ponds 2S and 4S, but this would be entirely contained within a building or other equivalent shielding.

Parts of the Regional Park have a clear view of Pier 35 operations, but Sandy Beach, the golf course, Coral Sea Village, and Farragut Village do not.

#### ***Spreading at Ponds 2 and 4***

The dredged material slurry would be discharged into Ponds 2 and 4 in either the southwest or southeast corners. Most of the slurry is expected to flow easily across the entire pond, but some of the heavier material would accumulate near the outlet of the pipeline. Occasionally, this material would have to be spread around the area with a bulldozer. Spreading would take about 2 hours on the days it is done, approximately once a week during off-loading. Because the bulldozer would move around the ponds as it is spreading the slurry, the representative distance between the bulldozer and receivers is measured from the center of the nearest pond.

All receptors except Sandy Beach have line of sight to the spreading operation at Ponds 2 and 4.

Once per year, the bottom of the ponds would be plowed to remove any vegetation growing in the ponds. This operation would create noise levels similar to the spreading operation.

***Ditching at Ponds 2 and 4***

To allow the slurry water to flow out of the settling slurry, a ditch would be dug around the entire inside perimeters of the levees around Ponds 2 and 4. Once dug, maintenance digging would occur about 5 days per month. All digging would be done with a drag line, which is similar to a crane. Because the drag line equipment would move around the entire ponds, the representative distance between the drag line and receivers is measured from the center of the nearest pond.

All receptors except Sandy Beach would have line of sight to the ditching operation and Ponds 2 and 4.

***Trucking Material to Ponds 2 and 4***

Under Alternative 3, material off-loaded at Pier 34 would be trucked to Ponds 2 and 4. The preferred route would be Tyler Road to Ribeiro Road, but Ribeiro Road cannot be used at night or during breeding seasons to protect the salt marsh harvest mouse and other species. The alternative route uses Charlton and Meginnis Roads, which are much closer to the proposed Regional Park, existing golf course, and proposed Coral Village. The Charlton and Meginnis route has been used for this analysis.

All of the receptors on Mare Island would have line of sight to some part of the trucking route. The truck noise at Sandy Beach would be the same as that analyzed for mechanical off-loading at Pier 34.

***Dumping and Spreading Material in Ponds 2 and 4 (Alternative 3)***

Under Alternative 3, trucked material from Pier 34 would be dumped into Ponds 2 and 4 and subsequently spread around that area. Back-up alarms would only be used during the daytime; flagmen would be utilized after dark ~~at night~~. The existing ambient sound level in the Park area and the Golf Course has not been measured. It is assumed to be the same as that measured in the marsh area, which is a conservative assumption.

All of the receptors on Mare Island would have line of sight to the dumping and spreading operations. Sandy Beach residents would not because of the bluff.

***Noise Impact Assessment Summary***

Table 3.7-2 presents the estimated hourly  $L_{eq}$  noise levels for the operations analyzed and assesses the potential noise impact against the City's noise ordinance Section 16.72 criteria. Table 3.7-3 presents the estimated  $L_{dn}$  noise levels for the operations analyzed and assesses the potential noise impact against the City's General Plan noise element Policy 2c Criteria. For the purposes of comparison to the Solano County noise standard expressed in terms of CNEL, CNEL values can be assumed to be the same as the  $L_{dn}$  values reported in Table 3.7-3.

***No Action***

Under the No Action scenario, there would be no change in noise level in the area surrounding the action area. There would be no effect. No mitigation is required.

**Table 3.7-2.** Hourly L<sub>eq</sub> Noise Impact Assessment

Operation	Receptor	Estimated Hourly L <sub>eq</sub>	Section 16.72 Criteria	Exceed?
Mechanical Off-Loading at Pier 34	Sandy Beach	<u>54</u> <del>54</del> dBA	Daytime: 65 dBA	No
		<del>50</del> dBA	<del>Nighttime: 60 dBA</del>	<del>No</del>
	Coral Sea Village	37 dBA	Daytime: 65 dBA	No
		<del>36</del> dBA	<del>Nighttime: 60 dBA</del>	<del>No</del>
	Farragut Village	35 dBA	Daytime: 65 dBA	No
		<del>35</del> dBA	<del>Nighttime: 60 dBA</del>	<del>No</del>
Golf Course	42 dBA	Daytime: 75 dBA	No	
Regional Park	58 dBA	Daytime: 75 dBA	No	
Dumping and Spreading at Pond 7	Sandy Beach	<u>45</u> <del>44</del> dBA	Daytime: 65 dBA	No
			Nighttime: 60 dBA	No
	Coral Sea Village	44 dBA	Daytime: 65 dBA	No
			Nighttime: 60 dBA	No
	Farragut Village	39 dBA	Daytime: 65 dBA	No
			Nighttime: 60 dBA	No
Golf Course	57 dBA	Daytime: 75 dBA	No	
Regional Park	51 dBA	Daytime: 75 dBA	No	
Hydraulic Off-Loading near Pier 35	Sandy Beach	<u>38</u> <del>33</del> dBA	Daytime: 65 dBA	No
			Nighttime: 60 dBA	No
	Coral Sea Village	35 dBA	Daytime: 65 dBA	No
			Nighttime: 60 dBA	No
	Farragut Village	32 dBA	Daytime: 65 dBA	No
			Nighttime: 60 dBA	No
Golf Course	40 dBA	Daytime: 75 dBA	No	
Regional Park	58 dBA	Daytime: 75 dBA	No	
Spreading at Ponds 2 and 4 (Daytime Only)	Sandy Beach	<u>29</u> <del>24</del> dBA	Daytime: 65 dBA	No
	Coral Sea Village	52 dBA	Daytime: 65 dBA	No
	Farragut Village	55 dBA	Daytime: 65 dBA	No
	Golf Course	45 dBA	Daytime: 75 dBA	No
	Regional Park	45 dBA	Daytime: 75 dBA	No
Ditching at Ponds 2 and 4 (Daytime Only)	Sandy Beach	<u>30</u> <del>25</del> dBA	Daytime: 65 dBA	No
	Coral Sea Village	54 dBA	Daytime: 65 dBA	No
	Farragut Village	56 dBA	Daytime: 65 dBA	No
	Golf Course	46 dBA	Daytime: 75 dBA	No

Operation	Receptor	Estimated Hourly L <sub>eq</sub>	Section 16.72 Criteria	Exceed?
	Regional Park	46 dBA	Daytime: 75 dBA	No
Trucking Material to Ponds 2 and 4 (Alternative 3)	Sandy Beach	(Covered under Off-Loading at Pier 34)		
	Coral Sea Village	62 dBA	Daytime: 65 dBA	No
			Nighttime: 60 dBA	Yes
	Farragut Village	50 dBA	Daytime: 65 dBA	No
			Nighttime: 60 dBA	No
	Regional Park	62 dBA	Daytime: 75 dBA	No
Dumping and Spreading Material at Ponds 2 and 4 (Alternative 3)	Sandy Beach	<del>35</del> 39 dBA	Daytime: 65 dBA	No
		29 dBA	Nighttime: 60 dBA	No
	Coral Sea Village	53 dBA	Daytime: 65 dBA	No
		53 dBA	Nighttime: 60 dBA	No
	Farragut Village	50 dBA	Daytime: 65 dBA	No
		49 dBA	Nighttime: 60 dBA	No
	Golf Course	52 dBA	Daytime: 75 dBA	No
	Regional Park	52 dBA	Daytime: 75 dBA	No

Note: This information is based on the environmental noise impact analysis prepared for the proposed project by Wilson Ihrig Associates (WIA) dated June 22, 2005. Refer to Appendix L, Mare Island Dredged Material Disposal Ponds Project Technical Report: Environmental Noise Impact Analysis (EIS/EIR, Volume II, Appendices). WIA performed supplemental analysis to reflect the restricted hours of operation for mechanical off-loading, which would occur between 7:00 a.m. and 9:00 p.m. Refer to Chapter 4, Additional Information in Final EIS/EIR, Volume IV, Comments and Responses.

**Table 3.7-3.** L<sub>dn</sub> Noise Impact Assessment

Operation	Receptor	L <sub>dn</sub> (dBA)				Policy 2c Criteria	Exceed?
		Project	Existing	Total	Increase		
Mechanical Off-Loading at Pier 34	Sandy Beach	<del>52</del> 57	57	<del>58</del> 60	<del>1</del> 3	5 dBA	No
	Coral Sea Village	<del>34</del> 43	54	54	0	5 dBA	No
	Farragut Village	<del>33</del> 44	54	54	0	5 dBA	No
	Golf Course	40	47	48	1	10 dBA	No
	Regional Park	56	47	<del>56</del> 57	<del>9</del> 10	10 dBA	No
Dumping & Distributing at Pond 7 <del>Pier 34</del>	Sandy Beach	<del>43</del> 47	57	57	0	5 dBA	No
	Coral Sea Village	<del>42</del> 50	54	<del>54</del> 56	<del>0</del> 2	5 dBA	No
	Farragut Village	<del>37</del> 45	54	<del>54</del> 55	<del>0</del> 1	5 dBA	No
	Golf Course	<del>54</del> 55	47	55	8	10 dBA	No
	Regional Park	<del>48</del> 49	47	51	4	10 dBA	No
Hydraulic Off-Loading at Pier 35	Sandy Beach	<del>44</del> 40	57	57	0	5 dBA	No
	Coral Sea Village	41	54	54	0	5 dBA	No
	Farragut Village	38	54	54	0	5 dBA	No
	Golf Course	38	47	48	1	10 dBA	No
	Regional Park	56	47	57	10	10 dBA	No
Spreading at Ponds 2 & 4 (Daytime)	Sandy Beach	<del>27</del> 22	57	57	0	5 dBA	No
	Coral Sea Village	50	54	56	2	5 dBA	No
	Farragut Village	53	54	57	3	5 dBA	No
	Golf Course	42	47	48	1	10 dBA	No
	Regional Park	43	47	48	1	10 dBA	No
Ditching at Ponds 2 & 4 (Daytime)	Sandy Beach	<del>28</del> 23	57	57	0	5 dBA	No
	Coral Sea Village	51	54	56	2	5 dBA	No
	Farragut Village	54	54	57	3	5 dBA	No
	Golf Course	44	47	49	2	10 dBA	No
	Regional Park	44	47	49	2	10 dBA	No
Trucking to Ponds 2S (Alt. 3)	Sandy Beach	(Covered under Off-Loading at Pier 34)					
	Coral Sea Village	<del>60</del> 68	54	<del>61</del> 69	<del>7</del> 15	5 dBA	Yes
	Farragut Village	<del>48</del> 56	54	<del>55</del> 58	<del>1</del> 4	5 dBA	No
	Golf Course	59	47	59	12	10 dBA	Yes
	Regional Park	60	47	60	13	10 dBA	Yes

Operation	Receptor	L <sub>dn</sub> (dBA)				Policy 2c Criteria	Exceed?
		Project	Existing	Total	Increase		
Dumping & Spreading at Ponds 2S (Alt. 3)	Sandy Beach	<del>32</del> 36	57	57	0	5 dBA	No
	Coral Sea Village	<del>51</del> 59	54	<del>56</del> 60	<del>2</del> 6	5 dBA	Yes
	Farragut Village	<del>49</del> 56	54	<del>55</del> 8	<del>1</del> 4	5 dBA	No
	Golf Course	<del>49</del> 50	47	<del>51</del> 52	<del>4</del> 5	10 dBA	No
	Regional Park	<del>49</del> 50	47	<del>51</del> 52	<del>4</del> 5	10 dBA	No

Note: This information is based on the environmental noise impact analysis prepared for the proposed project by Wilson Ihrig Associates (WIA) dated June 22, 2005. Refer to Appendix L, Mare Island Dredged Material Disposal Ponds Project Technical Report: Environmental Noise Impact Analysis (EIS/EIR, Volume II, Appendices). WIA performed supplemental analysis to reflect the restricted hours of operation for mechanical off-loading, which would occur between 7:00 a.m. and 9:00 p.m. Refer to Chapter 4, Additional Information in Final EIS/EIR, Volume IV, Comments and Responses.

### Alternatives 1 and 2

The noise modeling results in Table 3.7-2, which include the effect of limited hours of operation at Pier 34, indicate that none of the operations associated with Alternatives 1 and 2 would result in noise that exceeds the City's residential noise ordinance standards of 65 dBA (daytime) and 60 dBA (nighttime) or the significance threshold of 75 dBA for the park and golf course.

The noise modeling results in Table 3.7-3 indicate that none of the operations associated with Alternatives 1 and 2 would result in noise that exceeds the City's General Plan Noise Element Policy 2c thresholds.

Although Solano County noise standards are not used as significance criteria, the following discussion has been included for informational purposes. The noise modeling results in Table 3.7-3 indicate that, with the exception of mechanical off-loading at Pier 34, none of the operations associated with Alternatives 1 and 2 would result in noise that exceeds the Solano County noise standard of 50 CNEL. Noise from mechanical off-loading at Pier 34 is predicted to be ~~57~~ 52 CNEL at Sandy Beach, ~~which exceeds~~ Although this is 2 decibels over the Solano County noise standard of 50 CNEL, it will be 5 dB below. ~~However,~~ the existing noise level ~~of at~~ 57 CNEL. The resulting cumulative daily noise exposure is predicted to be 58 L<sub>dn</sub>, which is only 1 decibel above the existing noise level. ~~also exceeds the county standard and net increase in noise associated with mechanical off-loading relative to existing conditions is not predicted to exceed 3 dB.~~

Because implementation of Alternatives 1 and 2 are not predicted to result in noise that exceeds the operational significance thresholds, this impact is considered less than significant under Alternatives 1 and 2. No mitigation is required.

### Alternative 3:

Under Alternative 3 noise from the following operations would be the same as under Alternatives 1 and 2.

- Mechanically off-loading material at Pier 34.
- Hydraulically off-loading material near Pier 35.
- Spreading material at Ponds 2 and 4.
- Ditching at Ponds 2 and 4.

For the reasons discussed under Alternatives 1 and 2 above, noise impacts from these operations would be less than significant.

The analysis of trucking materials to Ponds 2 and 4 under Alternative 3 assumes that the Charlton/Meginnis route would be used to avoid impacts to other resources along the Ribeiro Road route. As indicated in Table 3.7-2, noise from trucking of material from Pier 34 to Ponds 2 and 4 is expected to exceed the City's noise ordinance criteria of 60 dBA at the Coral Sea Village at night. The

hourly  $L_{eq}$  is predicted to exceed the allowable 60 dBA limit by 2 dBA. This would occur an average of ~~25~~ 14 and up to ~~90~~ 50 days per year.

As indicated in Table 3.7-3, trucking of material from Pier 34 to Ponds 2 and 4 is expected to raise the noise level near Charlton Road to 60  $L_{dn}$  in the proposed Regional Park and 59  $L_{dn}$  in the golf course. These levels would be 13 and 12 dBA, respectively, more than the assumed existing ambient level of 47 dBA. The existing ambient sound level in the park area and the golf course has not been measured. It is assumed to be the same as that measured in the marsh, which is probably a conservative assumption. The allowed increase under Policy 2c is 10 dBA, so the predicted noise increase in noise is 2 to 3 dB greater than the allowed increase of 10 dB.

A noise increase would also occur at Coral Sea Village from trucking. The estimated “with-project” level of ~~69~~ 61  $L_{dn}$  is ~~15~~ 7 dBA over the estimated existing ambient of 54  $L_{dn}$ . This would occur an average of ~~25~~ 14 and up to ~~90~~ 50 days per year.

If the Ribeiro Road route is used, the  $L_{dn}$  exposure in the Park and the golf course would meet the Policy 2c Criteria, but the noise level in Coral Sea Village would be 61  $L_{dn}$ , still 2 dBA over the allowable 59  $L_{dn}$ .

Table 3.7-2 also indicates that noise from dumping and spreading of trucked material at Ponds 2 and 4 would result in exceedance of the Policy 2c criteria at the Coral Sea Village. Trucking of material to Ponds 2 and 4, and dumping and spreading of material in the pond are predicted to exceed the noise significance thresholds identified above. These activities are therefore predicted to result in significant noise impacts. Because there is no feasible means of reducing noise from these operations, this impact is considered to be significant and unavoidable.

Although not required for mitigation of a significant impact under a particular alternative, the project applicant has agreed to implement the following noise reduction measure in response to concerns raised by residents in the area about noise from nighttime off-loading activities at Pier 34. The noise analysis above reflects this commitment.

Environmental Commitment F-1: Restrict Mechanical Off-Loading Activities at Pier 34 to Between the Hours of 7:00 a.m. to 9:00 p.m.

# Environmental Commitments and Mitigation Measures

## Environmental Commitments

~~The project proponent has not made any previous environmental commitments relating to noise.~~ WESTON has made the following environmental commitment to reduce noise effects of the project.

**Environmental Commitment F-1: Restrict Mechanical Off-Loading Activities at Pier 34 to Between the Hours of 7:00 a.m. to 9:00 p.m.**  
Mechanical off-loading activities at Pier 34, including the transportation of dredged material to the pond(s), would be restricted to between the hours of 7:00 a.m. and 9:00 p.m. When off-loading activities occur after dark, flagman will be used for truck movements instead of backup alarms. Implementation of this measure will not only reduce noise from offloading activities, but will also eliminate nighttime noise from trucking associated with offloading.

During construction and maintenance activities, heavy equipment will not be operated on the eastern-most levees of Ponds 4M and 4S on weekends. Heavy truck or equipment traffic using the levee tops to gain access to the south shore area will be directed to travel on the central or western levees when coming to or leaving from the site.

## Mitigation Measures

For Alternatives 1 and 2, no mitigation is required. For Alternative 3, there is no mitigation available to reduce the impacts associated with trucking of material to and dumping and spreading material at Ponds 2 and 4 to a less-than-significant level.

# Summary of Effects and Mitigation Measures by Alternative

**Table 3.7-4.** Summary of Noise Effects and Mitigation Measures

	Alternative 1	Alternative 2	Alternative 3	No Action
<i>Noise</i>				
<b>Effect 3.7-1: Exposure of Noise-Sensitive Land Uses to Noise from Construction Activities</b>				
Quantitative Comparison	82 dBA at nearest receptors, less than 65 dB at Sandy Beach	82 dBA at nearest receptors, less than 65 dB at Sandy Beach	82 dBA at nearest receptors, less than 65 dB at Sandy Beach	No increase in noise
Significance before Mitigation	LS	LS	LS	NE
Significance after Mitigation	LS	LS	LS	NE
Mitigation Measures				
None required	X	X	X	X
None available				
<b>Effect 3.7-2: Exposure of Noise-Sensitive Land Uses to Noise from Routine Operations</b>				
Quantitative Comparison	Exceedance of City Noise Standard	Exceedance of City Noise Standard	Exceedance of City Noise Standard	Exceedance of City Noise Standard
Significance before Mitigation	LS	LS	SU	NE
Significance after Mitigation	LS	LS	SU	NE
Mitigation Measures				
None required	X	X		X
None available			X	
<u>F-1: Restrict Mechanical Off-Loading Activities at Pier 34 to Between the Hours of 7:00 a.m. to 9:00 p.m.</u>				
Notes: SU = Significant and unavoidable. S = Significant. PS = Potentially significant (same as significant for CEQA and NEPA purposes). LS = Less than significant. NE = No effect.				