Appendix L:
Noise

L-1: Expanded Noise Analysis

Expanded Noise Analysis
Prepared for the
Draft EIR
County of San Luis Obispo
Los Osos Wastewater Project

Prepared by:

Michael Brandman Associates
220 Commerce, Suite 200
Irvine, CA 92602
714.508.4100

Michael Brandman Associates

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PREFACE

This Expanded Noise Analysis corresponds to Section 5.10, Noise, of the Los Osos Wastewater Project Draft EIR. For readability and reference, the numbering system for headings and page numbers in the following environmental analysis uses the same section number as that used in the Draft EIR.

This Expanded Noise Analysis of the Los Osos Wastewater Project Draft EIR is a summary of a compendium of knowledge regarding noise issues statewide, as well as those issues applicable to San Luis Obispo County and specifically the community of Los Osos. Since this body of knowledge is considerable and contained in numerous appendices, it would be difficult to present it entirely in this document and in a manner that is easily understood by the reader. In order to aid the reader in locating background information, this section is formatted to facilitate the retrieval of appended information by presenting the reader with references that address the issue at hand.

5.10 - NOISE

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 noise modeling performed in October 2008 by Vista Environmental for Michael Brandman Associates and included in Appendix L-2 of this Draft EIR.

The following is a list of information reviewed in preparation of this section.

1. Associated Transportation Engineers. 2008. Los Osos Wastewater Treatment Project San Luis Obispo County, California Traffic & Circulation Study. This information is located in Appendix J-2 of the Draft EIR appendices.
2. California Department of Transportation. 1998 Technical Noise Supplement. This document is not contained in the EIR appendices, but is instead available for review at the San Luis Obispo County Department of Planning and Building. Pursuant to CEQA Guidelines Section 15150, this document is hereby incorporated by reference.
3. California Department of Transportation. 2004. Transportation- and Construction-Induced Vibration Guidance Manual. This document is not contained in the EIR appendices, but is instead available for review at the San Luis Obispo County Department of Planning and Building. Pursuant to CEQA Guidelines Section 15150, this document is hereby incorporated by reference.
4. County of San Luis Obispo. 1992. County of San Luis Obispo General Plan Noise Element, Part I Policy Document. This document is not contained in the EIR appendices, but is instead available for review at the San Luis Obispo County Department of Planning and Building. Pursuant to CEQA Guidelines Section 15150, this document is hereby incorporated by reference.
5. Federal Transit Administration. 2006. Transit Noise and Vibration Impact Assessment. This document is not contained in the EIR appendices, but is instead available for review at the San Luis Obispo County Department of Planning and Building. Pursuant to CEQA Guidelines Section 15150, this document is hereby incorporated by reference.
6. U.S. Department of Transportation. 2006. FHWA Roadway Construction Noise Model User's Guide. This document is not contained in the EIR appendices, but is instead available for review at the San Luis Obispo County Department of Planning and Building. Pursuant to CEQA Guidelines Section 15150, this document is hereby incorporated by reference.

5.10.1 - Introduction

Noise Fundamentals

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit that expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies that are audible to the human ear.

Noise Descriptors

Noise equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (L_{eq}) represents a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. The peak traffic hour L_{eq} is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Level (L_{dn}) is the weighted average of the intensity of a sound, with corrections for time of day and averaged over 24 hours. The time of day corrections require the addition of 10 decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the L_{dn}, it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these periods because, compared with daytime hours, there is a decrease in the ambient noise levels during the evening and nighttime hours, which creates an increased sensitivity to sounds. For this reason, the sound seems louder in the evening and nighttime hours and is weighted accordingly. The County of San Luis Obispo relies on the L_{dn} noise standard to assess transportation-related impacts on noise sensitive land uses.

Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source, ground absorption, atmospheric effects and refraction, and shielding by natural and man-made features. Sound from point sources such as air conditioning condensers radiate uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a

line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models: soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources, a 4.5 dBA/DD is typically observed for soft-site conditions compared with the 3.0 dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

Traffic Noise Prediction

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. Because of the logarithmic nature of traffic noise levels, a doubling of the traffic noise (acoustic energy) results in a noise level increase of 3 dBA. Based on the FHWA community noise assessment criteria, this change is "barely perceptible." In other words, doubling the traffic volume (assuming that the speed and truck mix do not change) results in a noise increase of 3 dBA. The truck mix on a given roadway also has an effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. For a noise barrier to work, it must be high enough and long enough to block the view of a road. A noise barrier is most effective when placed close to the noise source or receiver. A noise barrier can achieve a 5-dBA noise level reduction when it is tall enough to break the line of sight. When the noise barrier is a berm instead of a wall, the attenuation of noise can be increased by another 3 dBA.

Construction Noise Assumptions

The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table 5.10-1 provides a list of the construction equipment measured along with the associated noise emissions and measured percentages of typical equipment use per day. From this

acquired data, the FHWA developed the Roadway Construction Noise Model (RCNM), which may be used for the prediction of construction noise. For the purposes of this analysis, the RCNM will be used to calculate the construction equipment noise emissions.

Table 5.10-1: Construction Equipment Noise Emissions and Usage Factors

Equipment	Acoustical Use Factor (Percent)	Spec 721.560 L_{max} @ 50 feet (dBA, slow)	Actual Measured L_{max} @ 50 feet (dBA, slow)
Auger Drill Rig	20	85	84
Backhoe	40	80	78
Bar Bender	20	80	N/A
Compactor (ground)	20	80	83
Compressor (air)	40	80	78
Concrete Batch	15	83	N/A
Concrete Mixer Truck	40	85	79
Concrete Pump	20	82	81
Concrete Saw	20	90	90
Crane	16	85	81
Dozer	40	85	82
Dump Truck	40	84	76
Excavator	40	85	81
Flat Bed Truck	40	84	74
Front End Loader	40	80	79
Generator	50	82	81
Grader	40	85	N/A
Jackhammer	20	85	89
Paver	50	85	77
Pneumatic Tools	50	85	85
Pumps	50	77	81
Roller	20	85	80
Tractor	40	84	N/A
Vibrating Hopper	50	85	87
Vibratory Concrete Mixer	20	80	80
Welder/Torch	40	73	74
Source: Federal Highway Administration, 2006.			

Groundborne Vibration Fundamentals

Groundborne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of groundborne vibrations typically only cause a nuisance to people, but

at extreme vibration levels, damage to buildings may occur. Although groundborne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Groundborne noise is an effect of groundborne vibration and 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.

Vibration Descriptors

Several different methods are used to quantify vibration amplitude, such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Because of the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels; it is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is "VdB," which in this text, is when L_v is based on the reference quantity of 1 microinch per second.

Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans, whose threshold of perception is around 65 VdB. Offsite sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible groundborne noise or vibration. Exhibit 5.10-1 illustrates typical vibration levels and the associated human response.

Vibration Propagation

The propagation of groundborne vibration is not as simple to model as airborne noise. This is because noise in the air travels through a relatively uniform medium, while groundborne vibrations travel through the earth, which may contain significant geological differences. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a push-pull fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly, depending on the soil, but it has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

Construction-Related Vibration Level Prediction

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table 5.10-2 gives approximate vibration levels for particular construction activities. The data in the table provides a reasonable estimate for a wide range of soil conditions.

Table 5.10-2: Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second)	Approximate Vibration Level (L_v) at 25 feet
Pile driver (impact)	1.518 (upper range) 0.644 (typical)	112 104
Pile driver (sonic)	0.734 (upper range) 0.170 (typical)	105 93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall)	0.008 (in soil) 0.017 (in rock)	66 75
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
Source: Federal Transit Administration, 2006.		

5.10.2 - Environmental Setting

To determine the existing noise level environment, short-term peak-hour noise measurements were taken at four locations in the project study area and two 24-hour noise measurements were taken in the project study area. Exhibit 5.10-2 depicts the noise measurement locations.

Short-Term Peak Noise Measurements

The results of the short-term peak hour noise level measurements are presented in Table 5.10-3. The noise level measurements were monitored for a minimum time period of 15 minutes. The noise level measurements were taken during both the peak morning and afternoon traffic periods. The noise monitoring data printouts are included in Appendix L-2. The existing noise level measurements ranged from 37.8 to 60.2 dBA L_{eq}, with the highest noise measurement at Site 2. According to Section N-2230 of the California Department of Transportation (Caltrans) Technical Noise

Supplement, the CNEL values are generally within plus or minus 2 dBA of the measured peak hour L_{eq} dBA.

Table 5.10-3: Existing (Ambient) Short-Term Noise Level Measurements

Site No.	Site Description	Primary Noise Source	Start Time and Measurement (Minutes)	Noise Level (dBA L_{eq})
1	Located approximately 100 feet south of the centerline of Highland Drive and directly back from the T intersection at Alexander Avenue.	Traffic noise from Highland Drive and Alexander Avenue	7:15 a.m. (16:12)	55.1
			3:54 p.m. (15:00)	42.1
2	Located approximately 100 feet north of the centerline of Los Osos Valley Road, approximately 71 feet west of the centerline of Ravenna Avenue and approximately 15 feet west of the western property line of the Mid-Town location.	Traffic noise from Los Osos Valley Road	7:36 a.m. (15:30)	60.2
			4:16 p.m. (15:14)	58.8
3	Located approximately 0.29 miles north of Los Osos Valley Road and approximately 100 feet west of the eastern property line.	Noise from the power lines located to the east of property and traffic noise along Los Osos Valley Road	7:59 a.m. (20:15)	44.1
			4:42 p.m. (20:00)	37.8
4	Located approximately 100 feet west of the centerline line of Turri Road and approximately 15 feet north of the southern property line.	Traffic noise from Turri Road and Turri Ranch Road	8:26 a.m. (20:40)	41.3
			5:10 p.m. (20:00)	42.6

Notes: Noise measurements taken on Wednesday, September 3, 2008 and Thursday, September 4, 2008.
Source: Michael Brandman Associates, 2008.

The noise measurement results show that only Site 2 has the potential to exceed the County's exterior noise standards of 60 dBA CNEL for noise sensitive residential areas.

24-Hour Noise Measurement Results

The two 24-hour noise measurements were taken from 11:20 a.m. on September 3, 2008 and ran until 12:00 p.m. on September 4, 2008 for Site A and from 11:50 a.m. on September 3, 2008 and ran until 12:05 p.m. on September 4, 2008 for Site B. Site A was positioned on the Cemetary/Giacomazzi/ Branin project site approximately 100 feet east of the western property line and approximately a quarter mile north of Los Osos Valley Road. Site B was positioned in the vicinity of the West Paso pump station, approximately 100 feet east of the centerline of 3rd Street and the approximate center of Paso Robles.

The measured sound pressure levels in dBA have been used to calculate; the minimum and maximum Leq averaged over 10-minute intervals, and the 24-hour Ldn and CNEL, which are shown in Table 5.10-4 along with the measured Leq averaged over the entire measurement time. In addition, a graph

of the calculated L_{eq} averaged over 10 minute intervals for both 24-hour measurements is shown in Exhibit 5.10-3.

Table 5.10-4: Existing (Ambient) 24-Hour Noise Level Measurements

Site	Site Description	24-Hour Average (dBA L_{eq})	Minimum 10 Minute Interval (dBA L_{eq}/Time)	Maximum 10 Minute Interval (dBA L_{eq}/Time)	24-Hour Average (dBA L_{dn})	24-Hour Average (dBA CNEL)
A	Located on the Cemetary/Giacomazzi/Branin project site approximately 100 feet east of the western property line and approximately 0.29 miles north of Los Osos Valley Road.	46.9	34.6/ 2:25 a.m.	55.4/ 11:58 a.m.	52.2	52.8
B	Located in the vicinity of the West Paso pump station, approximately 100 feet east of the centerline of 3rd Street and the approximate center of Paso Robles.	47.5	37.3/ 12:18 a.m.	59.7/ 4:04 p.m.	51.6	51.8

Notes: Noise measurements on September 3 and 4, 2008.
Source: Michael Brandman Associates, 2008.

The noise measurement results show that Site A and B do not exceed the County's exterior noise standards of 60 dBA CNEL for noise sensitive areas. The 24-hour hour noise monitoring data printouts are included in Appendix L-2.

5.10.3 - Regulatory Setting

Federal

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce;
- Assisting state and local abatement efforts; and
- Promoting noise education and research.

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a

host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the federal Urban Mass Transit Administration (UMTA), while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being sited adjacent to a highway or, alternately, that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the County is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

State

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix," which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise, which is shown below in Exhibit 5.10-4.

Article 4 of the California Administrative Code (California Noise Insulation Standards, Title 25, Chapter 1) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold.

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

Local

County of San Luis Obispo General Plan

The General Plan establishes the following policies associated with noise that are applicable to the proposed project:

General:

- **Policy 3.3.1** The noise standards in this chapter represent maximum acceptable noise levels. New development should minimize noise exposure and noise generation.

Transportation Noise Sources:

- **Policy 3.3.2** New development of noise-sensitive land uses (see Section 1.5 – Definitions of the County of San Luis Obispo Noise Element) shall not be permitted in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed 60 dB L_{DN} or CNEL (70 L_{DN} or CNEL for outdoor sports and recreation) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaced to or below the levels specified for the given land use in Table 3-1 [Table 5.10-5]. The references to tables (i.e., Table 3-1 and 3-2 refer to tables in the General Plan).
- **Policy 3.3.3** Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 3-1. [Table 5.10-5] within the outdoor activity areas are interior spaces of existing noise sensitive land uses.

Stationary Noise Sources:

- **Policy 3.3.4** New development of noise-sensitive land uses shall not be permitted where the noise level due to existing stationary noise sources will exceed the noise level standards of Table 3-2 [Table 5.10-6], unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below the levels specified in Table 3-2 [Table 5.10-6].
- **Policy 3.3.5** Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated as follows and shall be the responsibility of the developer of the stationary noise source:
    a) Noise from agricultural operations conducted in accordance with accepted standards and practices is not required to be mitigated.
    b) Noise levels shall be reduced to or below the noise level standards in Table 3-2 [Table 5.10-6] where the stationary noise source will expose an existing noise-sensitive land use (which is listed in the Land Use element as an allowable use within its existing land use category) to noise levels which exceed the standards in Table 3-2 [Table 5.10-6]. When the affected noise-sensitive land use is Outdoor Sports and Recreation, the noise level standards in Table 3-2 [Table 5.10-6] shall be increased by 10 dB.
    c) Noise levels shall be reduced to or below the noise level standards in Table 3-2 [Table 5.10-6] where the stationary noise source will expose vacant land in the Agriculture, Rural Lands, Residential rural, Residential Suburban, Residential Single-Family, Residential Multi-Family, Recreation, Office and Professional, and Commercial Retail land use categories to noise levels which exceed the standards in Table 3-2 [Table 5.10-6].

       This policy may be waived when the Director of Planning and Building determines that such vacant land is not likely to be developed with a noise sensitive land use.
    d) For new proposed resource extraction, manufacturing or processing noise sources or modifications to those sources which increase noise levels: where such noise sources will expose existing noise-sensitive land uses (which are listed in the Land Use

Element as allowable uses within their land use categories) to noise levels which exceed the standards in Table 3-2 [Table 5.10-6], best available control technologies shall be used to minimize noise levels. The noise levels shall in no case exceed the noise level standards in Table 3-2 [Table 5.10-6].

Existing and Cumulative Noise Impacts:

- **Policy 3.3.6** San Luis Obispo County shall consider implementing mitigation measures where existing noise levels produce significant noise impacts to noise-sensitive land uses or where new development may result in cumulative increases of noise upon noise-sensitive land uses.

Table 5.10-5: Maximum Allowable Noise Exposure-Transportation Noise Sources

Land Use[4]	Outdoor Activity Areas[1] L_{dn}/CNEL, dB	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq9} dB[2]
Residential (except temporary dwellings and res accessory uses)	60[3]	45	--
Bed and Breakfast Facilities, Hotels and Motels	60[3]	45	--
Hospitals, Nursing and Personal Care	60[3]	45	--
Public Assembly and Entertainment (except Meeting Halls)	--	--	35
Offices	60[3]	--	45
Churches, Meeting Halls	--	--	45
Schools-Preschool to Secondary, College and University, Specialized Education and Training Libraries and Musemums	--	--	45
Outdoor Sports and Recreation	70	--	--

Notes:
[1] Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.
[2] As determined for a typical worst-case hour during periods of use.
[3] For other than residential uses, where an outdoor activity area is not proposed, the standard shall not apply. Where it is not possible to reduce noise in outdoor activity areas to 60 dB LDN/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
Source: County of San Luis Obispo General Plan, Noise Element, Table 3-1.

Table 5.10-6: Maximum Allowable Noise Exposure-Stationary Noise Sources

	Daytime (7 a.m. to 10 p.m.)	Nighttime[z] (10 p.m. to 7 a.m.)
Hourly L_{eq9}, dB	50	45
Maximum level, dB	70	65
Maximum level, dB-Impulsive Noise	65	60

Notes:
As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures.
Source: County of San Luis Obispo General Plan, Noise Element, Table 3-2.

County of San Luis Obispo Land Use Ordinance

The following is located in the County of San Luis Obispo Land Use Ordiance, Title 22 Land Use, Chapter 22.10 General Property Development and Operating Standards. Several of these standards are also repeated in the Title 23 Coastal Zone Land Use.

23.06.040 Noise standards.

This section establishes standards for acceptable exterior and interior noise levels and describe how noise shall be measured. These standards are intended to protect persons from excessive noise levels, which are detrimental to the public, health, welfare and safety and contrary to the public interest because they can: interfere with sleep, communication, relaxation and full enjoyment of one's property; contribute to hearing impairment and a wide range of adverse physiological stress conditions; and adversely affect the value of real property.

23.06.042 Exceptions to Noise Standards. The standards of this section are not applicable to noise from the following sources.

1. Activities conducted in public parks, public playgrounds and public or private school grounds, including but not limited to school athletic and school entertainment events;
2. The use of any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work to protect life or property;
3. Safety signals, warning devices, and emergency pressure relief valves;
4. Noise sources associated with construction, provided such activities do not take place before seven a.m. or after nine p.m. on any day except Saturday or Sunday, or before eight a.m. or after five p.m. on Saturday or Sunday;
5. Noise sources associated with the maintenance of a residential use as listed in Table O, framework for planning of the land use element and local coastal plan, provided that such activities take place between the hours of seven a.m. and nine p.m.;

6 Noise sources associated with agricultural land uses as listed in Table O, framework for planning of the land use element and local coastal plan, including but not limited to wind machines used for direct climate control, water well pumps and pest-repelling devices, provided that such pest-repelling devices are used in accordance with accepted standards and practices;

7. Noise sources associated with a lawful use which is other than a residential use as listed in Table O, framework for planning of the land use element and local coastal plan, caused by mechanical devices or equipment, including air conditioning or refrigeration systems, installed prior to the effective date of this chapter; this exemption shall expire one year after the effective date of this chapter;

8 Noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities;

9 Noise sources associated with the collection of waste or garbage from property devoted to other than residential uses listed in Table O, framework for planning of the land use element and local coastal plan;

10 Traffic on public roadways, railroad line operations, aircraft in flight, and any other activity to the extent regulation thereof has been preempted by state or federal law.

23.06.044 The exterior noise level standards of this section are applicable when a land use affected by noise is one of the following noise-sensitive uses which are defined in the land use element and local coastal plan: residential uses listed in Table O, framework for planning, except for residential accessory uses and temporary dwellings; health care services (hospitals and similar establishments only); hotels and motels; bed and breakfast facilities; schools (preschool to secondary, college and university, specialized education and training); churches; libraries and museums; public assembly and entertainment; offices, and outdoor sports and recreation.

1. No person shall create any noise or allow the creation of any noise at any location within the unincorporated areas of the county on property owned, leased, occupied or otherwise controlled by the person which causes the exterior noise level when measured at any of the preceding noise-sensitive land uses situated in either the incorporated or unincorporated areas to exceed the noise level standards in the following table [Table 5.10-7]. When the receiving noise-sensitive land use is outdoor sports and recreation, the following noise level standards shall be increased by ten dB.

Table 5.10-7: Maximum Allowed Exterior Noise Level Standards

Sound Levels	Daytime 7 a.m. to 10 p.m.	Nighttime[1] 10 p.m. to 7 a.m.
Hourly Equivalent Sound Level (Leq, dB)	50	45
Maximum level, dB	70	65
Notes: [1] Applies only to uses that operate or are occupied during nighttime hours Source: County of San Luis Obispo County Code Code Sec. 23.06.044 Subsection 1		

2. In the event the measured ambient noise level exceeds the applicable exterior noise level standard in Subsection 1, the applicable standard shall be adjusted so as to equal the ambient noise level plus one dB.
3. Each of the exterior noise level standards specified in Subsection 1 shall be reduced by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.
4. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the exterior noise level standards.

23.06.046 Interior Noise Level Standards. The interior noise level standards of this section are applicable when the land use which is the source of noise and the land use which is affected by noise are both residential uses as listed in Table O, framework for planning of the land use element and local coastal plan, except for residential accessory uses and temporary dwellings.

1. No person shall operate or cause to be operated a source of noise within a residential use in any location in the unincorporated areas of the county or allow the creation of any noise which causes the noise level when measured inside a residential use located in either the incorporated or unincorporated area to exceed the interior noise level standards in the following table [Table 5.10-8].

Table 5.10-8: Maximum Allowed Interior Noise Levels

Sound Levels	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
Hourly Equivalent Sound Level (Leq, dB)	40	35
Maximum level, dB	60	55
Source: County of San Luis Obispo County Code Sec. 23.06.046 Subsection 1.		

2. In the event the measured ambient noise level exceeds the applicable interior noise level standard in subsection 1, the applicable standard shall be adjusted so as to equal the ambient noise level plus one dB.

3. Each of the interior noise level standards specified in subsection 1 shall be reduced by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.
4. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the interior noise level standards.

D. Other Noise Sources. The noise level standards in this section apply to the following.

1. Air Conditioning and Refrigeration. Notwithstanding the provisions of Section 23.06.044, when the intruding noise source is an air conditioning or refrigeration system or associated equipment installed prior to the effective date of this chapter, the exterior noise level as measured as provided in Section 23.06.050 shall not exceed fifty-five dB, except where such equipment is exempt from the provisions of this chapter. The exterior noise level shall not exceed fifty dB for such equipment installed or in use after one year after the effective date of this chapter.

2 Waste and Garbage Collection Equipment. Notwithstanding the provisions of Section 23.06.044, noise sources associated with the collection of waste or garbage from a residential use (as listed in Table O, framework for planning of the land use element and local coastal plan) by persons authorized to engage in such activity, and who are operating truck-mounted loading or compacting equipment, shall not take place before seven a.m. or after seven a.m., and the noise level created by such activities when measured at a distance of fifty feet in an open area shall not exceed the following standards:

A Eighty-five dB for equipment in use, purchased or leased within six months from the effective date of this chapter;

B Eighty dB for that equipment set forth in subsection (1)(A) after five years from the effective date of this chapter;

C Eighty dB for new equipment purchased or leased after six months from the effective date of this chapter;

D Seventy-five dB for new equipment purchased or leased after thirty-six months from the effective date of this chapter.

3 Electrical Substations. Notwithstanding the provisions of Section 23.06.044, noise sources associated with the operation of the following electrical substations shall not exceed an exterior noise level of fifty dB between ten p.m. and seven a.m. and fifty-five dB between seven a.m. and ten p.m., as determined at the property line of the receiving land use: the Cholame, San Miguel, Templeton, Cambria, Perry, Cayucos, Baywood, Highway 1 between Morro Bay and the California Men's Colony, Goldtree, Foothill, San Luis Obispo, Oceano, Mesa, Union Oil, Callendar, and Mustang electrical substations. If any of these existing electrical substations undergo

modifications that increase noise levels, they shall be mitigated in accordance with the policies of the noise element document.

5.10.4 - Methodology

Vista Environmental prepared a noise evaluation of the proposed project that included noise measurements and modeling of project noise and vibration impacts. The noise evaluation is described below.

Measurement Procedure and Criteria

To ascertain the existing noise at and adjacent to the project site, field monitoring was conducted on Wednesday, September 3, 2008 and Thursday, September 4, 2008. The field survey noted that noise within the proposed project area is generally characterized by vehicle traffic on the local roadways. In addition, no aircraft over-flights were observed during the noise measurements.

Noise monitoring was performed using two different styles of noise meters for the short-term peak-hour measurements and the 24-hour measurements, which are described below.

Short-Term Peak Hour Noise Measurements

The short-term peak hour noise measurements were taken using a Larson-Davis Model 824 Type 1 precision sound level meter programmed in "slow" mode to record noise levels in "A" weighted form as well as the frequency spectrum of the noise broken down into 1/3 octaves. The sound level meter and microphone were mounted on a tripod five feet above the ground and were equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200. The accuracy of the calibrator is maintained through a program established through the manufacturer and is traceable to the National Bureau of Standards. The unit meets the requirements of ANSI Standard S1.4-1984 and IEC Standard 942: 1988 for Class 1 equipment. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

All traffic noise measurement durations were measured according to the standards stated in Section N-3320 of Caltrans Technical Noise Supplement, which specifies that the measurements be a duration of at least 10 minutes and shall be continued past 10 minutes until the fluctuations in the displayed Leq is less than 0.5 dBA.

24-Hour Noise Measurements

The 24-hour noise measurements were taken using two Extech Model 407780 Type 2 integrating sound level meters programmed in "slow" mode to record the sound pressure level at 3-second intervals for 24 hours in "A" weighted form. In addition, the L_{eq} averaged over the entire measuring time was also recorded. The sound level meter and microphone were mounted on a tripod five feet

above the ground and was equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using an Extech calibrator, Model 407766. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

Noise Measurement Locations

The noise monitoring locations were selected by Vista Environmental in order to obtain noise measurements of the current noise sources located on the project site and to provide a baseline for any potential noise impacts that may be created by development of the proposed project. Site 1 is located approximately 100 feet south of the centerline of Highland Drive and directly back from the T intersection at Alexander Avenue. Site 2 is located approximately 100 feet north of the centerline of Los Osos Valley Road, approximately 71 feet west of the centerline of Ravenna Avenue and approximately 15 feet west of the western property line of the Mid-Town location. Site 3 is located approximately 0.29 miles north of Los Osos Valley Road and approximately 100 feet west of the eastern property line. Site 4 is located approximately 100 feet west of the centerline line of Turri Road and approximately 15 feet north of the southern property line. Site A is located on the Cemetary/Giacomazzi/Branin project site approximately 100 feet east of the western property line and approximately 0.29 miles north of Los Osos Valley Road. Site B is located in the vicinity of the West Paso pump station, approximately 100 feet east of the centerline of 3rd Street and the approximate center of Paso Robles. Exhibit 5.10-2 shows the noise monitoring Locations. Appendix L-2 includes a photo index of the study area and noise level measurement locations.

Vehicle Traffic During Noise Measurements

Vehicle traffic was counted at Sites 1 and 4. Site 3 vehicle traffic has been provided in the Traffic Impact Analysis (see Appendix L-2 of the Draft EIR). During the noise measurement taken at Site 1, three cars were noted travelling on Highland Drive and three cars were noted travelling on Alexander Drive during peak morning hours. During peak afternoon hours, five cars and one truck were noted travelling on Highland Drive and one car and one truck were noted travelling and Alexander Drive. During the noise measurement taken at Site 4, 11 cars were noted travelling on Turri Road and one truck was noted on Turri Ranch Road during the peak morning hours. During peak afternoon hours, 11 cars were noted on Turri Road and two cars were noted on Turri Ranch Road.

Noise Measurement Timing and Climate

The noise measurements were recorded between 3:50 p.m. and 5:30 p.m. on September 3, 2008 and between 7:15 a.m. and 8:50 a.m. on September 4, 2008. When the short-term noise measurements were started on September 3, 2008, the sky was clear, temperature was 68 degrees Fahrenheit (°F), barometric pressure was 29.68 inches of mercury, and the wind approximately 5.1 miles per hour. When the short-term measurements were started on September 4, 2008, the sky was hazy with fog on the horizon, temperature was 55°F, barometric pressure was 29.68 inches of mercury, and the wind was calm.

Modeling of the Existing Noise Environment

In order to determine the existing noise environment the FHWA Traffic Noise Prediction Model FHWA-ROAD-77-108 was utilized.

FHWA-ROAD-77-108 Traffic Noise Prediction Model

The projected roadway noise impacts from vehicular traffic were projected using a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-ROAD-77-108. The FHWA-ROAD-77-108 Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the reference energy mean emission level to account for the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway); the total average daily traffic (ADT) and the percentage of ADT that flows during the day, evening, and night; the travel speed; the vehicle mix on the roadway, which is a percentage of the volume of automobiles, medium trucks, and heavy trucks; the roadway grade; the angle of view of the observer exposed to the roadway; and the site conditions ("hard" or "soft") as they relate to the absorption of the ground, pavement, or landscaping.

Traffic Noise Prediction Model Inputs

The roadway parameters used for this study are presented below in Table 5.10-9. The roadway classifications are based on the County of San Luis Obispo General Plan Circulation Map for the Estero Planning Area. The roadway speed is based on the posted speed limits. Soft-site conditions were used to develop noise contours and analyze noise impacts to the project site.

Table 5.10-9: FHWA Model Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (miles per hour)
Los Osos Valley Road	West of Broderson Avenue	Arterial	55
Los Osos Valley Road	East of Broderson Avenue	Arterial	55
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	Arterial	55
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	Arterial	55
Los Osos Valley Road	East of 10th Street	Arterial	55
Los Osos Valley Road	East of South Bay Boulevard	Arterial	55
Los Osos Valley Road	West of Turri Road	Arterial	55
Los Osos Valley Road	East of Turri Road	Arterial	55
Broderson Avenue	South of Los Osos Valley Road	Local	25
9th Street	North of Los Osos Valley Road	Collector	25
Bayview Heights Drive	South of Los Osos Valley Road	Collector	25

Table 5.10-9 (Cont.): FHWA Model Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (miles per hour)
10th Street	North of Los Osos Valley Road	Collector	25
South Bay Boulevard	North of Los Osos Valley Road	Arterial	55
South Bay Boulevard	South of Los Osos Valley Road	Collector	25
Turri Road	North of Los Osos Valley Road	Local	25
Source: Los Osos Wastewater Treatment Project, Traffic & Circulation Study, Associated Transportation Engineers, October 7, 2008 and County of San Luis Obispo, General Plan Circulation Map, Estero Area.			

In order to determine the offsite project generated traffic noise impacts, the ADT volumes on the study area roadways were obtained from the Traffic & Circulation Study prepared by Associated Transportation Engineers, October 7, 2008. The ADT volumes were provided for the existing year, existing plus project 1, cumulative without project, existing plus project 2, cumulative plus project 2, existing plus project 3, cumulative plus project 3, existing plus project 4, and cumulative plus project 4 scenarios. The ADT volumes were calculated by multiplying the peak-hour intersection volumes by 12 and are shown below in Tables 5.10-10, 5.10-11, 5.10-12, and 5.10-13.

Table 5.10-10: Proposed Project 1 Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing Year	Existing Plus Project 1	Cumulative	Cumulative Plus Project 1
Los Osos Valley Road	West of Broderson Avenue	8,500	8,600	9,500	9,600
Los Osos Valley Road	East of Broderson Avenue	9,000	9,100	10,000	10,000
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	13,000	13,100	14,300	14,400
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	16,200	16,200	17,800	17,800
Los Osos Valley Road	East of 10th Street	16,800	16,900	18,500	18,600
Los Osos Valley Road	East of South Bay Boulevard	16,400	16,600	18,200	18,300
Los Osos Valley Road	West of Turri Road	15,600	15,700	17,300	17,300
Los Osos Valley Road	East of Turri Road	15,900	15,900	17,600	17,600
Broderson Avenue	South of Los Osos Valley Road	500	600	700	700
9th Street	North of Los Osos Valley Road	5,900	5,900	6,500	6,600

Table 5.10-10 (Cont.): Proposed Project 1 Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing Year	Existing Plus Project 1	Cumulative	Cumulative Plus Project 1
Bayview Heights Drive	South of Los Osos Valley Road	2,600	2,600	2,900	2,900
10th Street	North of Los Osos Valley Road	3,500	3,500	3,800	3,900
South Bay Boulevard	North of Los Osos Valley Road	10,800	10,800	12,000	12,000
South Bay Boulevard	South of Los Osos Valley Road	800	800	900	900
Turri Road	North of Los Osos Valley Road	500	500	500	600
Source: Los Osos Wastewater Treatment Project, Traffic & Circulation Study, Associated Transportation Engineers, October 7, 2008.					

Table 5.10-11: Proposed Project 2 Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing Year	Existing Plus Project 2	Cumulative	Cumulative Plus Project 2
Los Osos Valley Road	West of Broderson Avenue	8,500	8,600	9,500	9,600
Los Osos Valley Road	East of Broderson Avenue	9,000	9,000	10,000	10,000
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	13,000	13,100	14,300	14,400
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	16,200	16,200	17,800	17,800
Los Osos Valley Road	East of 10th Street	16,800	16,900	18,500	18,600
Los Osos Valley Road	East of South Bay Boulevard	16,400	16,500	18,200	18,300
Los Osos Valley Road	West of Turri Road	15,600	15,700	17,300	17,300
Los Osos Valley Road	East of Turri Road	15,900	15,900	17,600	17,600
Broderson Avenue	South of Los Osos Valley Road	500	600	700	700
9th Street	North of Los Osos Valley Road	5,900	5,900	6,500	6,600
Bayview Heights Drive	South of Los Osos Valley Road	2,600	2,600	2,900	2,900

Table 5.10-11 (Cont.): Proposed Project 2 Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing Year	Existing Plus Project 2	Cumulative	Cumulative Plus Project 2
10th Street	North of Los Osos Valley Road	3,500	3,500	3,800	3,900
South Bay Boulevard	North of Los Osos Valley Road	10,800	10,800	12,000	12,000
South Bay Boulevard	South of Los Osos Valley Road	800	800	900	900
Turri Road	North of Los Osos Valley Road	500	500	500	600

Source: Los Osos Wastewater Treatment Project, Traffic & Circulation Study, Associated Transportation Engineers, October 7, 2008.

Table 5.10-12: Proposed Project 3 Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing Year	Existing Plus Project 3	Cumulative	Cumulative Plus Project 3
Los Osos Valley Road	West of Broderson Avenue	8,500	8,600	9,500	9,600
Los Osos Valley Road	East of Broderson Avenue	9,000	9,000	10,000	10,000
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	13,000	13,100	14,300	14,400
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	16,200	16,200	17,800	17,800
Los Osos Valley Road	East of 10th Street	16,800	16,900	18,500	18,600
Los Osos Valley Road	East of South Bay Boulevard	16,400	16,500	18,200	18,300
Los Osos Valley Road	West of Turri Road	15,600	15,700	17,300	17,300
Los Osos Valley Road	East of Turri Road	15,900	15,900	17,600	17,600
Broderson Avenue	South of Los Osos Valley Road	500	600	700	700
9th Street	North of Los Osos Valley Road	5,900	5,900	6,500	6,600
Bayview Heights Drive	South of Los Osos Valley Road	2,600	2,600	2,900	2,900
10th Street	North of Los Osos Valley Road	3,500	3,500	3,800	3,900

Table 5.10-12 (Cont.): Proposed Project 3 Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing Year	Existing Plus Project 3	Cumulative	Cumulative Plus Project 3
South Bay Boulevard	North of Los Osos Valley Road	10,800	10,800	12,000	12,000
South Bay Boulevard	South of Los Osos Valley Road	800	800	900	900
Turri Road	North of Los Osos Valley Road	500	500	500	600
Source: Los Osos Wastewater Treatment Project, Traffic & Circulation Study, Associated Transportation Engineers, October 7, 2008.					

Table 5.10-13: Proposed Project 4 Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing Year	Existing Plus Project 4	Cumulative	Cumulative Plus Project 4
Los Osos Valley Road	West of Broderson Avenue	8,500	8,600	9,500	9,600
Los Osos Valley Road	East of Broderson Avenue	9,000	9,000	10,000	10,000
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	13,000	13,100	14,300	14,400
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	16,200	16,200	17,800	17,800
Los Osos Valley Road	East of 10th Street	16,800	16,800	18,500	18,600
Los Osos Valley Road	East of South Bay Boulevard	16,400	16,500	18,200	18,300
Los Osos Valley Road	West of Turri Road	15,600	15,700	17,300	17,400
Los Osos Valley Road	East of Turri Road	15,900	15,900	17,600	17,600
Broderson Avenue	South of Los Osos Valley Road	500	600	700	700
9th Street	North of Los Osos Valley Road	5,900	5,900	6,500	6,600
Bayview Heights Drive	South of Los Osos Valley Road	2,600	2,600	2,900	2,900

Table 5.10-13 (Cont.): Proposed Project 4 Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing Year	Existing Plus Project 4	Cumulative	Cumulative Plus Project 4
10th Street	North of Los Osos Valley Road	3,500	3,500	3,800	3,800
South Bay Boulevard	North of Los Osos Valley Road	10,800	10,800	12,000	12,000
South Bay Boulevard	South of Los Osos Valley Road	800	800	900	900
Turri Road	North of Los Osos Valley Road	500	700	500	700
Source: Los Osos Wastewater Treatment Project, Traffic & Circulation Study, Associated Transportation Engineers, October 7, 2008.					

The vehicle mixes used in the FHWA-ROAD-77-108 Model have been provided in Table 5.10-14. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks, and heavy trucks for input into the FHWA. The FHWA-ROAD-77-108 Model utilized both the Arterial and Local vehicle mixes, which have been based on typical vehicle mixes observed in California.

Table 5.10-14: Roadway Vehicle Mixes

Roadway Classification	Vehicle Type	Hourly Traffic Flow Distributions (percent)			
		Day (7 a.m. to 7p.m.)	Evening (7 p.m. to 10 p.m.)	Night (10 p.m. to 7 a.m.)	Overall
Major Arterial and Major Collector	Automobiles	69.50	12.90	9.60	92.00
	Medium Trucks	1.60	0.80	0.60	3.00
	Heavy Trucks	3.50	1.00	0.50	5.00
Minor Collector and Local	Automobiles	73.60	13.60	10.22	97.42
	Medium Trucks	0.90	0.04	0.90	1.84
	Heavy Trucks	0.35	0.04	0.35	0.74
Source: Michael Brandman Associates, 2008.					

Source Assumptions

To assess the roadway noise generation in a uniform manner, all vehicles were analyzed at the single-lane-equivalent acoustic center of the roadway being analyzed. In order to determine the height above the road grade from where the noise is being emitted, each type of vehicle has been analyzed independently with autos at road grade, medium trucks at 2.3 feet above road grade, and heavy trucks at 8 feet above road grade. These elevations were determined through a noise-weighted average of

the elevation of the exhaust pipe, tires, and mechanical parts in the engine, which are the primary noise emitters from a vehicle.

Long-Term Stationary Noise Impacts

On-site noise impacts have been analyzed separately from the off-site vehicular noise impacts, since on-site noise sources may be directly regulated by local jurisdictions and are typically defined as stationary source noise regulations. The regulatory framework, which preempts direct regulation of transportation noise by local jurisdictions, has been previously described above.

5.10.5 - 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 and result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

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

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

d.) 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?

e.) 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?

To control transportation-related noise sources such as arterial roads, freeways, airports, and railroads, the County has established guidelines for acceptable community noise levels in the General Plan Noise Element. The Noise Element outlines the land use compatibility for community noise exposure by land use category. For development of a site with exterior noise levels less than 65 dBA CNEL, development near residential is normally acceptable, with typically no noise analysis or mitigation required. For development of a site with exterior noise levels in the 60- to 70-dBA CNEL range, development near residential is conditionally acceptable upon further analysis through a noise impact analysis and possible mitigation. For development of a site with exterior noise levels in the 70- to 75-dBA CNEL range, development near residential is normally unacceptable unless a detailed analysis shows that noise reduction features are included in the design. For exterior noise levels in

excess of 75 dBA CNEL, development of a site near residential uses is clearly unacceptable. The Land Use Compatibility Matrix has been shown above in Exhibit ___, which identifies compatibility of land uses with noise levels.

For the residential areas nearby, Policy 3.3.3 from the General Plan Noise Element provides an interior noise level standard of 45 dBA CNEL or less and an exterior noise standard of 60 dBA CNEL. In the context of this noise impact analysis, the noise impacts from transportation-related noise associated with the proposed project are controlled by the County Noise Element.

The CEQA Guidelines and the County's 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 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; therefore, they 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 without project noise level is less than 60 dB.
- Increase noise levels by 3 dB or more where the without project noise level is 60 to 65 dB.
- Increase noise levels by 1.5 dB or more where the without project noise level is greater than 65 dB.

The County Noise Element has also established performance standards to control stationary source/non-transportation related noise impacts. General Plan Policy 3.3.5 stipulates that the maximum allowable noise exposure for a stationary noise source be maintained at 50 dBA L_{eq} and 70 dBA L_{max} or less during the daytime (7 a.m. to 10 p.m.) and 45 dBA L_{eq} and 65 dBA L_{max} or less during the nighttime (10 p.m. to 7 a.m.).

Pursuant to Section 23.06.040 of the County Code, construction noise is considered a nuisance and the County Code places restrictions on the time when construction noise may occur. However, since neither the General Plan nor the County Code provides quantitative construction noise, construction noise impacts have been analyzed according to the same regulations as stated above for stationary noise.

For the purposes of this noise impact analysis, construction-related and operations-related vibration impacts would be considered significant if it involves any on-going operations activities that would create a vibration in excess of 0.01inches per second or 80 VdB at the nearby sensitive receptors or any construction-related activities that would create a vibration in excess of 0.2 inches per second or 94 VdB onto nearby structures.

Other Thresholds

For the purpose of the proposed project, the following threshold has been added. To evaluate the project's consistency with applicable goals, policies, and regulations related to noise impacts:

a.) Would the project conflict with policies in the General Plan?

5.10.6 - Analysis

This section analyzes Proposed Projects 1 through 4. The analysis includes a discussion of project-specific and cumulative impacts, provides mitigation measures where required, and concludes with a determination of level of significance after mitigation.

Noise Levels in Excess of Standards and Substantial (Permanent) Increase in Noise Levels

5.10-A:	**The project would 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 and result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.**

Project-Specific Impact Analysis

The on-going operation of the proposed project may result in a long-term increase in ambient noise levels created from both an increase in vehicular traffic on the nearby roadways and from stationary noise sources.

Stationary Noise

The collection system, treatment plant sites, and disposal sites may generate stationary noise impacts from the ongoing operation of the proposed project. In order to determine if the proposed project would exceed the County standards, stationary-only noise levels created by the proposed project were calculated at the nearby homes.

Roadway Noise

The on-going operations of the collection system, treatment plant sites, and disposal sites would all generate additional vehicular trips on roadways in the project vicinity. Since the different systems would add vehicular traffic to the same roadways, the vehicular noise impacts have been analyzed based on the combined traffic noise impacts for each proposed project.

In order to quantify the traffic noise impacts along the analyzed roadways, the roadway noise contours were calculated. Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. For analysis comparison purposes, the L_{dn} and CNEL noise levels are calculated at 100 feet from the centerline. In addition, the distance from the centerline to the 55-, 60-, 65-, and 70-dBA noise levels are calculated for both L_{dn} and CNEL standards. The noise contours for the existing traffic condition have been calculated using the FHWA Model and provided below in Table 5.10-15 in order to provide a baseline condition to compare the

proposed project impacts against. The FHWA Model calculations printouts are provided in Appendix L-2.

Table 5.10-15: Existing Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.0	RW	74	159	343
Los Osos Valley Road	East of Broderson Avenue	63.3	RW	77	165	356
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	64.9	RW	98	211	455
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	65.8	53	113	245	527
Los Osos Valley Road	East of 10th Street	66.0	54	116	251	540
Los Osos Valley Road	East of South Bay Boulevard	65.9	53	114	247	531
Los Osos Valley Road	West of Turri Road	65.7	51	111	238	514
Los Osos Valley Road	East of Turri Road	65.7	52	112	241	520
Broderson Avenue	South of Los Osos Valley Road	42.5	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	51.6	RW	RW	RW	60
Bayview Heights Drive	South of Los Osos Valley Road	48.1	RW	RW	RW	34
10th Street	North of Los Osos Valley Road	51.0	5	RW	RW	54
South Bay Boulevard	North of Los Osos Valley Road	64.1	40	87	187	402
South Bay Boulevard	South of Los Osos Valley Road	44.6	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	42.5	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

The calculated existing noise levels in Table 5.10-15 show that currently all roadway segments of Los Osos Valley Road and South Bay Boulevard north of Los Osos Valley Road would exceed the County's 60-dBA CNEL traffic noise standard. The existing noise levels from all analyzed roadway segments range from 42.5 to 66.0 dBA CNEL.

Proposed Project 1

Collection System

The collection system for Proposed Project 1 would consist of a septic tank effluent (STE) collection system. The STE system would consist of a septic tank located at each connection, where the solids would settle out of the sewage. The remaining effluent would then either have a septic tank effluent pump (STEP) or a septic tank effluent gravity (STEG) collection line that would transport the effluent to the pressurized street collection system pipeline, which would run to the treatment facility. Since the collection system is under pressure, no central pump system is required, however pressure cleanouts are required along the line as well as air-vacuum valves are required at high points in the pressurized collection system. A STE system would consist of the following components; (1) on-lot improvements, which would include a STEP/STEG tank with or without an effluent pump; (2) in-town collection system; and (3) out-of-town conveyance system.

The on-lot improvements would consist of re-routing house laterals, abandoning or re-purposing the existing septic tank and installing new STEP/STEG tanks. Sludge in the STEP/STEG tanks would need to be pumped out approximately every five years and approximately every two years the effluent filters would have to be cleaned. This would result in the inspection of 2,340 STEP/STEG tanks annually and the pumping of 936 septic tanks per year. In addition, the system would have 4,679 pumps that would require routine maintenance and replacement. The only potential stationary noise source associated with the on-lot improvements would be from the pumps. The pumps would consist of submersible low horsepower pumps located below grade and the noise created by the ongoing operation of the pumps would not be discernible. Therefore, stationary noise impacts associated with the on-going operation of the on-lot improvements for Proposed Project 1 would be less than significant.

The in-town collection system would consist of the installation of approximately 50,300 linear feet of 6-, 8, and 10-inch sewer line and 203,600 linear feet of 2- and 3-inch line. The only potential stationary noise source associated with the collection system would occur from the approximately 630 air vacuum valves. Each air vacuum valve would have a carbon filter that would require routine maintenance and replacement. The air vacuum valves release air through a small orifice that is activated by a float. The air release lasts for about 2 to 3 seconds and would occur in the range of once every couple of days to a few times per day. The air valves are located either above ground and covered by a perforated steel can or below ground in a concrete enclosure with a perforated steel cover. Since the air valves would only operate for a very limited time and the valves would be located in an enclosure in the public right-of-ways, which would place them at least 25 feet away from any residence, no noise impact is anticipated from the air valves. Therefore, stationary noise impacts associated with the on-going operation of the in-town collection system for Proposed Project 1 would be less than significant.

The out of town conveyance system for Proposed Project 1 would consist of a line that would transport the wastewater from Los Osos to the Cemetery/Giacomazzi/Branin Treatment Plant site and

another line that would convey the treated effluent from the Cemetery/Giacomazzi/Branin Treatment Plant site to the Broderson Leachfield, and the Tonini Sprayfield. The wastewater line would be 18,700 feet long and would not require a pump station. The treated effluent line would be 26,800 feet long and have a pump station located at the treatment plant site and possibly another pump station at the Broderson site in order to achieve equal distribution throughout the leachfield disposal area. The two pump stations would be require limited routine maintenance and would be the only potential source of stationary noise. The pumps used in the pump stations may be as large as 75 horsepower and would produce a noise level of around 80 dB. The pump stations would be located below grade and covered by a manhole or concrete block structure, which would provide a minimum of 20 dB attenuation. The pumps would be located a minimum of 200 feet away from the nearest residence at the Giacomazzi site and a minimum of 100 feet away from the nearest residence at the Broderson site. Based on geometric spreading of noise, the pumps could produce a noise level of 28 dB at the nearest residence to the Giacomazzi site and 34 dB at the nearest residence to the Broderson site. These noise levels would not exceed the County stationary noise standards of 50 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime. Therefore, stationary noise impacts associated with the on-going operations of the out of town conveyance system for Proposed Project 1 would be less than significant.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 1 would consist of the raw wastewater being transported to the combined Cemetery/Giacomazzi/Branin site where the raw wastewater would then be treated through the use of facultative ponds. The facultative pond would consist of an approximately 12-acre pond with a mechanical aeration system and a backup diesel generator which would be the primary sources of stationary noise.

Based on the Los Osos Wastewater Project Final EIR prepared by Crawford, Multari and Clark Associates in 2001, a treatment plant site that utilized facultative ponds would produce a noise level of 52 dBA at 100 feet from the plant. The mechanical aeration system for the facultative pond on the Cemetery/Giacomazzi/Branin site could be located as near as 200 feet to the nearest residence. Based on geometric spreading of noise, the facultative pond could produce a noise level of 46.0 dBA at the nearest residence. This noise level would exceed the County stationary noise standard of 45 dBA L_{eq} during the nighttime.

The backup generator would be located inside a structure and would only be operated during power failures. The backup generator could be located as near as 200 feet to the nearest residence. According to the RCNM, a diesel generator would produce a noise level of 65.6 dBA at 200 feet. The structure would provide a minimum of 20 dB attenuation, however even with including this attenuation, this noise level produced by the diesel generator would exceed the County stationary noise standard of 45 dBA L_{eq} during the nighttime. Therefore, stationary noise impacts associated with the on-going operations of the treatment plant site for Proposed Project 1 could create a significant noise impact.

Disposal Sites

The effluent disposal for Proposed Project 1 would occur at both the Broderson Leachfield and Tonini Sprayfield. The Tonini Sprayfield would dispose of the water through evapotranspiration and percolation. The Broderson Leachfield would dispose of the effluent through percolation, which has a capacity of 448-acre feet per year. The leachfield would consist of a 7-acre area excavated to an average depth of 6.5 feet and backfilled with a 4-foot layer of gravel for drainage, which would be covered geotextile fabric. Final cover would consist of a minimum of 2.5 feet of native soil back fill. The percolation piping would consist of 4-inch perforated pipe that would be installed beneath the geotextile fabric. Besides a possible pump for the treated effluent entering the site that has been analyzed above as part of the out of town conveyance system, there are no other potential sources of stationary noise. Therefore, stationary noise impacts associated with the on-going operations of the Broderson Leachfield for Proposed Project 1 would be less than significant.

The Tonini Sprayfield would consist of irrigation lines with detachable sprinklers that are approximately 30 feet apart and would cover approximately 175-acres of the Tonini site. At the bottom of the sprayfield, a drain would be constructed to collect the run-off, which would then be reapplied to the sprayfield via a pump. The pump may produce a noise level of up to 80 dB. The pump would be located a minimum of 350 feet away from the nearest residence from the Tonini site. Based on geometric spreading of noise, the pump could produce a noise level of 43 dB at the nearest residence. This noise level would not exceed the County stationary noise standards of 50 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime. Therefore, stationary noise impacts associated with the on-going operations of the Tonini Sprayfield for Proposed Project 1 would be less than significant.

Combined Project Effects

The collection system, treatment plant site, and disposal sites for the most part are not near one another. The stationary noise created by the simultaneous on-going operations of multiple portions of Proposed Project 1 would not create a noticeable increase over the operational noise levels calculated above for the different sites. However, the on-going operations associated with each site would produce additional on-road vehicular traffic, which may create a combined traffic noise impact. The combined on-going operations of the collection system, treatment plant site, and disposal site for Proposed Project 1 would generate approximately 58 trips per day. The calculated existing plus Proposed Project 1 condition noise contours are shown below in Table 5.10-16.

Table 5.10-16: Existing Plus Proposed Project 1 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.1	RW	74	160	345
Los Osos Valley Road	East of Broderson Avenue	63.3	RW	77	166	359
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	64.9	RW	99	212	457
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	65.8	53	113	245	527
Los Osos Valley Road	East of 10th Street	66.0	54	117	251	542
Los Osos Valley Road	East of South Bay Boulevard	65.9	54	115	249	535
Los Osos Valley Road	West of Turri Road	65.7	52	111	239	516
Los Osos Valley Road	East of Turri Road	65.7	52	112	241	520
Broderson Avenue	South of Los Osos Valley Road	43.3	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	51.6	RW	RW	RW	60
Bayview Heights Drive	South of Los Osos Valley Road	48.1	RW	RW	RW	34
10th Street	North of Los Osos Valley Road	51.0	RW	RW	RW	54
South Bay Boulevard	North of Los Osos Valley Road	64.1	RW	87	187	402
South Bay Boulevard	South of Los Osos Valley Road	44.6	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	42.5	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-16 shows that at 100 feet from the centerline, compared with the existing baseline condition shown in Table 5.10-15, no additional roadway segments would exceed the County's 60-dBA CNEL standard in addition to those already existing. The noise levels from all analyzed roadway segments would range from 42.5 to 66.0 dBA CNEL.

The noise levels calculated in each roadway segment for the existing plus Proposed Project 1 condition have been compared against the existing condition below in Table 5.10-17 in order to show any potential increases in traffic noise.

Table 5.10-17: Proposed Project 1 Existing Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.0	63.1	0.1	No
Los Osos Valley Road	East of Broderson Avenue	63.3	63.3	0.0	No
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	64.9	64.9	0.0	No
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	65.8	65.8	0.0	No
Los Osos Valley Road	East of 10th Street	66.0	66.0	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	65.9	65.9	0.0	No
Los Osos Valley Road	West of Turri Road	65.7	65.7	0.0	No
Los Osos Valley Road	East of Turri Road	65.7	65.7	0.0	No
Broderson Avenue	South of Los Osos Valley Road	42.5	43.3	0.8	No
9th Street	North of Los Osos Valley Road	51.6	51.6	0.0	No
Bayview Heights Drive	South of Los Osos Valley Road	48.1	48.1	0.0	No
10th Street	North of Los Osos Valley Road	51.0	51.0	0.0	No
South Bay Boulevard	North of Los Osos Valley Road	64.1	64.1	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	44.6	44.6	0.0	No
Turri Road	North of Los Osos Valley Road	42.5	42.5	0.0	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-17 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 0.8 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase

for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 0.8 dBA would occur at Broderson Avenue south of Los Osos Valley Road. A 0.8-dBA noise increase would below the County's thresholds of significance. Therefore, for the existing conditions and based on thresholds of significance defined above, no significant, long-term combined noise impacts from Proposed Project 1 vehicle noise would occur along the study area roadways segments.

In addition, the treatment plant would have back up generators for on-going operations. These back-up generators could exceed the County's stationary noise standards described above. Therefore, stationary noise impacts associated with the back-up generator at the treatment plant site could create a significant noise impact.

Proposed Project 2

Collection System

The collection system for Proposed Project 2 would consist of a conventional gravity collection system. A gravity system would consist of; (1) on-lot improvements; (2) gravity collection system; and (3) out-of-town conveyance system.

The on-lot improvements for Proposed Project 2 would consist of abandoning existing septic tank and rerouting house lateral pipes to connect to the sewer system. On approximately five percent of the lots a low pressure grinder pump would be installed. Each homeowner would be responsible for the maintenance of the onsite sewer lateral. The only potential stationary noise source associated with the on-lot improvements would be from the grinder pumps. The pumps would consist of submersible low horsepower pumps located below grade and the noise created by the ongoing operation of the pumps would not be discernible. Therefore, stationary noise impacts associated with the on-going operation of the on-lot improvements for Proposed Project 2 would be less than significant.

The in-town collection system for Proposed Project 2 would consist of both gravity sewers and force mains that would convey the wastewater to the Mid-Town site. The in-town collection system would consist of 230,000 linear feet of pipe, 907 manholes, 5 duplex pump stations, 2 triplex pump stations, 12 pocket pump stations, standby power facilities, and 4,769 laterals. The sewer mains would range from 8- to 18-inch diameter pipe. The potential stationary noise sources associated with the collection system would occur from the pump stations and standby power facility.

The largest pump would be a 60 horsepower triplex pump that would produce a noise level of approximately 80 dB. The pump stations would be located 10 to 20 feet below grade and covered by a manhole in the middle of the roadways. Based on geometric spreading of noise, the pump would produce a noise level of around 74 dB at the top of the manhole. The steel manhole cover would provide at least 20 dB attenuation, which would reduce the noise level to 54 dB. Since the manhole would be located in the middle of the street or at least 25 feet from the nearest residence, the noise at

the nearest residence would be 40 dBA or less. This noise level would not exceed the County stationary noise standards of 50 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime.

The standby power facilities would consist of a structure that would house electrical panels and a backup diesel generator. Since the standby power facilities would be located adjacent to a public roadway, the nearest residences would be located approximately 25 feet away from the facility. According to the RCNM a diesel generator would produce a noise level of 80.6 dBA at 25 feet. The standby power facility structure would provide a minimum of 20 dB attenuation, however even with including this attenuation, this noise level produced by the diesel generator would exceed the County stationary noise standards of 50 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime. Therefore, stationary noise impacts associated with the on-going operations of the backup diesel generators for the in-town collection system for Proposed Project 2 could create a significant noise impact.

The out of town conveyance system for Proposed Project 2 would be the same system as described for Proposed Project 1, which found the only potential source of stationary noise would be from the treated effluent line that would have a pump station located at the treatment plant site and possibly another pump station at the Broderson site in order to achieve equal distribution throughout the leachfield disposal area. The analysis above found that the pumps could produce a noise level of 28 dB at the nearest residence to the Giacomazzi site and 34 dB at the nearest residence to the Broderson site. These noise levels would not exceed the County stationary noise standards of 50 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime. Therefore, stationary noise impacts associated with the on-going operations of the out of town conveyance system for Proposed Project 2 would be less than significant.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 2 would consist of the raw wastewater being transported to the Giacomazzi site where the raw wastewater would then be treated through the use of an oxidation ditch or biolac. An oxidation ditch and biolac are different process systems but they share similar but they share similar process components. The primary noise sources from the operation of an oxidation ditch or biolac would be from a rotary lobe type blower and a backup diesel generator.

The approximately 250 horsepower rotary lobe blower would operate at around 800 rotations per minute and could produce a noise level of around 90 dB at 10 feet. The rotary lobe blower would be located inside a structure and could be located as close as 200 feet to the nearest residence. Based on geometric spreading of noise, the rotary lobe blower could produce a noise level of 64 dBA at the nearest residence. The concrete block structure would provide a minimum of 20 dB attenuation, which would be adequate to reduce the noise level to within the County stationary noise standards of 50 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime.

The backup generator would be located inside a structure and would only be operated during power failures. The backup generator could be located as near as 200 feet to the nearest residence. According to the RCNM a diesel generator would produce a noise level of 65.6 dBA at 200 feet. The structure would provide a minimum of 20 dB attenuation, however even with including this attenuation, this noise level produced by the diesel generator could exceed the County stationary noise standard of 45 dBA L_{eq} during the nighttime. Therefore, stationary noise impacts associated with the on-going operations of the backup generator at the treatment plant site for Proposed Project 2 could create a significant noise impact.

Disposal Sites

The effluent disposal for Proposed Project 2 would be the same system as described for Proposed Project 1 with the addition of a seasonal storage pond at the Tonini Sprayfield. No stationary noise sources are anticipated to occur from the ongoing operation of the seasonal storage pond. Therefore, the Proposed Project 2 operational noise impacts would be similar to what was calculated above for Proposed Project 1, which found that the stationary noise impacts associated with the on-going operations of the Broderson Leachfield and Tonini Sprayfield would be less than significant.

Combined Project Effects

The stationary noise created by the simultaneous on-going operations of multiple portions of Proposed Project 2 would not create a noticeable increase over the operational noise levels calculated above for the different sites. However, the on-going operations associated with each site would produce additional on-road vehicular traffic, which may create a combined traffic noise impact. The combined on-going operations of the collection system, treatment plant site, and disposal site for Proposed Project 2 would generate approximately 52 trips per day. The calculated existing plus Proposed Project 2 condition noise contours are shown below in Table 5.10-18.

Table 5.10-18: Existing Plus Proposed Project 2 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.1	RW	74	160	345
Los Osos Valley Road	East of Broderson Avenue	63.3	RW	77	165	356
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	64.9	RW	99	212	457
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	65.8	53	113	245	527
Los Osos Valley Road	East of 10th Street	66.0	54	117	251	542

Table 5.10-18 (Cont.): Existing Plus Proposed Project 2 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	East of South Bay Boulevard	65.9	53	115	248	533
Los Osos Valley Road	West of Turri Road	65.7	52	111	239	516
Los Osos Valley Road	East of Turri Road	65.7	52	112	241	520
Broderson Avenue	South of Los Osos Valley Road	43.3	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	51.6	RW	RW	RW	60
Bayview Heights Drive	South of Los Osos Valley Road	48.1	RW	RW	RW	34
10th Street	North of Los Osos Valley Road	51.0	RW	RW	RW	54
South Bay Boulevard	North of Los Osos Valley Road	64.1	RW	87	187	402
South Bay Boulevard	South of Los Osos Valley Road	44.6	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	42.5	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-16 shows that at 100 feet from the centerline, compared with the existing baseline condition, no additional roadway segments would exceed the County's 60-dBA CNEL standard in addition to those already existing. The noise levels from all analyzed roadway segments would range from 42.5 to 66.0 dBA CNEL.

The noise levels calculated in each roadway segment for the existing plus Proposed Project 2 condition have been compared against the existing condition below in Table 5.10-19 in order to show any potential increases in traffic noise.

Table 5.10-19: Proposed Project 2 Existing Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.0	63.1	0.1	No
Los Osos Valley Road	East of Broderson Avenue	63.3	63.3	0.0	No
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	64.9	64.9	0.0	No
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	65.8	65.8	0.0	No
Los Osos Valley Road	East of 10th Street	66.0	66.0	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	65.9	65.9	0.0	No
Los Osos Valley Road	West of Turri Road	65.7	65.7	0.0	No
Los Osos Valley Road	East of Turri Road	65.7	65.7	0.0	No
Broderson Avenue	South of Los Osos Valley Road	42.5	43.3	0.8	No
9th Street	North of Los Osos Valley Road	51.6	51.6	0.0	No
Bayview Heights Drive	South of Los Osos Valley Road	48.1	48.1	0.0	No
10th Street	North of Los Osos Valley Road	51.0	51.0	0.0	No
South Bay Boulevard	North of Los Osos Valley Road	64.1	64.1	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	44.6	44.6	0.0	No
Turri Road	North of Los Osos Valley Road	42.5	42.5	0.0	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-19 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 0.8 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 0.8 dBA would occur at Broderson Avenue south of Los Osos Valley Road. A 0.8-dBA noise increase would be below the County's thresholds of significance. Therefore, for the

existing conditions and based on thresholds of significance defined above, no significant, long-term combined noise impacts from Proposed Project 2 vehicle noise would occur along the study area roadways segments.

Proposed Project 3

Collection System

The collection system for Proposed Project 3 would be the same system as described for Proposed Project 2, which would consist of a conventional gravity collection system. The gravity system would consist of; (1) on-lot improvements; (2) gravity collection system; and (3) out-of-town conveyance system.

The analysis above found that the on-going operations of the on-lot improvements for Proposed Project 2 would not create a significant noise impact. Therefore, stationary noise impacts associated with the on-going operation of the on-lot improvements for Proposed Project 3 would be less than significant.

The analysis above found that the on-going operations of the backup diesel generator used for the in-town collection system for Proposed Project 2 would create a significant noise impact. Therefore, noise impacts during the on-going operations of the collection system's in-town collection system for Proposed Project 3 would create significant impact.

The analysis above found that the on-going operations of the out of town conveyance system for Proposed Project 2 would not create a significant noise impact. Therefore, stationary noise impacts associated with the on-going operations of the out of town conveyance system for Proposed Project 3 would be less than significant.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 3 would be the same system as described for Proposed Project 2 with the addition of a seasonal storage pond on the Branin site. No stationary noise sources are anticipated to occur from the ongoing operation of the seasonal storage pond. The analysis above found that the on-going operations of the backup diesel generator used for the treatment plant site for Proposed Project 2 would create a significant noise impact. Therefore, stationary noise impacts associated with the on-going operations of the treatment plant site for Proposed Project 3 would create a significant impact.

Disposal Sites

The effluent disposal for Proposed Project 3 would be the same system as described for Proposed Project 1. Therefore, the Proposed Project 3 operational noise impacts would be similar to what was calculated above for Proposed Project 1, which found that the stationary noise impacts associated with the on-going operations of the Broderson Leachfield and Tonini Sprayfield would be less than significant.

Combined Project Effects

The stationary noise created by the simultaneous on-going operations of multiple portions of Proposed Project 3 would not create a noticeable increase over the operational noise levels calculated above for the different sites. However, the on-going operations associated with each site would produce additional on-road vehicular traffic, which may create a combined traffic noise impact. The combined on-going operations of the collection system, treatment plant site, and disposal site for Proposed Project 3 would generate approximately 51 trips per day. The calculated existing plus Proposed Project 3 condition noise contours are shown below in Table 5.10-20.

Table 5.10-20: Existing Plus Proposed Project 3 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.1	RW	74	160	345
Los Osos Valley Road	East of Broderson Avenue	63.3	RW	77	165	356
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	64.9	RW	99	212	457
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	65.8	53	113	245	527
Los Osos Valley Road	East of 10th Street	66.0	54	117	251	542
Los Osos Valley Road	East of South Bay Boulevard	65.9	53	115	248	533
Los Osos Valley Road	West of Turri Road	65.7	52	111	239	516
Los Osos Valley Road	East of Turri Road	65.7	52	112	241	520
Broderson Avenue	South of Los Osos Valley Road	43.3	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	51.6	RW	RW	RW	60
Bayview Heights Drive	South of Los Osos Valley Road	48.1	RW	RW	RW	34
10th Street	North of Los Osos Valley Road	51.0	RW	RW	RW	54
South Bay Boulevard	North of Los Osos Valley Road	64.1	RW	87	187	402
South Bay Boulevard	South of Los Osos Valley Road	44.6	RW	RW	RW	RW

Table 5.10-20 (Cont.): Existing Plus Proposed Project 3 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Turri Road	North of Los Osos Valley Road	42.5	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-20 shows that at 100 feet from the centerline, compared with the existing baseline condition, no additional roadway segments would exceed the County's 60-dBA CNEL standard in addition to those already existing. The noise levels from all analyzed roadway segments would range from 42.5 to 66.0 dBA CNEL.

The noise levels calculated in each roadway segment for the existing plus Proposed Project 3 condition have been compared against the existing condition below in Table 5.10-21 in order to show any potential increases in traffic noise.

Table 5.10-21: Proposed Project 3 Existing Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.0	63.1	0.1	No
Los Osos Valley Road	East of Broderson Avenue	63.3	63.3	0.0	No
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	64.9	64.9	0.0	No
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	65.8	65.8	0.0	No
Los Osos Valley Road	East of 10th Street	66.0	66.0	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	65.9	65.9	0.0	No
Los Osos Valley Road	West of Turri Road	65.7	65.7	0.0	No
Los Osos Valley Road	East of Turri Road	65.7	65.7	0.0	No
Broderson Avenue	South of Los Osos Valley Road	42.5	43.3	0.8	No

Table 5.10-21 (Cont.): Proposed Project 3 Existing Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
9th Street	North of Los Osos Valley Road	51.6	51.6	0.0	No
Bayview Heights Drive	South of Los Osos Valley Road	48.1	48.1	0.0	No
10th Street	North of Los Osos Valley Road	51.0	51.0	0.0	No
South Bay Boulevard	North of Los Osos Valley Road	64.1	64.1	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	44.6	44.6	0.0	No
Turri Road	North of Los Osos Valley Road	42.5	42.5	0.0	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-21 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 0.8 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 0.8 dBA would occur at Broderson Avenue south of Los Osos Valley Road. A 0.8-dBA noise increase would below the County's thresholds of significance. Therefore, for the existing conditions and based on thresholds of significance defined above, no significant, long-term combined noise impacts from Proposed Project 3 vehicle noise would occur along the study area roadways segments.

Proposed Project 4

Collection System

The collection system for Proposed Project 4 would be the same system as described for Proposed Project 2, which would consist of a conventional gravity collection system. The gravity system would consist of; (1) on-lot improvements; (2) gravity collection system; and (3) out-of-town conveyance system.

The analysis above found that the on-going operations of the on-lot improvements for Proposed Project 2 would not create a significant noise impact. Therefore, stationary noise impacts associated with the on-going operation of the on-lot improvements for Proposed Project 4 would be less than significant.

The analysis above found that the on-going operations of the backup diesel generator used for the in-town collection system for Proposed Project 2 would create a significant noise impact. Therefore, noise impacts during the on-going operations of the collection system's in-town collection system for Proposed Project 4 would create a significant impact.

The analysis above found that the on-going operations of the out of town conveyance system for Proposed Project 2 would not create a significant noise impact. Therefore, stationary noise impacts associated with the on-going operations of the out of town conveyance system for Proposed Project 4 would be less than significant.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 4 would consist of the raw wastewater being transported to the Tonini site where the raw wastewater would then be treated through the use of facultative ponds. The facultative pond would consist of a pond with a mechanical aeration system and a backup diesel generator which would be the primary sources of stationary noise.

According to the Prior FEIR a treatment plant site that utilized facultative ponds would produce a noise level of 52 dBA at 100 feet from the plant. The mechanical aeration system for the facultative pond on the Cemetery/Giacomazzi/Branin site could be located as near as 350 feet to the nearest residence. Based on geometric spreading of noise, the facultative pond could produce a noise level of 41 dBA at the nearest residence. This noise level would not exceed the County stationary noise standards of 50 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime.

The backup generator would be located inside a structure and would only be operated during power failures. The backup generator could be located as near as 350 feet to the nearest residence. According to the RCNM, a diesel generator would produce a noise level of 60.7 dBA at 350 feet. The structure would provide a minimum of 20 dB attenuation, which would reduce the noise level to 40.7 dBA. This noise level would not exceed the County stationary noise standards of 50 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime. Therefore, stationary noise impacts associated with the on-going operations of the treatment plant site for Proposed Project 4 would be less than significant.

Disposal Sites

The effluent disposal for Proposed Project 4 would be the same system as described for Proposed Project 1. Therefore, the Proposed Project 4 operational noise impacts would be similar to what was calculated above for Proposed Project 1, which found that the stationary noise impacts associated with the on-going operations of the Broderson Leachfield and Tonini Sprayfield would be less than significant.

Combined Project Effects

The stationary noise created by the simultaneous on-going operations of multiple portions of Proposed Project 4 would not create a noticeable increase over the operational noise levels calculated

above for the different sites. However, the on-going operations associated with each site would produce additional on-road vehicular traffic, which may create a combined traffic noise impact. The combined on-going operations of the collection system, treatment plant site, and disposal site for Proposed Project 4 would generate approximately 46 trips per day. The calculated existing plus Proposed Project 4 condition noise contours are shown below in Table 5.10-22.

Table 5.10-22: Existing Plus Proposed Project 4 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.1	RW	74	160	345
Los Osos Valley Road	East of Broderson Avenue	63.3	RW	77	165	356
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	64.9	RW	99	212	457
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	65.8	53	113	245	527
Los Osos Valley Road	East of 10th Street	66.0	54	116	251	540
Los Osos Valley Road	East of South Bay Boulevard	65.9	53	115	248	533
Los Osos Valley Road	West of Turri Road	65.7	52	111	239	516
Los Osos Valley Road	East of Turri Road	65.7	52	112	241	520
Broderson Avenue	South of Los Osos Valley Road	43.3	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	51.6	RW	RW	RW	60
Bayview Heights Drive	South of Los Osos Valley Road	48.1	RW	RW	RW	34
10th Street	North of Los Osos Valley Road	51.0	RW	RW	RW	54
South Bay Boulevard	North of Los Osos Valley Road	64.1	RW	87	187	402
South Bay Boulevard	South of Los Osos Valley Road	44.6	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	44.0	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-22 shows that at 100 feet from the centerline, compared with the existing baseline condition, no additional roadway segments would exceed the County's 60-dBA CNEL standard in addition to those already existing. The noise levels from all analyzed roadway segments would range from 43.3 to 66.0 dBA CNEL.

The noise levels calculated in each roadway segment for the existing plus Proposed Project 4 condition have been compared against the existing condition below in Table 5.10-23 in order to show any potential increases in traffic noise.

Table 5.10-23: Proposed Project 4 Existing Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.0	63.1	0.1	No
Los Osos Valley Road	East of Broderson Avenue	63.3	63.3	0.0	No
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	64.9	64.9	0.0	No
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	65.8	65.8	0.0	No
Los Osos Valley Road	East of 10th Street	66.0	66.0	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	65.9	65.9	0.0	No
Los Osos Valley Road	West of Turri Road	65.7	65.7	0.0	No
Los Osos Valley Road	East of Turri Road	65.7	65.7	0.0	No
Broderson Avenue	South of Los Osos Valley Road	42.5	43.3	0.8	No
9th Street	North of Los Osos Valley Road	51.6	51.6	0.0	No
Bayview Heights Drive	South of Los Osos Valley Road	48.1	48.1	0.0	No
10th Street	North of Los Osos Valley Road	51.0	51.0	0.0	No
South Bay Boulevard	North of Los Osos Valley Road	64.1	64.1	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	44.6	44.6	0.0	No

Table 5.10-23 (Cont.): Proposed Project 4 Existing Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Turri Road	North of Los Osos Valley Road	42.5	44.0	1.5	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-23 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 1.5 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 1.5 dBA would occur at Turri Road north of Los Osos Valley Road. Since the no project noise level is 42.5 dBA CNEL at Turri Road north of Los Osos Valley Road, a 1.5-dBA noise increase would below the County's thresholds of significance. Therefore, for the existing conditions and based on thresholds of significance defined above, no significant, long-term combined noise impacts from Proposed Project 4 vehicle noise would occur along the study area roadways segments.

Cumulative Impact Analysis

The stationary noise created by the multiple portions of any of the project alternatives would not create a cumulative noise increase when combined with any of the pending or proposed projects for the study area. However, the on-going operations associated with each alternative proposed project may create a traffic noise impact when combined with the cumulative traffic increases on the study area roadways.

The cumulative baseline scenario was calculated based on the future traffic volumes forecasted using a 1% annual growth factor, which is based on the historical traffic growth in the study area applied for a period of 10 years. The noise contours for the cumulative baseline traffic condition have been calculated and provided below in Table 5.10-24 in order to provide a baseline condition to compare the alternative project impacts against.

Table 5.10-24: Cumulative Baseline Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.5	RW	80	171	369
Los Osos Valley Road	East of Broderson Avenue	63.7	RW	82	177	382

Table 5.10-24 (Cont.): Cumulative Baseline Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	65.3	48	104	225	485
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	66.2	56	121	260	561
Los Osos Valley Road	East of 10th Street	66.4	58	124	267	576
Los Osos Valley Road	East of South Bay Boulevard	66.3	57	123	264	569
Los Osos Valley Road	West of Turri Road	66.1	55	119	255	550
Los Osos Valley Road	East of Turri Road	66.2	56	120	258	557
Broderson Avenue	South of Los Osos Valley Road	44.0	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	52.0	RW	RW	RW	63
Bayview Heights Drive	South of Los Osos Valley Road	48.5	RW	RW	RW	37
10th Street	North of Los Osos Valley Road	51.3	RW	RW	RW	57
South Bay Boulevard	North of Los Osos Valley Road	64.5	RW	93	200	431
South Bay Boulevard	South of Los Osos Valley Road	45.1	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	42.5	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

The calculated noise measurements show that for the cumulative baseline condition, all roadway segments of Los Osos Valley Road and South Bay Boulevard north of Los Osos Valley Road would exceed the County's 60-dBA CNEL standard. The noise levels from all analyzed roadway segments range from 42.5 to 66.4 dBA CNEL.

Proposed Project 1

The combined on-going operations of the collection system, treatment plant site, and disposal site for Proposed Project 1 would generate approximately 58 trips per day. The calculated cumulative plus Proposed Project 1 condition noise contours are shown below in Table 5.10-25.

Table 5.10-25: Cumulative Plus Proposed Project 1 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.6	RW	80	173	372
Los Osos Valley Road	East of Broderson Avenue	63.7	RW	82	177	382
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	65.3	49	105	226	487
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	66.2	56	121	260	561
Los Osos Valley Road	East of 10th Street	66.4	58	124	268	578
Los Osos Valley Road	East of South Bay Boulevard	66.4	57	123	265	571
Los Osos Valley Road	West of Turri Road	66.1	55	119	255	550
Los Osos Valley Road	East of Turri Road	66.2	56	120	258	557
Broderson Avenue	South of Los Osos Valley Road	44.0	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	52.1	RW	RW	RW	64
Bayview Heights Drive	South of Los Osos Valley Road	48.5	RW	RW	RW	37
10th Street	North of Los Osos Valley Road	51.4	RW	RW	RW	58
South Bay Boulevard	North of Los Osos Valley Road	64.5	RW	93	200	431
South Bay Boulevard	South of Los Osos Valley Road	45.1	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	43.3	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-16 shows that at 100 feet from the centerline, compared with the cumulative baseline condition, no additional roadway segments would exceed the County's 60-dBA CNEL standard in addition to those already exceeding the standard. The noise levels from all analyzed roadway segments would range from 43.3 to 66.4 dBA CNEL.

The noise levels calculated in each roadway segment for the cumulative plus Proposed Project 1 condition have been compared against the cumulative baseline condition below in Table 5.10-26 in order to show any potential cumulative increases in traffic noise.

Table 5.10-26: Proposed Project 1 Cumulative Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.5	63.6	0.1	No
Los Osos Valley Road	East of Broderson Avenue	63.7	63.7	0.0	No
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	65.3	65.3	0.0	No
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	66.2	66.2	0.0	No
Los Osos Valley Road	East of 10th Street	66.4	66.4	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	66.3	66.4	0.1	No
Los Osos Valley Road	West of Turri Road	66.1	66.1	0.0	No
Los Osos Valley Road	East of Turri Road	66.2	66.2	0.0	No
Broderson Avenue	South of Los Osos Valley Road	44.0	44.0	0.0	No
9th Street	North of Los Osos Valley Road	52.0	52.1	0.1	No
Bayview Heights Drive	South of Los Osos Valley Road	48.5	48.5	0.0	No
10th Street	North of Los Osos Valley Road	51.3	51.4	0.1	No
South Bay Boulevard	North of Los Osos Valley Road	64.5	64.5	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	45.1	45.1	0.0	No
Turri Road	North of Los Osos Valley Road	42.5	43.3	0.8	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-26 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 0.8 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 0.8 dBA would occur at Broderson Avenue south of Los Osos Valley Road. A 0.8-dBA noise increase would below the County's thresholds of significance. Therefore, for the cumulative conditions and based on thresholds of significance defined above, no significant, long-term noise impacts from Proposed Project 1 vehicle noise would occur along the study area roadways segments.

Proposed Project 2

The combined on-going operations of the collection system, treatment plant site, and disposal site for Proposed Project 2 would generate approximately 51 trips per day. The calculated cumulative plus Proposed Project 2 condition noise contours are shown below in Table 5.10-27.

Table 5.10-27: Cumulative Plus Proposed Project 2 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.6	RW	80	173	372
Los Osos Valley Road	East of Broderson Avenue	63.7	RW	82	177	382
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	65.3	49	105	226	487
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	66.2	56	121	260	561
Los Osos Valley Road	East of 10th Street	66.4	58	124	268	578
Los Osos Valley Road	East of South Bay Boulevard	66.4	57	123	265	571
Los Osos Valley Road	West of Turri Road	66.1	55	119	255	550
Los Osos Valley Road	East of Turri Road	66.2	56	120	258	557
Broderson Avenue	South of Los Osos Valley Road	44.0	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	52.1	RW	RW	RW	64
Bayview Heights Drive	South of Los Osos Valley Road	48.5	RW	RW	RW	37
10th Street	North of Los Osos Valley Road	51.4	RW	RW	RW	58
South Bay Boulevard	North of Los Osos Valley Road	64.5	RW	93	200	431
South Bay Boulevard	South of Los Osos Valley Road	45.1	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	43.3	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-26 shows that at 100 feet from the centerline, compared with the cumulative baseline condition, no additional roadway segments would exceed the County's 60-dBA CNEL standard in addition to those already exceeding the standard. The noise levels from all analyzed roadway segments would range from 43.3 to 66.4 dBA CNEL.

The noise levels calculated in each roadway segment for the cumulative plus Proposed Project 2 condition have been compared against the cumulative baseline condition below in Table 5.10-28 in order to show any potential cumulative increases in traffic noise.

Table 5.10-28: Proposed Project 2 Cumulative Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.5	63.6	0.1	No
Los Osos Valley Road	East of Broderson Avenue	63.7	63.7	0.0	No
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	65.3	65.3	0.0	No
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	66.2	66.2	0.0	No
Los Osos Valley Road	East of 10th Street	66.4	66.4	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	66.3	66.4	0.1	No
Los Osos Valley Road	West of Turri Road	66.1	66.1	0.0	No
Los Osos Valley Road	East of Turri Road	66.2	66.2	0.0	No
Broderson Avenue	South of Los Osos Valley Road	44.0	44.0	0.0	No
9th Street	North of Los Osos Valley Road	52.0	52.1	0.1	No
Bayview Heights Drive	South of Los Osos Valley Road	48.5	48.5	0.0	No
10th Street	North of Los Osos Valley Road	51.3	51.4	0.1	No
South Bay Boulevard	North of Los Osos Valley Road	64.5	64.5	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	45.1	45.1	0.0	No

Table 5.10-28 (Cont.): Proposed Project 2 Cumulative Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Turri Road	North of Los Osos Valley Road	42.5	43.3	0.8	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-28 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 0.8 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 0.8 dBA would occur at Broderson Avenue south of Los Osos Valley Road. A 0.8-dBA noise increase would below the County's thresholds of significance. Therefore, for the cumulative conditions and based on thresholds of significance defined above, no significant, long-term noise impacts from Proposed Project 2 vehicle noise would occur along the study area roadways segments.

Proposed Project 3

The combined on-going operations of the collection system, treatment plant site, and disposal site for Proposed Project 3 would generate approximately 51 trips per day. The calculated cumulative plus Proposed Project 3 condition noise contours are shown below in Table 5.10-29.

Table 5.10-29: Cumulative Plus Proposed Project 3 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.6	RW	80	173	372
Los Osos Valley Road	East of Broderson Avenue	63.7	RW	82	177	382
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	65.3	49	105	226	487
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	66.2	56	121	260	561
Los Osos Valley Road	East of 10th Street	66.4	58	124	268	578
Los Osos Valley Road	East of South Bay Boulevard	66.4	57	123	265	571

Table 5.10-29 (Cont.): Cumulative Plus Proposed Project 3 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Turri Road	66.1	55	119	255	550
Los Osos Valley Road	East of Turri Road	66.2	56	120	258	557
Broderson Avenue	South of Los Osos Valley Road	44.0	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	52.1	RW	RW	RW	64
Bayview Heights Drive	South of Los Osos Valley Road	48.5	RW	RW	RW	37
10th Street	North of Los Osos Valley Road	51.4	RW	RW	RW	58
South Bay Boulevard	North of Los Osos Valley Road	64.5	RW	93	200	431
South Bay Boulevard	South of Los Osos Valley Road	45.1	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	43.3	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-29 shows that at 100 feet from the centerline, compared with the cumulative baseline condition, no additional roadway segments would exceed the County's 60-dBA CNEL standard in addition to those already exceeding the standard. The noise levels from all analyzed roadway segments would range from 43.3 to 66.4 dBA CNEL.

The noise levels calculated in each roadway segment for the cumulative plus Proposed Project 3 condition have been compared against the cumulative baseline condition below in Table 5.10-30 in order to show any potential cumulative increases in traffic noise.

Table 5.10-30: Proposed Project 3 Cumulative Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.5	63.6	0.1	No

Table 5.10-30 (Cont.): Proposed Project 3 Cumulative Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	East of Broderson Avenue	63.7	63.7	0.0	No
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	65.3	65.3	0.0	No
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	66.2	66.2	0.0	No
Los Osos Valley Road	East of 10th Street	66.4	66.4	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	66.3	66.4	0.1	No
Los Osos Valley Road	West of Turri Road	66.1	66.1	0.0	No
Los Osos Valley Road	East of Turri Road	66.2	66.2	0.0	No
Broderson Avenue	South of Los Osos Valley Road	44.0	44.0	0.0	No
9th Street	North of Los Osos Valley Road	52.0	52.1	0.1	No
Bayview Heights Drive	South of Los Osos Valley Road	48.5	48.5	0.0	No
10th Street	North of Los Osos Valley Road	51.3	51.4	0.1	No
South Bay Boulevard	North of Los Osos Valley Road	64.5	64.5	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	45.1	45.1	0.0	No
Turri Road	North of Los Osos Valley Road	42.5	43.3	0.8	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-30 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 0.8 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 0.8 dBA would occur at Broderson Avenue south of Los Osos Valley Road. A 0.8-dBA noise increase would below the County's thresholds of significance. Therefore, for the

cumulative conditions and based on thresholds of significance defined above, no significant, long-term noise impacts from Proposed Project 3 vehicle noise would occur along the study area roadways segments.

Proposed Project 4

The combined on-going operations of the collection system, treatment plant site, and disposal site for Proposed Project 4 would generate approximately 46 trips per day. The calculated cumulative plus Proposed Project 4 condition noise contours are shown below in Table 5.10-31.

Table 5.10-31: Cumulative Plus Proposed Project 4 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.6	RW	80	173	372
Los Osos Valley Road	East of Broderson Avenue	63.7	RW	82	177	382
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	65.3	49	105	226	487
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	66.2	56	121	260	561
Los Osos Valley Road	East of 10th Street	66.4	58	124	268	578
Los Osos Valley Road	East of South Bay Boulevard	66.4	57	123	265	571
Los Osos Valley Road	West of Turri Road	66.1	55	119	256	552
Los Osos Valley Road	East of Turri Road	66.2	56	120	258	557
Broderson Avenue	South of Los Osos Valley Road	44.0	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	52.1	RW	RW	RW	64
Bayview Heights Drive	South of Los Osos Valley Road	48.5	RW	RW	RW	37
10th Street	North of Los Osos Valley Road	51.3	RW	RW	RW	57
South Bay Boulevard	North of Los Osos Valley Road	64.5	RW	93	200	431
South Bay Boulevard	South of Los Osos Valley Road	45.1	RW	RW	RW	RW

Table 5.10-31 (Cont.): Cumulative Plus Proposed Project 4 Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Turri Road	North of Los Osos Valley Road	44.0	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-31 shows that at 100 feet from the centerline, compared with the cumulative baseline condition, no additional roadway segments would exceed the County's 60-dBA CNEL standard in addition to those already exceeding the standard. The noise levels from all analyzed roadway segments would range from 44.0 to 66.4 dBA CNEL.

The noise levels calculated in each roadway segment for the cumulative plus Proposed Project 4 condition have been compared against the cumulative baseline condition below in Table 5.10-32 in order to show any potential cumulative increases in traffic noise.

Table 5.10-32: Proposed Project 4 Cumulative Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.5	63.6	0.1	No
Los Osos Valley Road	East of Broderson Avenue	63.7	63.7	0.0	No
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	65.3	65.3	0.0	No
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	66.2	66.2	0.0	No
Los Osos Valley Road	East of 10th Street	66.4	66.4	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	66.3	66.4	0.1	No
Los Osos Valley Road	West of Turri Road	66.1	66.1	0.0	No
Los Osos Valley Road	East of Turri Road	66.2	66.2	0.0	No
Broderson Avenue	South of Los Osos Valley Road	44.0	44.0	0.0	No
9th Street	North of Los Osos Valley Road	52.0	52.1	0.1	No

Table 5.10-32 (Cont.): Proposed Project 4 Cumulative Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Bayview Heights Drive	South of Los Osos Valley Road	48.5	48.5	0.0	No
10th Street	North of Los Osos Valley Road	51.3	51.3	0.0	No
South Bay Boulevard	North of Los Osos Valley Road	64.5	64.5	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	45.1	45.1	0.0	No
Turri Road	North of Los Osos Valley Road	42.5	44.0	1.5	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-32 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 1.5 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 1.5 dBA would occur at Turri Road north of Los Osos Valley Road. Since the no project noise level is 42.5 dBA CNEL at Turri Road north of Los Osos Valley Road, a 1.5-dBA noise increase would below the County's thresholds of significance. Therefore, for the cumulative conditions and based on thresholds of significance defined above, no significant, long-term noise impacts from Proposed Project 4 vehicle noise would occur along the study area roadways segments.

Mitigation Measures

Project-Specific

Proposed Project 1

A significant stationary noise impact would occur from the on-going operation of the treatment plant site for Proposed Project 1. Mitigation Measures 5.10-A1 and 5.10-A2 would reduce this impact to less than significant.

5.10-A1 The County will require that the treatment plant be designed so that the mechanical aeration system is located a minimum of 250 feet away from the nearest residence.

5.10-A2 The County will require that the treatment plant be designed so that the backup diesel generator is enclosed in a structure and is located a minimum of 250 feet away from the nearest residence.

Proposed Project 2

Implementation of Mitigation Measure 5.10-A2 is required as well as the following measure.

5.10-A3 The County will require that the backup power facility structures for the in-town collection system be designed so that the noise created from the backup diesel generator that would be located inside the structure would not exceed 45 dBA Leq at the nearest residence. The noise from the backup diesel generator may be attenuated through the use of a "manufacturer enclosure" or through incorporation of noise attenuation design features into the backup power facility structure.

Proposed Project 3

Implementation of Mitigation Measures 5.10-A2 and 5.10-A3 are required.

Proposed Project 4

Implementation of Mitigation Measure 5.10-A3 is required.

Cumulative

Proposed Project 1

No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific

Proposed Project 1

Less than significant.

Proposed Project 2

Less than significant.

Proposed Project 3

Less than significant.

Proposed Project 4

Less than significant.

Cumulative

Proposed Project 1

Less than significant.

Proposed Project 2

Less than significant.

Proposed Project 3

Less than significant.

Proposed Project 4

Less than significant.

Excessive Groundborne Vibration

5.10-B:	The project could expose people to or generation of excess groundborne vibration or groundborne noise levels.

Project-Specific Impact Analysis

Construction activities can produce vibration that may be felt by adjacent uses. The primary sources of vibration during construction would be from pile drivers, bulldozers, backhoes, crawler tractors, and scrapers. The vibration impacts have been estimated for the different construction activities associated with each of the four alternative projects. The vibration impacts have been calculated based on the reference vibration levels provided above in Table 5.10-2 for the different types of equipment. Since the equipment used in the on-going operations would not produce significant levels of vibration, no operations-related vibration impacts are anticipated.

Proposed Project 1

Collection System

The collection system for Proposed Project 1 would consist of a STE collection system. Construction of a STE system would consist of; (1) on-lot improvements, which would include the installation of a STEP/STEG tank with or without an effluent pump; (2) in-town collection system; and (3) out-of-town conveyance system.

The anticipated construction equipment to be used for the on-lot improvements including the installation of the tanks would generally consist of one rubber tired backhoe, a crane, and various service vehicles. None of the above pieces of equipment produced a high enough level of vibration to be included in Table 5.10-2. Therefore, vibration impacts during construction of the on-lot improvements for Proposed Project 1 would be less than significant.

The anticipated construction equipment to be used for the installation of the in-town collection system would generally consist of one track-mounted excavator, one front end loader, one rubber tired backhoe with front end loader, one service truck, and one directional drill. None of the above pieces of equipment produced a high enough level of vibration to be included in Table 5.10-2. Therefore, vibration impacts during construction of the in-town collection system for Proposed Project 1 would be less than significant.

The anticipated construction equipment to be used for the out-of-town conveyance system would generally consist of one track-mounted excavator, one front end loader, one rubber tired backhoe with front end loader, one service truck, a dewatering pump, and various pickup trucks. None of the above pieces of equipment produced a high enough level of vibration to be included in Table 5.10-2. Therefore, vibration impacts during construction of the out-of-town conveyance system for Proposed Project 1 would be less than significant.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 1 would consist of the raw wastewater being transported to the combined Cemetery/Giacomazzi/Branin site where the raw wastewater would then be treated through the use of facultative ponds. The greatest construction vibration impacts are anticipated to occur during the grading operations when the simultaneous operation of two tracked earthmovers, three wheeled earthmovers, two graders, one compaction roller, three backhoes, two excavators, two mobile cranes, 10 pickup trucks (two onsite), three small dump trucks, one water truck, and one asphalt compactor may operate simultaneously. According to Table 5.10-2, a large bulldozer would produce the largest vibration level 87 VdB or 0.089 inches per second at 25 feet. The nearest vibration sensitive land use is a single-family home located approximately 200 feet west of the Giacomazzi site. A dozer operating on the southwestern portion of the Giacomazzi site would produce a vibration level of 68.9 VdB or 0.003 inches per second at the nearest residence. This vibration level would not exceed the 0.2 inches per second or 94 VdB threshold discussed above. Therefore, vibration impacts during construction of the treatment plant site for Proposed Project 1 would be less than significant.

Disposal Sites

The effluent disposal for Proposed Project 1 would occur at both the Broderson Leachfield and Tonini Sprayfield. Construction of the Broderson Leachfield would require the simultaneous operation of one dozer and two scrappers. According to Table 5.10-2, a large bulldozer would produce the largest vibration level of 87 VdB or 0.089 inches per second at 25 feet. The nearest vibration sensitive land use is a single-family home located approximately 100 feet west of the Broderson Leachfield. A dozer operating on the western portion of the Broderson site would produce a vibration level of 75.0 VdB or 0.006 inches per second at the nearest residence. This vibration level would not exceed the 0.2 inches per second or 94 VdB threshold discussed above. Therefore, vibration impacts during construction of the Broderson Leachfield site for Proposed Project 1 would be less than significant.

Construction of the Tonini Sprayfield would require the simultaneous operation of one dozer and one grader. According to Table 5.10-2, a large bulldozer would produce the largest vibration level of 87 VdB or 0.089 inches per second at 25 feet. The nearest vibration sensitive land use is a single-family home located approximately 350 feet south of the Tonini Sprayfield. A dozer operating on the southeastern portion of the Tonini site would produce a vibration level of 54.1 VdB or 0.0005 inches per second at the nearest residence. This vibration level would not exceed the the 0.2 inches per second or 94 VdB threshold discussed above. Therefore, vibration impacts during construction of the Tonini Sprayfield site for Proposed Project 1 would be less than significant.

Combined Project Effects

Construction of the collection system, treatment plant site, and disposal site would all produce additional on-road truck traffic, which may create a vibration impact at the nearby homes. Combined construction activities associated with Proposed Project 1, are anticipated to create 102 truck round trips per day. Homes are located as near as 25 feet to where trucks are traveling on the nearby roads.

According to Table 5.10-2, a loaded truck traveling on a dirt road would produce a vibration level of 86 VdB or 0.076 inches per second at 25 feet. This vibration level would not exceed the 0.2 inches per second or 94 VdB construction vibration threshold discussed above. Therefore, vibration impacts during the combined project construction activities for Proposed Project 1 would be less than significant.

The on-going operations of Proposed Project 1 would create approximately 36 truck trips per day. At completion of construction the only dirt roads that loaded trucks would be operating on would be the access road from Los Osos Valley Road to the Cemetery/Giacomazzi/Branin site. Trips by loaded truck to the Tonini site and Broderson site are not expected to occur because these two sites do not have daily, weekly, or monthly material being delivered. The nearest sensitive receptors to the cemetery/Guacomazzi/Branini site are located approximately 300 feet to the west of the Cemetery/Giacomazzi/Branin access road. According to Table 5.10-2, a loaded truck would produce a vibration level of 86 VdB or 0.076 inches per second at 25 feet. Given that the nearest sensitive receptor is 300 feet west of the treatment plant site, the operations-related vibration thresholds of 0.01inches per second or 80 VdB would not be exceeded. Therefore, the combined project on-going operations for Proposed Project 1 would result in a less than significant vibration impact.

Proposed Project 2

Collection System

The collection system for Proposed Project 2 would consist of a conventional gravity collection system. Construction of a gravity system would consist of; (1) on-lot improvements; (2) gravity collection system; and (3) out-of-town conveyance system.

The on-lot improvements for Proposed Project 2 would consist of abandoning existing septic tank and rerouting house lateral pipes to connect to sewer system. Construction equipment used during the installation of the onsite sewer laterals would most likely include a rubber-tired backhoe and service vehicles. None of the above pieces of equipment produced a high enough level of vibration to be included in Table 5.10-2. Therefore, vibration impacts during construction of the on-lot improvements for Proposed Project 2 would be less than significant.

The in-town collection system for Proposed Project 2 would consist of both gravity sewers and force mains that would convey the wastewater to the Mid-Town site. Although the construction equipment would vary between crews it would generally consist of one track-mounted excavator, one front end loader, one rubber tired backhoe with front end loader, one service truck, dewatering pumps, and various pickup trucks. In addition, the collection system would require construction of 19 pump stations. The construction of the pump stations would take approximately 90 to 120 days per station and would require cranes and possibly pile driving equipment in addition to the equipment listed above. Pile driving would be limited to only the pump stations where the groundwater fills the area being excavated quicker than the pumps can drain it. The pile driving would consist of either driving steel sheets down on the edge of the excavation area to slow the water down or to drive concrete

caissons into the ground and where a precast pump station is placed on top of the caissons. Homes are located as near as 25 feet to the proposed pump stations. According to Table 5.10-2, an impact pile driver would typically produce a vibration level of 104 VdB or 0.644 inches per second at 25 feet. This vibration level would exceed the 0.2 inches per second or 94 VdB construction vibration threshold discussed above. Therefore, construction of the pump stations for the in-town collection system for Proposed Project 2 would create a significant vibration impact.

The anticipated construction equipment to be used for the out-of-town conveyance system would generally consist of one track-mounted excavator, one front end loader, one rubber tired backhoe with front end loader, one service truck, a dewatering pump, and various pickup trucks. None of the above pieces of equipment produced a high enough level of vibration to be included in Table 5.10-2. Therefore, vibration impacts during construction of the out-of-town conveyance system for Proposed Project 1 would be less than significant.

The out of town conveyance system for Proposed Project 2 would be the same system as described for Proposed Project 1, which found that the vibration levels created during construction of the out of town conveyance system would be less than significant.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 2 would consist of the raw wastewater being transported to the Giacomazzi site where the raw wastewater would then be treated through the use of an oxidation ditch or biolac. The greatest construction noise impacts are anticipated to occur during the grading operations when the simultaneous operation of two tracked earthmovers, three wheeled earthmovers, two graders, one compaction roller, three backhoes, two excavators, two mobile cranes, 15 concrete trucks (two onsite), one concrete pumper truck, 10 pickup trucks (two onsite), three small dump trucks, one water truck, and one asphalt compactor may operate simultaneously. According to Table 5.10-2, a large bulldozer would produce the largest vibration level 87 VdB or 0.089 inches per second at 25 feet. The nearest vibration sensitive land use is a single-family home located approximately 200 feet west of the Giacomazzi site. A dozer operating on the southwestern portion of the Giacomazzi site would produce a vibration level of 68.9 VdB or 0.003 inches per second at the nearest residence. This vibration level would not exceed the 0.2 inches per second or 94 VdB threshold discussed above. Therefore, vibration impacts during construction of the treatment plant site for Proposed Project 2 would be less than significant.

Disposal Sites

The effluent disposal for Proposed Project 2 would be the same system as described for Proposed Project 1 with the addition of a seasonal storage pond at the Tonini Sprayfield. The construction of the storage pond would be constructed at the same time as the rest of the sprayfield and would require similar construction equipment. The analysis above found that construction of the disposal sites for Proposed Project 1 would not create a significant vibration impact. Therefore, vibration impacts during construction of the disposal sites for Proposed Project 2 would be less than significant.

Combined Project Effects

The combined project construction-related vibration impacts for Proposed Project 2 would be similar as described for Proposed Project 1, except the combined construction activities would create only 69 truck round trips per day versus the 102 truck round trips per day for Proposed Project 1. The analysis above for Proposed Project 1 found that the combined project construction vibration impacts would not create a significant impact. Therefore, the combined project vibration impacts during construction of Proposed Project 2 would be less than significant.

The combined project on-going operations vibration impacts for Proposed Project 2 would be similar as described for Proposed Project 1, and would create the same 36 truck trips per day. The analysis above for Proposed Project 1 found that the combined project on-going operations would result in a less than significant vibration impact due to the operation of trucks on dirt roads. Therefore, the combined project on-going operations for Proposed Project 2 would result in a less than significant vibration impact.

Proposed Project 3

Collection System

The collection system for Proposed Project 3 would be the same system as described for Proposed Project 2, which would consist of a conventional gravity collection system. Construction of a gravity system would consist of; (1) on-lot improvements; (2) gravity collection system; and (3) out-of-town conveyance system.

The analysis above found that construction of the on-lot improvements for Proposed Project 2 would not create a significant vibration impact. Therefore, vibration impacts during construction of the collection system's on-lot improvements for Proposed Project 3 would be less than significant.

The analysis above found that the pile driving associated with construction of the pump stations for the in-town collection system for Proposed Project 2 would create a significant vibration impact. Therefore, vibration impacts during construction of the collection system's in-town collection system for Proposed Project 3 would create significant impacts.

The analysis above found that construction of the out of town conveyance system for Proposed Project 2 would not create a significant vibration impact. Therefore, vibration impacts during construction of the collection system's out of town conveyance system for Proposed Project 3 would be less than significant.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 3 would be the same system as described for Proposed Project 2 with the addition of a seasonal storage pond on the Branin site. The construction of the storage pond would be constructed at the same time as the rest of the treatment plant site and would require similar construction equipment. In addition, no sensitive receptors are located adjacent to the Branin site. The analysis above found that construction of the treatment plant

site for Proposed Project 2 would not create a significant vibration impact. Therefore, vibration impacts during construction of the treatment plant site for Proposed Project 3 would be less than significant.

Disposal Sites

The effluent disposal for Proposed Project 3 would be the same system as described for Proposed Project 1. The analysis above found that construction of the disposal sites for Proposed Project 1 would not create a significant vibration impact. Therefore, vibration impacts during construction of the disposal sites for Proposed Project 3 would be less than significant.

Combined Project Effects

The combined project construction-related vibration impacts for Proposed Project 3 would be similar as described for Proposed Project 1, except the combined construction activities would create only 70 truck round trips per day versus the 102 truck round trips per day for Proposed Project 1. The analysis above for Proposed Project 1 found that the combined project construction vibration impacts would not create a significant impact. Therefore, the combined project vibration impacts during construction of Proposed Project 3 would be less than significant.

The combined project on-going operations vibration impacts for Proposed Project 3 would be similar as described for Proposed Project 1, and would create the same 36 truck trips per day. The analysis above for Proposed Project 1 found that the combined project on-going operations would create a less than significant vibration impact due to the operation of trucks on dirt roads. Therefore, the combined project on-going operations for Proposed Project 3 would also create a less than significant vibration impact.

Proposed Project 4

Collection System

The collection system for Proposed Project 4 would be the same system as described for Proposed Project 2, which would consist of a conventional gravity collection system. Construction of a gravity system would consist of; (1) on-lot improvements; (2) gravity collection system; and (3) out-of-town conveyance system.

The analysis above found that construction of the on-lot improvements for Proposed Project 2 would not create a significant vibration impact. Therefore, vibration impacts during construction of the collection system's on-lot improvements for Proposed Project 4 would be less than significant.

The analysis above found that the pile driving associated with construction of the pump stations for the in-town collection system for Proposed Project 2 would create a significant vibration impact. Therefore, vibration impacts during construction of the collection system's in-town collection system for Proposed Project 4 would create significant impact.

The analysis above found that construction of the out of town conveyance system for Proposed Project 2 would not create a significant vibration impact. Therefore, vibration impacts during construction of the collection system's out of town conveyance system for Proposed Project 4 would be less than significant.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 4 would consist of the raw wastewater being transported to the Tonini site where the raw wastewater would then be treated through the use of facultative ponds. The greatest construction noise impacts are anticipated to occur during the grading operations when the simultaneous operation of two tracked earthmovers, three wheeled earthmovers, two graders, one compaction roller, three backhoes, two excavators, two mobile cranes, 10 pickup trucks (two onsite), three small dump trucks, one water truck, and one asphalt compactor may operate simultaneously. According to Table 5.10-2, a large bulldozer would produce the largest vibration level of 87 VdB or 0.089 inches per second at 25 feet. The nearest vibration sensitive land use is a single-family home located approximately 350 feet south of the Tonini site. A dozer operating on the southeastern portion of the Tonini site would produce a vibration level of 54.1 VdB or 0.0005 inches per second at the nearest residence. This vibration level would not exceed the the 0.2 inches per second or 94 VdB threshold discussed above. Therefore, vibration impacts during construction of the Tonini Treatment Plant site for Proposed Project 4 would be less than significant.

Disposal Sites

The effluent disposal for Proposed Project 4 would be the same system as described for Proposed Project 1. The analysis above found that construction of the disposal sites for Proposed Project 1 would not create a significant vibration impact. Therefore, vibration impacts during construction of the disposal sites for Proposed Project 4 would be less than significant.

Combined Project Effects

The combined project construction-related vibration impacts for Proposed Project 4 would be similar as described for Proposed Project 1, except the combined construction activities would create only 71 truck round trips per day versus the 102 truck round trips per day for Proposed Project 1. The analysis above for Proposed Project 1 found that the combined project construction vibration impacts would not create a significant impact. Therefore, the combined project vibration impacts during construction of Proposed Project 4 would be less than significant.

The combined project on-going operations vibration impacts for Proposed Project 4 would be similar as described for Proposed Project 1, and would create the same 36 truck trips per day. The analysis above for Proposed Project 1 found that the combined project on-going operations would create a less than significant vibration impact due to the operation of trucks on dirt roads. Therefore, the combined project on-going operations for Proposed Project 4 would create a less than significant vibration impact.

Cumulative Impact Analysis

Proposed Projects 1 through 4

Related projects within the greater cumulative project area are detailed in Section 4.2 and Exhibit 4.2-1 in the Draft EIR. Three of the nine related projects (Los Osos CSD Waterline Replacement, Los Osos Valley Road Palisades Storm Drain, and AT&T Cable) physically overlap with the study area for the proposed project but are either completed or expected to be completed by the time that construction of the proposed project is anticipated to begin (2010). Six of the nine related projects (State Park Marina Renovation, Morro Bay Wastewater Treatment Plant, Dredging of Morro Bay, CMC Wastewater Treatment Plant, Phase II Steam Generator Replacement at Diablo, and Spent Fuel Storage Facility at Diablo) have no physical overlap with the proposed project. The two related Diablo projects are in fact nearly 7 miles south of Los Osos. Therefore, since there are no related projects that would contribute to cumulative noise impacts, implementation of Proposed Projects 1 through 4 would not contribute to cumulative noise impacts.

Mitigation Measures

Project-Specific

Proposed Project 1

No mitigation measures are required.

Proposed Project 2

5.10-B1 The construction contractor shall notify all property owners and tenants adjacent to the proposed pile driving activities of the days and hours of operation. Prior to construction activities associated with the pile driving, the construction contractor shall inspect all structures within 100 feet of the proposed pile driving to document existing characteristics of the structures. If damages to structures (i.e., residences and pools) occur during the pile driving, the property owner shall be financially compensated by the construction contractor to remediate damages. These provisions shall be placed on all construction documents.

Proposed Project 3

Implementation of Mitigation Measures 5.10-B1 is required.

Proposed Project 4

Implementation of Mitigation Measures 5.10-B1 is required.

Cumulative

Proposed Projects 1 through 4

No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific

Proposed Project 1

Less than significant.

Proposed Project 2

Less than significant.

Proposed Project 3

Less than significant.

Proposed Project 4

Less than significant.

Cumulative

Proposed Projects 1 through 4

Less than significant.

Temporary or Periodic Increase in Ambient Noise Levels

5.10-C:	**The project could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.**

Project-Specific Impact Analysis

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

The construction activities for the proposed project have been analyzed below separately for the collection system, treatment plant site, and disposal site as well as the combined project traffic noise impacts for each of the four proposed projects.

Proposed Project 1

Collection System

The collection system for Proposed Project 1 would consist of a septic tank effluent (STE) collection system. The STE system would consist of a septic tank located at each connection, where the solids would settle out of the sewage. The remaining effluent would then either have a septic tank effluent pump (STEP) or a septic tank effluent gravity (STEG) collection line that would transport the effluent to the pressurized street collection system pipeline, which would run to the treatment facility. Since the collection system is under pressure, no central pump system is required, however pressure cleanouts are required along the line as well as air-vacuum valves are required at high points in the pressurized collection system. Construction of a STE system would consist of; (1) on-lot

improvements, which would include the installation of a STEP/STEG tank with or without an effluent pump; (2) in-town collection system; and (3) out-of-town conveyance system.

The on-lot improvements would consist of re-routing house laterals, abandoning or re-purposing the existing septic tank and installing new STEP/STEG tanks The installation of each tank would require the excavation of approximately 40 cubic yards per site, and would result in 15 cubic yards of export material. Given the swell characteristics of the sandy soil, it can be estimated that three truck loads of excavated material would have to be hauled off of each site. Although the construction equipment would vary for the installation of the tanks it would generally consist of one rubber tired backhoe, a crane, and various service vehicles. The total system would require the installation of 4,679 STEP/STEG tanks that would require 6,000 material delivery truck trips, 7,200 truck trips for excavated material, and 4,000 miscellaneous truck trips for a total of 17,200 truck trips.

The in-town collection system and out-of-town conveyance system would consist of the installation of approximately 50,300 linear feet of 6-, 8-, and 10-inch sewer line and 203,600 linear feet of 2- and 3-inch line. The larger diameter pipe would likely be installed through conventional cut techniques, which would result in the excavation of approximately 28,000 cubic yards and would require the export of 4,200 cubic yards or 420 truck loads. The smaller diameter lines could be installed utilizing directional drill techniques that would limit the surface disruption to the individual lot connections and for air relief valves and flushing ports, which would result in the excavation of 18,000 cubic yards and would require the export of 2,700 cubic yards or 270 truck loads. Although the construction equipment would vary between crews it would generally consist of one track-mounted excavator, one front end loader, one rubber tired backhoe with front end loader, one service truck, and one directional drill.

The out of town conveyance system for Proposed Project 1 would consist of a line that would transport the wastewater from Los Osos to the Giacomazzi treatment plant site and another line that would convey the treated effluent from the Giacomazzi treatment plant site to the Broderson Leachfield, and the Tonini Sprayfield. The wastewater line would be 18,700 feet long and would require the excavation of 10,400 cubic yards of material and export of 1,600 cubic yards or 160 truck loads. The treated effluent line would be 26,800 feet long and would require the excavation of 15,000 cubic yards of material and export of 2,400 cubic yards or 240 truck loads. Although the construction equipment would vary between crews it would generally consist of one track-mounted excavator, one front end loader, one rubber tired backhoe with front end loader, one service truck, a dewatering pump, and various pickup trucks.

Construction noise impacts onto the nearby sensitive receptors have been calculated according to the methodology presented above and through use of the RCNM. The construction noise has been analyzed separately for the construction of the STEP/STEG tanks, collection system, and conveyance system and have been based on the construction equipment assumptions stated above. The construction equipment was spread out over 50 feet with the equipment located as near as 10 feet to

the sensitive receptors for the installation of the tanks and as near as 25 feet to the sensitive receptor for the installation of the collection and conveyance system. The construction noise impacts associated with the construction of the STE system are shown below in Table 5.10-33 and the RCNM printouts are provided in Appendix L-2.

Table 5.10-33: Noise Impacts from Construction of the STE Collection System

Construction Activity	Nearest Distance from Sensitive Receptor	Construction Equipment Noise Levels	
		dBA L_{eq}	dBA L_{max}
Installation of Tanks	10 feet	88.0	91.5
Installation of Collection System	25 feet	84.5	86.7
Installation of Conveyance System	25 feet	85.5	87.0
Source: Roadway Construction Noise Model (RCNM) Version 1.00.			

Table 5.10-33 above shows that the greatest noise impacts associated with the construction of the STE collection system would occur during the installation of the STEP/STEG tanks at the residences, with an average noise level of 88.0 L_{eq} and a peak noise level of 91.5 dBA L_{max}. The STE collection system construction noise would exceed the County stationary noise standards of 50 dBA L_{eq} and 70 dBA L_{max}, therefore a significant temporary noise impact would occur.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 1 would consist of the raw wastewater being transported to the combined Cemetery/Giacomazzi/Branin site where the raw wastewater would then be treated through the use of facultative ponds. The area required for the ponds is estimated to be 20-acres. Approximately 32-acres would be disturbed during construction of the treatment plant site and would include excavation for the new facilities, site grading for stormwater drainage, and staging areas for construction equipment and supplies. The greatest construction noise impacts are anticipated to occur during the grading operations when the simultaneous operation of two tracked earthmovers, three wheeled earthmovers, two graders, one compaction roller, three backhoes, two excavators, two mobile cranes, 10 pickup trucks (two onsite), three small dump trucks, one water truck, and one asphalt compactor may operate simultaneously.

Construction noise impacts onto the nearby sensitive receptors have been calculated according to the methodology presented above and through use of the RCNM. The nearest residence is located approximately 200 feet west of the Giacomazzi site. The construction noise has been analyzed based on the construction equipment assumptions stated above. The construction equipment was spread out over 1,000 feet with the equipment located as near as 200 feet to the sensitive receptor. The RCNM found that construction of the Cemetery/Giacomazzi/Branin treatment plant site would create a noise level of 70.9 dBA L_{eq} at the nearest residence. This would exceed the County stationary noise

standards of 50 dBA L_{eq} and 70 dBA L_{max}, therefore a significant temporary noise impact would occur.

Disposal Sites

The effluent disposal for Proposed Project 1 would occur at both the Broderson Leachfield and Tonini Sprayfield. The Tonini Sprayfield would dispose of the water through evapotranspiration and percolation. The sprayfield would consist of irrigation lines with detachable sprinklers that are approximately 30 feet apart and would cover the approximately 175-acre area. At the bottom of the sprayfield a drain would be constructed to collect the run-off, which would then be reapplied to the sprayfield. Construction of the sprayfield would require the simultaneous operation of one dozer and one grader.

The Broderson Leachfield would dispose of the effluent through percolation, which has a capacity of 448-acre feet per year. The leachfield would consist of an 8-acre area excavated to an average depth of 6.5 feet and backfilled with a 4-foot layer of gravel for drainage, which would be covered geotextile fabric. Final cover would consist of a minimum of 2.5 feet of native soil back fill. The percolation piping would consist of 4-inch perforated pipe that would be installed beneath the geotextile fabric. Construction of the leachfield would require the simultaneous operation of one dozer and two scrappers.

Construction noise impacts onto the nearby sensitive receptors have been calculated according to the methodology presented above and through use of the RCNM. The construction noise has been analyzed separately for the construction of the Tonini Sprayfield and the Broderson Leachfield and have been based on the construction equipment assumptions stated above. The nearest residence is located approximately 350 feet south of the Tonini Sprayfield and approximately 100 feet west of the Broderson Leachfield. The construction noise impacts associated with the construction of the disposal sites are shown below in Table 5.10-34.

Table 5.10-34: Noise Impacts from Construction of the Disposal Sites

Construction Activity	Nearest Distance from Sensitive Receptor	Construction Equipment Noise Levels	
		dBA L_{eq}	dBA L_{max}
Tonini Sprayfield	350 feet	65.2	66.7
Broderson Leachfield	100 feet	75.4	77.6
Source: Roadway Construction Noise Model (RCNM) Version 1.00.			

Table 5.10-34 above shows that the greatest noise impacts associated with the construction of the disposal sites would occur during construction of the Broderson Leachfield, with an average noise level of 75.4 L_{eq} and a peak noise level of 77.6 dBA L_{max} at the nearest residence. The construction noise from both disposal sites would exceed the County stationary noise standards of 50 dBA L_{eq} and 70 dBA L_{max}, therefore a significant temporary noise impact would occur.

Combined Project Effects

The collection system, treatment plant site, and disposal sites for the most part are not near one another. If multiple portions of Proposed Project 1 were under construction at the same time, the combined noise levels at the nearby sensitive receptors would not create a noticeable increase over the construction noise levels calculated above for the different sites. However, construction of each site would produce additional on-road vehicular traffic, which may create a combined traffic noise impact. Construction activities associated with Proposed Project 1 would generate an additional 245 vehicular roundtrips on the project area roadways per day.

In order to quantify the construction traffic noise impacts along the analyzed roadways, the roadway noise contours were calculated. These contours were calculated by determining the difference between the existing project ADT and the existing plus project ADT. This amount was then multiplied by the percent increase of the construction ADT over the operations ADT for Proposed Project 1. The calculated existing plus Proposed Project 1 construction traffic noise contours are shown below in Table 5.10-35.

Table 5.10-35: Existing Plus Proposed Project 1 Construction Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.1	RW	75	162	348
Los Osos Valley Road	East of Broderson Avenue	63.4	RW	78	168	361
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	64.9	RW	99	213	460
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	65.8	53	113	245	527
Los Osos Valley Road	East of 10th Street	66.0	54	117	252	544
Los Osos Valley Road	East of South Bay Boulevard	66.0	54	116	251	540
Los Osos Valley Road	West of Turri Road	65.7	52	112	240	518
Los Osos Valley Road	East of Turri Road	65.7	52	112	241	520
Broderson Avenue	South of Los Osos Valley Road	44.0	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	51.6	RW	RW	RW	60

Table 5.10-35 (Cont.): Existing Plus Proposed Project 1 Construction Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Bayview Heights Drive	South of Los Osos Valley Road	48.1	RW	RW	RW	34
10th Street	North of Los Osos Valley Road	51.0	RW	RW	RW	54
South Bay Boulevard	North of Los Osos Valley Road	64.1	RW	87	187	402
South Bay Boulevard	South of Los Osos Valley Road	44.6	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	42.5	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-35 shows that at 100 feet from the centerline, compared with the existing baseline condition, no additional roadway segments would exceed the County's 60-dBA CNEL standard in addition to those already existing. The noise levels from all analyzed roadway segments would range from 42.5 to 66.0 dBA CNEL.

The noise levels calculated in each roadway segment for the existing plus Proposed Project 1 construction traffic condition have been compared against the existing conditions below in Table 5.10-36 in order to show any potential increases in construction traffic noise.

Table 5.10-36: Proposed Project 1 Construction Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.0	63.1	0.1	No
Los Osos Valley Road	East of Broderson Avenue	63.3	63.4	0.1	No
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	64.9	64.9	0.0	No
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	65.8	65.8	0.0	No

Table 5.10-36 (Cont.): Proposed Project 1 Construction Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	East of 10th Street	66.0	66.0	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	65.9	66.0	0.1	No
Los Osos Valley Road	West of Turri Road	65.7	65.7	0.0	No
Los Osos Valley Road	East of Turri Road	65.7	65.7	0.0	No
Broderson Avenue	South of Los Osos Valley Road	42.5	44.0	1.5	No
9th Street	North of Los Osos Valley Road	51.6	51.6	0.0	No
Bayview Heights Drive	South of Los Osos Valley Road	48.1	48.1	0.0	No
10th Street	North of Los Osos Valley Road	51.0	51.0	0.0	No
South Bay Boulevard	North of Los Osos Valley Road	64.1	64.1	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	44.6	44.6	0.0	No
Turri Road	North of Los Osos Valley Road	42.5	42.5	0.0	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-36 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 1.5 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 1.5 dBA would occur at Broderson Avenue south of Los Osos Valley Road. Since the no project noise level is 42.5 dBA CNEL at Broderson Avenue south of Los Osos Valley Road, a 1.5-dBA noise increase would be below the County's thresholds of significance. Therefore, for the existing conditions and based on thresholds of significance defined above, no significant short-term noise impacts from Proposed Project 1 construction vehicle noise would occur along the study area roadways segments.

Proposed Project 2

Collection System

The collection system for Proposed Project 2 would consist of a conventional gravity collection system. Construction of a gravity system would consist of; (1) on-lot improvements; (2) gravity collection system; and (3) out-of-town conveyance system.

The on-lot improvements for Proposed Project 2 would consist of abandoning existing septic tank and rerouting house lateral pipes to connect to the sewer system. Approximately 75 percent of the homes currently have their septic tank in the front yard and the remainder have the septic tank in the backyard. Construction of a new lateral from the front yard would require the installation of approximately 25 feet of 4-inch pipe, while the from the backyard it would require the installation of approximately 75 feet of 4-inch pipe and for 5 percent of the homes a low pressure grinder pump would have to be installed as well. Each homeowner would be responsible for the onsite rerouting of the sewer lateral. Construction equipment used during the installation of the onsite sewer laterals would most likely include a rubber-tired backhoe and service vehicles.

The in-town collection system for Proposed Project 2 would consist of both gravity sewers and force mains that would convey the wastewater to the Mid-Town site. Construction of the in-town collection system would consist of 230,000 linear feet of pipe, 907 manholes, 5 duplex pump stations, 2 triplex pump stations, 12 pocket pump stations, standby power facilities, and 4,679 laterals. The sewer mains would range from 8- to 18-inch diameter pipe and would be buried at an average depth of 8 feet and a maximum depth of 18 feet. Approximately 270,000 cubic yards of material would be excavated during the trenching operations and would require the export of approximately 40,500 cubic yards or 4,050 truck trips. In addition the construction of the 19 pump stations would require the export of approximately 1,200 cubic yards or 150 truck trips. Although the construction equipment would vary between crews it would generally consist of one track-mounted excavator, one front end loader, one rubber tired backhoe with front end loader, one service truck, dewatering pumps, and various pickup trucks. The construction of the pump stations would require cranes and possibly pile driving equipment in addition to the equipment listed above. The pile driving equipment would be necessary when groundwater fills the area being excavated quicker than the pumps can drain it. The pile driving would consist of either driving steel sheets down on the edge of the excavation area to slow the water down or to drive concrete caissons into the ground and where a precast pump station is placed on top of the caissons.

The out of town conveyance system for Proposed Project 2 would be the same system as described for Proposed Project 1, which found that construction activities would create an average noise level of 85.5 L_{eq} and a peak noise level of 87.0 dBA L_{max}. The construction noise from the out of town conveyance system would exceed the County stationary noise standards of 50 dBA L_{eq} and 70 dBA L_{max}, therefore a significant temporary noise impact would occur.

Construction noise impacts onto the nearby sensitive receptors have been calculated according to the methodology presented above and through use of the RCNM. The construction noise has been analyzed separately for the construction of the onsite laterals, the collection system, and pump stations and have been based on the construction equipment assumptions stated above. The construction equipment was spread out over 50 feet with the equipment located as near as 10 feet to the sensitive receptors for the installation of the onsite laterals and as near as 25 feet to the sensitive receptor for the installation of the collection system and pump stations. The construction noise impacts associated with the construction of the conventional gravity collection system are shown below in Table 5.10-37.

Table 5.10-37: Noise Impacts from Construction of the Gravity Collection System

Construction Activity	Nearest Distance from Sensitive Receptor	Construction Equipment Noise Levels	
		dBA L_{eq}	dBA L_{max}
Installation of Onsite Lateral	10 feet	87.9	91.5
Installation of Collection System	25 feet	85.4	87.0
Installation of Pump Stations	25 feet	100.4	107.3
Installation of Conveyance System	25 feet	85.5	87.0
Source: Roadway Construction Noise Model (RCNM) Version 1.00.			

Table 5.10-37 above shows that the greatest noise impacts associated with the construction of the gravity collection system would occur during the installation of the pump stations, when pile driving is utilized, with an average noise level of 100.4 L_{eq} and a peak noise level of 107.3 dBA L_{max}. The gravity collection system construction noise would exceed the County stationary noise standards of 50 dBA L_{eq} and 70 dBA L_{max}, therefore a significant temporary noise impact would occur.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 2 would consist of the raw wastewater being transported to the Giacomazzi site where the raw wastewater would then be treated through the use of an oxidation ditch or biolac. An oxidation ditch and biolac are different process systems but they share similar area requirements, which is estimated to be 10-acres. Approximately 6-acres at the Giacomazzi site would be utilized for biosolid processing and 4-acres would be utilized for appurtenant structures. The treatment plant site would require the excavation of approximately 28,600 cubic yards of material and the export of approximately 3,177 cubic yards or 353 truck loads. The greatest construction noise impacts are anticipated to occur during the grading operations when the simultaneous operation of two tracked earthmovers, three wheeled earthmovers, two graders, one compaction roller, three backhoes, two excavators, two mobile cranes, 15 concrete trucks (two onsite), one concrete pumper truck, 10 pickup trucks (two onsite), three small dump trucks, one water truck, and one asphalt compactor may operate simultaneously.

Construction noise impacts onto the nearby sensitive receptors have been calculated according to the methodology presented above and through use of the RCNM. The nearest residence is located approximately 200 feet west of the Giacomazzi site. The construction noise has been analyzed based on the construction equipment assumptions stated above. The construction equipment was spread out over 1,000 feet with the equipment located as near as 200 feet to the sensitive receptor. The RCNM found that construction of the Giacomazzi treatment plant site would create a noise level of 71.0 dBA L_{eq} at the nearest residence. This would exceed the County stationary noise standards of 50 dBA L_{eq} and 70 dBA L_{max}, therefore a significant temporary noise impact would occur.

Disposal Sites

The effluent disposal for Proposed Project 2 would be the same system as described for Proposed Project 1 with the addition of a seasonal storage pond at the Tonini Sprayfield. The construction of the storage pond would be constructed at the same time as the rest of the sprayfield and would require similar construction equipment. Therefore the construction noise impacts would be similar to what was calculated above for Proposed Project 1. The analysis of Proposed Project 1 found that the greatest noise impacts associated with the construction of the disposal sites would occur during construction of the Broderson Leachfield, with an average noise level of 75.4 L_{eq} and a peak noise level of 77.6 dBA L_{max} at the nearest residence. The construction noise from both disposal sites would exceed the County stationary noise standards of 50 dBA L_{eq} and 70 dBA L_{max}, therefore a significant temporary noise impact would occur.

Combined Project Effects

The collection system, treatment plant site, and disposal sites for the most part are not near one another. If multiple portions of Proposed Project 2 were under construction at the same time, the combined noise levels at the nearby sensitive receptors would not create a noticeable increase over the construction noise levels calculated above for the different sites. However, construction of each site would produce additional on-road vehicular traffic, which may create a combined traffic noise impact. Construction activities associated with Proposed Project 2 would generate an additional 181 vehicular roundtrips on the project area roadways per day.

In order to quantify the construction traffic noise impacts along the analyzed roadways, the roadway noise contours were calculated. These contours were calculated by determining the difference between the existing project ADT and the existing plus project ADT. This amount was then multiplied by the percent increase of the construction ADT over the operations ADT for Proposed Project 2. The calculated existing plus Proposed Project 2 construction traffic noise contours are shown below in Table 5.10-38.

Table 5.10-38: Existing Plus Proposed Project 2 Construction Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.1	RW	75	162	348
Los Osos Valley Road	East of Broderson Avenue	63.3	RW	77	165	356
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	64.9	RW	99	213	460
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	65.8	53	113	245	527
Los Osos Valley Road	East of 10th Street	66.0	54	117	252	544
Los Osos Valley Road	East of South Bay Boulevard	65.9	54	115	249	535
Los Osos Valley Road	West of Turri Road	65.7	52	112	240	518
Los Osos Valley Road	East of Turri Road	65.7	52	112	241	520
Broderson Avenue	South of Los Osos Valley Road	44.0	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	51.6	RW	RW	RW	60
Bayview Heights Drive	South of Los Osos Valley Road	48.1	RW	RW	RW	34
10th Street	North of Los Osos Valley Road	51.0	RW	RW	RW	54
South Bay Boulevard	North of Los Osos Valley Road	64.1	RW	87	187	402
South Bay Boulevard	South of Los Osos Valley Road	44.6	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	42.5	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-38 shows that at 100 feet from the centerline, compared with the existing baseline condition, no additional roadway segments would exceed the County's 60-dBA CNEL standard in addition to those already existing. The noise levels from all analyzed roadway segments would range from 42.5 to 66.0 dBA CNEL.

The noise levels calculated in each roadway segment for the existing plus Proposed Project 2 construction traffic condition have been compared against the existing condition below in Table 5.10-39 in order to show any potential increases in construction traffic noise.

Table 5.10-39: Proposed Project 2 Construction Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.0	63.1	0.1	No
Los Osos Valley Road	East of Broderson Avenue	63.3	63.3	0.0	No
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	64.9	64.9	0.0	No
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	65.8	65.8	0.0	No
Los Osos Valley Road	East of 10th Street	66.0	66.0	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	65.9	65.9	0.0	No
Los Osos Valley Road	West of Turri Road	65.7	65.7	0.0	No
Los Osos Valley Road	East of Turri Road	65.7	65.7	0.0	No
Broderson Avenue	South of Los Osos Valley Road	42.5	44.0	1.5	No
9th Street	North of Los Osos Valley Road	51.6	51.6	0.0	No
Bayview Heights Drive	South of Los Osos Valley Road	48.1	48.1	0.0	No
10th Street	North of Los Osos Valley Road	51.0	51.0	0.0	No
South Bay Boulevard	North of Los Osos Valley Road	64.1	64.1	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	44.6	44.6	0.0	No
Turri Road	North of Los Osos Valley Road	42.5	42.5	0.0	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-39 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 1.5 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 1.5 dBA would occur at Broderson Avenue south of Los Osos Valley Road. Since the

no project noise level is 42.5 dBA CNEL at Broderson Avenue south of Los Osos Valley Road, a 1.5-dBA noise increase would be below the County's thresholds of significance. Therefore, for the existing conditions and based on thresholds of significance defined above, no significant short-term noise impacts from Proposed Project 2 construction vehicle noise would occur along the study area roadways segments.

Proposed Project 3

Collection System

The collection system for Proposed Project 3 would be the same system as described for Proposed Project 2, which would consist of a conventional gravity collection system. The analysis of Proposed Project 2 found that the greatest noise impacts associated with the construction of the gravity collection system would occur during the installation of the pump stations, when pile driving is utilized, with an average noise level of 100.4 L_{eq} and a peak noise level of 107.3 dBA L_{max}. The gravity collection system construction noise would exceed the County stationary noise standards of 50 dBA L_{eq} and 70 dBA L_{max}, therefore a significant temporary noise impact would occur.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 3 would be the same system as described for Proposed Project 2 with the addition of a seasonal storage pond on the Branin site. The construction of the storage pond would be constructed at the same time as the rest of the treatment plant site and would require similar construction equipment. In addition, no sensitive receptors are located adjacent to the Branin site. Therefore the construction noise impacts would be similar to what was calculated above for Proposed Project 2. The analysis of Proposed Project 2 found that construction of the Giacomazzi treatment plant site would create a noise level of 71.0 dBA L_{eq} at the nearest residence. The construction noise from the Giacomazzi and Branin sites would exceed the County stationary noise standard of 50 dBA L_{eq}, therefore a significant temporary noise impact would occur.

Disposal Sites

The effluent disposal for Proposed Project 3 would be the same system as described for Proposed Project 1. The analysis of Proposed Project 1 found that the greatest noise impacts associated with the construction of the disposal sites would occur during construction of the Broderson Leachfield, with an average noise level of 75.4 L_{eq} and a peak noise level of 77.6 dBA L_{max} at the nearest residence. The construction noise from both disposal sites would exceed the County stationary noise standards of 50 dBA L_{eq} and 70 dBA L_{max}, therefore a significant temporary noise impact would occur.

Combined Project Effects

The collection system, treatment plant site, and disposal sites for the most part are not near one another. If multiple portions of Proposed Project 3 were under construction at the same time, the combined noise levels at the nearby sensitive receptors would not create a noticeable increase over the construction noise levels calculated above for the different sites. However, construction of each

site would produce additional on-road vehicular traffic, which may create a combined traffic noise impact. Construction activities associated with Proposed Project 3 would generate an additional 182 vehicular roundtrips on the project area roadways per day.

In order to quantify the construction traffic noise impacts along the analyzed roadways, the roadway noise contours were calculated. These contours were calculated by determining the difference between the existing project ADT and the existing plus project ADT. This amount was then multiplied by the percent increase of the construction ADT over the operations ADT for Proposed Project 3. The calculated existing plus Proposed Project 3 construction traffic noise contours are shown below in Table 5.10-40.

Table 5.10-40: Existing Plus Proposed Project 3 Construction Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.1	RW	75	162	348
Los Osos Valley Road	East of Broderson Avenue	63.3	RW	77	165	356
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	64.9	RW	99	213	460
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	65.8	53	113	245	527
Los Osos Valley Road	East of 10th Street	66.0	54	117	252	544
Los Osos Valley Road	East of South Bay Boulevard	65.9	54	115	249	535
Los Osos Valley Road	West of Turri Road	65.7	52	112	240	518
Los Osos Valley Road	East of Turri Road	65.7	52	112	241	520
Broderson Avenue	South of Los Osos Valley Road	44.0	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	51.6	RW	RW	RW	60
Bayview Heights Drive	South of Los Osos Valley Road	48.1	RW	RW	RW	34
10th Street	North of Los Osos Valley Road	51.0	RW	RW	RW	54
South Bay Boulevard	North of Los Osos Valley Road	64.1	RW	87	187	402

Table 5.10-40 (Cont.): Existing Plus Proposed Project 3 Construction Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
South Bay Boulevard	South of Los Osos Valley Road	44.6	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	42.5	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-40 shows that at 100 feet from the centerline, compared with the existing baseline condition, no additional roadway segments would exceed the County's 60-dBA CNEL standard in addition to those already existing. The noise levels from all analyzed roadway segments would range from 42.5 to 66.0 dBA CNEL.

The noise levels calculated in each roadway segment for the existing plus Proposed Project 3 construction traffic condition have been compared against the existing condition below in Table 5.10-41 in order to show any potential increases in construction traffic noise.

Table 5.10-41: Proposed Project 3 Construction Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.0	63.1	0.1	No
Los Osos Valley Road	East of Broderson Avenue	63.3	63.3	0.0	No
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	64.9	64.9	0.0	No
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	65.8	65.8	0.0	No
Los Osos Valley Road	East of 10th Street	66.0	66.0	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	65.9	65.9	0.0	No
Los Osos Valley Road	West of Turri Road	65.7	65.7	0.0	No
Los Osos Valley Road	East of Turri Road	65.7	65.7	0.0	No

Table 5.10-41 (Cont.): Proposed Project 3 Construction Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Broderson Avenue	South of Los Osos Valley Road	42.5	44.0	1.5	No
9th Street	North of Los Osos Valley Road	51.6	51.6	0.0	No
Bayview Heights Drive	South of Los Osos Valley Road	48.1	48.1	0.0	No
10th Street	North of Los Osos Valley Road	51.0	51.0	0.0	No
South Bay Boulevard	North of Los Osos Valley Road	64.1	64.1	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	44.6	44.6	0.0	No
Turri Road	North of Los Osos Valley Road	42.5	42.5	0.0	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-41 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 1.5 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 1.5 dBA would occur at Broderson Avenue south of Los Osos Valley Road. Since the no project noise level is 42.5 dBA CNEL at Broderson Avenue south of Los Osos Valley Road, a 1.5-dBA noise increase would below the County's thresholds of significance. Therefore, for the existing conditions and based on thresholds of significance defined above, no significant short-term noise impacts from Proposed Project 3 construction vehicle noise would occur along the study area roadways segments.

Proposed Project 4

Collection System

The collection system for Proposed Project 4 would be the same system as described for Proposed Project 2, which would consist of a conventional gravity collection system. The analysis of Proposed Project 2 found that the greatest noise impacts associated with the construction of the gravity collection system would occur during the installation of the pump stations, when pile driving is utilized, with an average noise level of 100.4 L_{eq} and a peak noise level of 107.3 dBA L_{max}. The gravity collection system construction noise would exceed the County stationary noise standards of 50 dBA L_{eq} and 70 dBA L_{max}, therefore a significant temporary noise impact would occur.

Treatment Plant Site

The treatment of the raw wastewater for Proposed Project 4 would consist of the raw wastewater being transported to the Tonini site where the raw wastewater would then be treated through the use of facultative ponds. The area required for the ponds is estimated to be 20-acres. Approximately 32-acres of the Tonini site would be disturbed during construction of the treatment plant site and would include excavation for the new facilities, site grading for stormwater drainage, and staging areas for construction equipment and supplies. The greatest construction noise impacts are anticipated to occur during the grading operations when the simultaneous operation of two tracked earthmovers, three wheeled earthmovers, two graders, one compaction roller, three backhoes, two excavators, two mobile cranes, 10 pickup trucks (two onsite), three small dump trucks, one water truck, and one asphalt compactor may operate simultaneously.

Construction noise impacts onto the nearby sensitive receptors have been calculated according to the methodology presented above and through use of the RCNM. The nearest residence is located approximately 350 feet south of the Tonini site. The construction noise has been analyzed based on the construction equipment assumptions stated above. The construction equipment was spread out over 1,000 feet with the equipment located as near as 200 feet to the sensitive receptor. The RCNM found that construction of the treatment plant portion of the Tonini site would create a noise level of 60.0 dBA L_{eq} at the nearest residence. This would exceed the County stationary noise standard of 50 dBA L_{eq}, therefore a significant temporary noise impact would occur.

Disposal Sites

The effluent disposal for Proposed Project 4 would be the same system as described for Proposed Project 1. The analysis of Proposed Project 1 found that the greatest noise impacts associated with the construction of the disposal sites would occur during construction of the Broderson Leachfield, with an average noise level of 75.4 L_{eq} and a peak noise level of 77.6 dBA L_{max} at the nearest residence. The construction noise from both disposal sites would exceed the County stationary noise standards of 50 dBA L_{eq} and 70 dBA L_{max}, therefore a significant temporary noise impact would occur.

Combined Project Effects

The collection system, treatment plant site, and disposal sites for the most part are not near one another. If multiple portions of Proposed Project 4 were under construction at the same time, the combined noise levels at the nearby sensitive receptors would not create a noticeable increase over the construction noise levels calculated above for the different sites. However, construction of each site would produce additional on-road vehicular traffic, which may create a combined traffic noise impact. Construction activities associated with Proposed Project 4 would generate an additional 183 vehicular roundtrips on the project area roadways per day.

In order to quantify the construction traffic noise impacts along the analyzed roadways, the roadway noise contours were calculated. These contours were calculated by determining the difference between the existing project ADT and the existing plus project ADT. This amount was then

multiplied by the percent increase of the construction ADT over the operations ADT for Proposed Project 4. The calculated existing plus Proposed Project 4 construction traffic noise contours are shown below in Table 5.10-42.

Table 5.10-42: Existing Plus Proposed Project 4 Construction Traffic Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Los Osos Valley Road	West of Broderson Avenue	63.1	RW	75	162	348
Los Osos Valley Road	East of Broderson Avenue	63.3	RW	77	165	356
Los Osos Valley Road	West of 9th Street/ Bayview Heights Drive	64.9	RW	99	213	460
Los Osos Valley Road	East of 9th Street/ Bayview Heights Drive	65.8	53	113	245	527
Los Osos Valley Road	East of 10th Street	66.0	54	116	251	540
Los Osos Valley Road	East of South Bay Boulevard	65.9	54	115	249	535
Los Osos Valley Road	West of Turri Road	65.7	52	112	240	518
Los Osos Valley Road	East of Turri Road	65.7	52	112	241	520
Broderson Avenue	South of Los Osos Valley Road	44.0	RW	RW	RW	RW
9th Street	North of Los Osos Valley Road	51.6	RW	RW	RW	60
Bayview Heights Drive	South of Los Osos Valley Road	48.1	RW	RW	RW	34
10th Street	North of Los Osos Valley Road	51.0	RW	RW	RW	54
South Bay Boulevard	North of Los Osos Valley Road	64.1	RW	87	187	402
South Bay Boulevard	South of Los Osos Valley Road	44.6	RW	RW	RW	RW
Turri Road	North of Los Osos Valley Road	45.1	RW	RW	RW	RW

RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2008.

Table 5.10-42 shows that at 100 feet from the centerline, compared with the existing baseline condition, no additional roadway segments would exceed the County's 60-dBA CNEL standard in

addition to those already existing. The noise levels from all analyzed roadway segments would range from 44.0 to 66.0 dBA CNEL.

The noise levels calculated in each roadway segment for the existing plus Proposed Project 4 construction traffic condition have been compared against the existing condition below in Table 5.10-43 in order to show any potential increases in construction traffic noise.

Table 5.10-43: Proposed Project 4 Construction Traffic Noise Contributions

Roadway	Segment	CNEL at 100 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Los Osos Valley Road	West of Broderson Avenue	63.0	63.1	0.1	No
Los Osos Valley Road	East of Broderson Avenue	63.3	63.3	0.0	No
Los Osos Valley Road	West of 9th Street/Bayview Heights Drive	64.9	64.9	0.0	No
Los Osos Valley Road	East of 9th Street/Bayview Heights Drive	65.8	65.8	0.0	No
Los Osos Valley Road	East of 10th Street	66.0	66.0	0.0	No
Los Osos Valley Road	East of South Bay Boulevard	65.9	65.9	0.0	No
Los Osos Valley Road	West of Turri Road	65.7	65.7	0.0	No
Los Osos Valley Road	East of Turri Road	65.7	65.7	0.0	No
Broderson Avenue	South of Los Osos Valley Road	42.5	44.0	1.5	No
9th Street	North of Los Osos Valley Road	51.6	51.6	0.0	No
Bayview Heights Drive	South of Los Osos Valley Road	48.1	48.1	0.0	No
10th Street	North of Los Osos Valley Road	51.0	51.0	0.0	No
South Bay Boulevard	North of Los Osos Valley Road	64.1	64.1	0.0	No
South Bay Boulevard	South of Los Osos Valley Road	44.6	44.6	0.0	No
Turri Road	North of Los Osos Valley Road	42.5	45.1	2.6	No
Source: Michael Brandman Associates, 2008.					

The results of this comparison shown in Table 5.10-43 indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 2.6 dBA CNEL. The County of San Luis Obispo's threshold of significance is 60 dBA CNEL or a 3 dBA CNEL increase for roadways when the no project noise level is greater than 60 dBA CNEL. The greatest project contribution of 2.6 dBA would occur at Turri Road south of Los Osos Valley Road. Since the no project noise level is 42.5 dBA CNEL at Turri Road south of Los Osos Valley Road, a 2.6-dBA noise increase would be below the County's thresholds of significance. Therefore, for the existing conditions and based on thresholds of significance defined above, no significant short-term noise impacts from Proposed Project 4 construction vehicle noise would occur along the study area roadways segments.

Cumulative Impact Analysis

Proposed Projects 1 through 4

Related projects within the greater cumulative project area are detailed in Section 4.2 and Exhibit 4.2-1 in the Draft EIR. Three of the nine related projects (Los Osos CSD Waterline Replacement, Los Osos Valley Road Palisades Storm Drain, and AT&T Cable) physically overlap with the study area for the proposed project but are either completed or expected to be completed by the time that construction of the proposed project is anticipated to begin (2010). Six of the nine related projects (State Park Marina Renovation, Morro Bay Wastewater Treatment Plant, Dredging of Morro Bay, CMC Wastewater Treatment Plant, Phase II Steam Generator Replacement at Diablo, and Spent Fuel Storage Facility at Diablo) have no physical overlap with the proposed project. The two related Diablo projects are in fact nearly 7 miles south of Los Osos. Therefore, since there are no related projects that would contribute to cumulative noise impacts, implementation of Proposed Projects 1 through 4 would not contribute to cumulative temporary and periodic noise impacts.

Mitigation Measures

Project-Specific

Proposed Project 1

5.10-C1 The project applicant shall require construction contractors to adhere to the following noise attenuation requirements:

- Construction activities shall be limited to between the hours of 7 a.m. to 9 p.m. on any day except Saturday or Sunday or between the hours of 8 a.m. to 5 p.m. on Saturday or Sunday.
- All construction equipment shall use noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- Construction staging and heavy equipment maintenance activities shall be performed a minimum distance of 300 feet from the nearest residence, unless safety or technical factors take precedence.

- Stationary combustion equipment such as pumps or generators operating within 100 feet of any residence shall be shielded with a noise protection barrier.

Proposed Project 2
Implementation of Mitigation Measure 5.10-C1 and the following measure are required.

5.10-C2 The construction contractor shall notify all property owners and tenants adjacent to the proposed pile driving activities of the days and hours of operation. The construction contractor shall also require that a noise damper be utilized between the pile driver and the object that is being driven into the ground.

Proposed Project 3
Implementation of Mitigation Measures 5.10-C1 and 5.10-C2 are required.

Proposed Project 4
Implementation of Mitigation Measures 5.10-C1 and 5.10-C2 are required.

Cumulative
Proposed Projects 1 through 4
No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific
Proposed Project 1
Less than significant.

Proposed Project 2
Less than significant.

Proposed Project 3
Less than significant.

Proposed Project 4
Less than significant.

Cumulative
Proposed Projects 1 through 4
No impact.

Airport Noise Levels

Proposed Projects 1 through 4

5.10-D:	**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 Impact Analysis

Proposed Projects 1 through 4

The San Luis Obispo County Regional Airport would not expose people residing in the proposed project area to excessive noise levels. The San Luis Obispo County Regional Airport is located approximately 14 miles Southeast of Los Osos. Los Osos is not within the flight plan area of the San Luis Obispo County Regional Airport and therefore not at risk for any excessive noise levels.

Cumulative Impact Analysis

Proposed Projects 1 through 4

Since Proposed Projects 1 through 4 would not result in the risk of any excessive aircraft noise levels, the project would not add to any potential cumulative impact associated with excessive aircraft noise levels.

Mitigation Measures

Project-Specific

Proposed Projects 1 through 4

No mitigation measures are required.

Cumulative

Proposed Projects 1 through 4

No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific

Proposed Projects 1 through 4

No impact.

Cumulative

No impact.

Private Airstrip Noise Levels

5.10-E:	**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 Impact Analysis

The proposed project is not within the vicinity of any private airstrips and therefore would not expose people residing in the proposed area to excessive noise levels.

Cumulative Impact Analysis

Proposed Projects 1 through 4

Since Proposed Projects 1 through 4 would not result in the risk of any excessive aircraft noise levels from a private airport, the project would not add to any potential cumulative impact associated with excessive aircraft noise levels.

Mitigation Measures

Project-Specific

Proposed Projects 1 through 4

No mitigation measures are required.

Cumulative

Proposed Projects 1 through 4

No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific

Proposed Projects 1 through 4

No impact.

Cumulative

No impact.

Consistency with General Plan Goals and Policies

5.10-F:	**The project would be consistent with the General Plan goals and policies.**

Project-Specific Impact Analysis

The County of San Luis Obispo General Plan contains goals and policies to protect people from the harmful effects of excessive noise. The goals and policies that are relevant to the Los Osos Wastewater Project are identified in Table 5.10-44. As discussed in Table 5.10-44, the project would not be consistent will all of the relevant goals and policies set forth in the General Plan prior to the implementation of mitigation measures.

Table 5.10-44: Consistency of the Proposed Projects with General Plan Noise Goals and Policies

Noise Element Goals, Policies, and Ordinances	Proposed Project Consistency			
	Proposed Project 1	Proposed Project 2	Proposed Project 3	Proposed Project 4
Goal 1 To protect the residents of San Luis Obispo County from the harmful and annoying effects of exposure to excessive noise.	The long-term operation of the treatment plant may result in substantial noise from power generators without the implementation of mitigation measures. Therefore, implementation of Proposed Projects 1 through 4 would not be consistent with this goal.			
Goal 3 To preserve the tranquility of residential areas by preventing the encroachment of noise-producing uses.	The long-term operation of the treatment plant may result in substantial noise from power generators without the implementation of mitigation measures. Therefore, implementation of Proposed Projects 1 through 4 would not be consistent with this goal.			
Goal 5 To avoid or reduce noise impacts through site planning and project design, giving second preference to the use of noise barriers and/or structural modifications to buildings containing noise-sensitive land uses.	The long-term operation of the treatment plant may result in substantial noise from power generators without the implementation of mitigation measures. Therefore, implementation of Proposed Projects 1 through 4 would not be consistent with this goal.			
Policy 3.3.1 The noise standards in this chapter represent maximum acceptable noise levels. New development should minimize noise exposure and noise generation.	The long-term operation of the treatment plant may result in substantial noise from power generators without the implementation of mitigation measures. Therefore, implementation of Proposed Projects 1 through 4 would not be consistent with this goal.			
Policy 3.3.2 New development of noise-sensitive land uses (see Section 1.5 – Definitions of the County of San Luis Obispo Noise Element) shall not be permitted in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed 60 dB LDN or CNEL (70 LDN or CNEL for outdoor sports and recreation) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaced to or below the levels specified for the given land use in Table 3-1 [Table 5.10-5].	Proposed Projects 1 through 4 would increase noise levels in the project area, however, the increase in those levels from transportation noise sources would be less than significant. Therefore, Proposed Projects 1 through 4 would be consistent with this policy.			
Policy 3.3.5 Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may				

Table 5.10-44 (Cont.): Consistency of the Proposed Projects with General Plan Noise Goals and Policies

Noise Element Goals, Policies, and Ordinances	Proposed Project Consistency			
	Proposed Project 1	Proposed Project 2	Proposed Project 3	Proposed Project 4
increase noise levels shall be mitigated as follows and shall be the responsibility of the developer of the stationary noise source:				
b) Noise levels shall be reduced to or below the noise level standards in Table 3-2 [Table 5.10-6] where the stationary noise source will expose an existing noise-sensitive land use (which is listed in the Land Use element as an allowable use within its existing land use category) to noise levels which exceed the standards in Table 3-2 [Table 5.10-6]. When the affected noise-sensitive land use is Outdoor Sports and Recreation, the noise level standards in Table 3-2 [Table 5.10-6] shall be increased by 10 Db.	The long-term operation of the treatment plant may result in substantial noise from power generators without the implementation of mitigation measures. Therefore, implementation of Proposed Projects 1 through 4 would not be consistent with this goal.			
c) Noise levels shall be reduced to or below the noise level standards in Table 3-2 [Table 5.10-6] where the stationary noise source will expose vacant land in the Agriculture, Rural Lands, Residential rural, Residential Suburban, Residential Single-Family, Residential Multi-Family, Recreation, Office and Professional, and Commercial Retail land use categories to noise levels which exceed the standards in Table 3-2 [Table 5.10-6].	The long-term operation of the treatment plant may result in substantial noise from power generators without the implementation of mitigation measures. Therefore, implementation of Proposed Projects 1 through 4 would not be consistent with this goal.			
Source: County of San Luis Obispo, General Plan Noise Element, May 5, 1992				

Cumulative Impact Analysis

Proposed Projects 1 through 4

Related projects within the greater cumulative project area are detailed in Section 4.2 and Exhibit 4.2-1 in the Draft EIR. Three of the nine related projects (Los Osos CSD Waterline Replacement, Los Osos Valley Road Palisades Storm Drain, and AT&T Cable) physically overlap with the study area for the proposed project but are either completed or expected to be completed by the time that construction of the proposed project is anticipated to begin (2010). Six of the nine related projects

(State Park Marina Renovation, Morro Bay Wastewater Treatment Plant, Dredging of Morro Bay, CMC Wastewater Treatment Plant, Phase II Steam Generator Replacement at Diablo, and Spent Fuel Storage Facility at Diablo) have no physical overlap with the proposed project. The two related Diablo projects are in fact nearly 7 miles south of Los Osos. Therefore, since there are no related projects that would contribute to cumulative noise impacts, implementation of Proposed Projects 1 through 4 would not contribute to cumulative impacts to noise goals and policies, specifically in the Los Osos area.

Mitigation Measures

Project-Specific

Proposed Projects 1 through 4

Implementation of Mitigation Measures 5.10-A1, 5.10-A2, and 5.10-A3,are required.

Cumulative

Proposed Projects 1 through 4

No mitigation measures are required.

Level of Significance After Mitigation

Project-Specific

Proposed Projects 1 through 4

Less than significant.

Cumulative

No impact.