

APPENDIX B: LOCAL REGULATIONS

DRAFT

County of Merced -

NOISE

While most noise is common and frequently an integral part of daily living, exposure to excessive noise is often cited as a health problem in terms of general well-being and contribution to undue stress and annoyance. There are many sources of noise in the County including traffic on Interstate 5; State Routes 33, 59, 99, 140, and 152; local roads; railroad operations; aircraft operations; commercial uses; active recreation areas; and outdoor play areas.

The following noise level standards have been developed in order to quantify noise impacts in the County. Table HS-1 shows the noise level standards for noise-sensitive areas affected by traffic, railroad, or airport noise sources in the County. Table HS-2 shows the interior and exterior noise level standards for noise-sensitive areas affected by existing non-transportation noise sources in the County. In addition to these standards, the policies in this section address ways to reduce or eliminate existing and future conflicts between land uses and noise.

TABLE HS-1 Noise Standards for New Uses Affected by Traffic, Railroad, and Airport Noise			
New Land Use	Sensitive ¹ Outdoor Area - Ldn	Sensitive Interior ² Area - Ldn	Notes
All Residential	65	45	3
Transient Lodging	65	45	3,4
Hospitals & Nursing Homes	65	45	3, 4, 5
Theaters & Auditoriums	---	35	4
Churches, Meeting Halls, Schools, Libraries, etc.	65 65	40 40	4 4
Office Buildings	65	45	4
Commercial Buildings	---	50	4
Playgrounds, Parks, etc.	70	---	
Industry	65	50	4

Notes:

1. Sensitive Outdoor Areas include primary outdoor activity areas associated with any given land use at which noise-sensitivity exists and the location at which the County’s exterior noise level standards are applied.
2. Sensitive Interior Areas includes any interior area associated with any given land use at which noise-sensitivity exists and the location at which the County’s interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions.
3. Railroad warning horn usage shall not be included in the computation of Ldn.
4. Only the interior noise level standard shall apply if there are no sensitive exterior spaces proposed for these uses.
5. Since hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital staff or patients.

TABLE HS-2 Non-Transportation Noise Standards Median (L50) / Maximum (Lmax)¹				
Outdoor Area²			Interior³	
Receiving Land Use	Daytime	Nighttime	Day or Night	Notes
All Residential	55 / 75	50 / 70	35 / 55	
Transient Lodging	55 / 75	---	35 / 55	4
Hospitals & Nursing Homes	55 / 75	---	35 / 55	5, 6
Theaters & Auditoriums	---	---	30 / 50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	---	35 / 60	6
Office Buildings	60 / 75	---	45 / 65	6
Commercial Buildings	55 / 75	---	45 / 65	6
Playgrounds, Parks, etc.	65 / 75	---	---	6
Industry	60 / 80	---	50 / 70	6

Notes:

1. These standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards in this table, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
2. Sensitive Outdoor Areas include primary outdoor activity areas associated with any given land use at which noise-sensitivity exists and the location at which the County’s exterior noise level standards are applied.
3. Sensitive Interior Areas includes any interior area associated with any given land use at which noise-sensitivity exists and the location at which the County’s interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions.
4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
5. Since hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
6. The outdoor activity areas of these uses (if any) are not typically used during nighttime hours.
7. Where median (L50) noise level data is not available for a particular noise source, average (Leq) values may be substituted for the standards of this table provided the noise source operates for at least 30 minutes. If the source operates less than 30 minutes the maximum noise level standards shown shall apply.

Goal HS-7	Protect residents, employees, and visitors from the harmful and annoying effects of exposure to excessive noise.
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Policy HS-7.1: Noise Standards for New Land Uses (RDR)

Require new development projects to meet the standards shown in Tables HS-1 and HS-2, at the property line of the proposed use, through either project design or other noise mitigation techniques.

Policy HS-7.2: Acoustical and Groundborne Vibration Analysis Requirements (RDR)

Require development project applicants to prepare an acoustical analysis as part of the environmental review process when noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels shown in Tables HS-1 and HS-2. Require an analysis of groundborne vibration for proposed residential and other sensitive projects (including but not limited to hospitals and schools) located within 1,000 feet of a rail line with at least 30 operations per day or an existing industrial groundborne vibration source. The acoustical and groundborne vibration analyses shall:

- a) Be the responsibility of the applicant;
- b) Be prepared by qualified persons experienced in the fields of environmental noise and groundborne vibration assessment and architectural acoustics;
- c) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions;
- d) Estimate projected future (20 year) noise levels relative to the standards shown in Tables HS-1 and HS-2 at the property line of the proposed use, and, as applicable, estimate project future groundborne vibration levels using a maximum vibration standard of 70 VdB;
- e) Recommend appropriate mitigation to achieve compliance with the adopted policies and standards in this element, including setbacks from groundborne vibration sources causing adverse levels of vibration; and
- f) Estimate interior and exterior noise, and groundborne vibration exposure after the prescribed mitigation measures have been implemented at the property line.

Policy HS-7.3: Existing Rural Sources (RDR)

Discourage new noise sensitive land uses in rural areas with authorized existing noise generating land uses.

Policy HS-7.4: New Noise or Groundborne Vibration Generating Uses (RDR)

Require new commercial and industrial uses to minimize encroachment on incompatible noise or groundborne vibration sensitive land uses. Also consider the potential for encroachment by residential and other noise or groundborne vibration sensitive land uses on adjacent lands that could significantly impact the viability of the commercial or industrial areas.

Policy HS-7.5: Noise Generating Activities (RDR)

Limit noise generating activities, such as construction, to hours of normal business operation.

Policy HS-7.6: Multi-Family Residential Noise Analysis (RDR)

Require noise analyses be prepared for proposed multi-family, town homes, mixed-use, condominiums, or other residential projects where floor ceiling assemblies or party-walls shall be common to different owners/occupants to assure compliance with the State of California Noise Insulation Standards.

Policy HS-7.7: Noise or Vibration Impacted Residential Area Monitoring (RDR)

Consider any existing residential area “noise or vibration impacted” if the exposure to exterior noise exceeds the standards shown in Table HS-2 or if groundborne vibration levels exceed 70VdB. Identify and evaluate potential noise or groundborne vibration impacted areas and identify possible means to correct the identified noise/land use incompatibilities.

Policy HS-7.8: Project Design (RDR)

Require land use projects to comply with adopted noise and vibration standards through proper site and building design, such as building orientation, setbacks, natural barriers (e.g., earthen berms, vegetation), and building construction practices. Only consider the use of soundwalls after all design-related noise mitigation measures have been evaluated or integrated into the project or found infeasible.

Policy HS-7.9: Transportation Project Construction/Improvements (RDR)

Require transportation project proponents to prepare all acoustical analysis for all roadway and railway construction projects in accordance with Policy HS-7.2; additionally, rail projects shall require the preparation of a groundborne vibration analysis in accordance with Policy HS-7.2. Consider noise mitigation measures to reduce traffic and/or rail noise levels to comply with Table HS-1 standards if pre-project noise levels already exceed the noise standards of Table HS-1 and the increase is significant. The County defines a significant increase as follows:

<u>Pre-Project Noise Environment (Ldn)</u>	<u>Significant Increase</u>
Less than 60 dB	5+ dB
60 - 65 dB	3+ dB
Greater than 65 dB	1.5+ dB

Policy HS-7.10: Aircraft Noise (RDR)

Prohibit new noise-sensitive development within the projected future 60 dB Ldn noise contours of any public or private airports.

Policy HS-7.11: Train Whistle Noise (IGC)

Support improvements to at-grade crossings in urban areas in order to eliminate the need for train whistle blasts near or within communities.

Policy HS-7.12: New Project Noise Mitigation Requirements (RDR)

Require new projects to include appropriate noise mitigation measures to reduce noise levels in compliance with the Table HS-2 standards within sensitive areas. If a project

includes the creation of new non-transportation noise sources, require the noise generation of those sources to be mitigated so they do not exceed the interior and exterior noise level standards of Table HS-2 at existing noise-sensitive areas in the project vicinity. However, if a noise-generating use is proposed adjacent to lands zoned for residential uses, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the standards shown in Table HS-2 at the property line of the generating use in anticipation of the future residential development.

Policy HS-7.13: Noise Exemptions (RDR)

Support the exemption of the following noise sources from the standards in this element:

- a) Emergency warning devices and equipment operated in conjunction with emergency situations, such as sirens and generators which are activated during power outages. The routine testing of such warning devices and equipment shall also be exempt provided such testing occurs during daytime hours.
- b) Activities at schools, parks, or playgrounds, provided such activities occur during daytime hours.
- c) Activities associated with County-permitted temporary events and festivals.

Policy HS-7.14: Transportation Noise Mitigation Program (MPSP/SO)

Adopt a countywide transportation noise mitigation program to reduce transportation noise levels at existing sensitive land uses.

Policy HS-7.15: New Project Groundborne Vibration Mitigation Requirements (RDR)

For residential projects within 1,000 feet of a rail line with at least 30 operations per day, or an existing industrial or commercial groundborne vibration source, require new residential projects to include appropriate groundborne vibration mitigation measures to reduce groundborne vibration levels to less than 70 VdB within structures. However, if a groundborne vibration-generating use is proposed adjacent to lands zoned for residential uses, then the groundborne vibration-generating use shall be responsible for mitigating its groundborne vibration generation to a state of compliance with the 70 VdB standard at the property line of the generating use in anticipation of the future residential development.

ENVIRONMENTAL JUSTICE

Merced County is committed to making land use, environmental, and resource protection decisions that are predictable and fair. The policies in this section ensure that Merced County will make decisions that are fair and equitable for every resident, regardless of age, race, culture, or income.

County of Madera -



RESOURCE MANAGEMENT AGENCY PLANNING DEPARTMENT

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Madera, CA
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mc_planning@madera-county.com

Jerald C. James, Director *RCR*

PLANNING COMMISSION DATE: April 15, 2008

AGENDA ITEM: #4

GP	#2007-031	To amend the General Plan Noise Element
APN	County wide	Applicant: Dale Fredericks, DG Power International
CEQA	ND #2008-02	Negative Declaration

REQUEST:

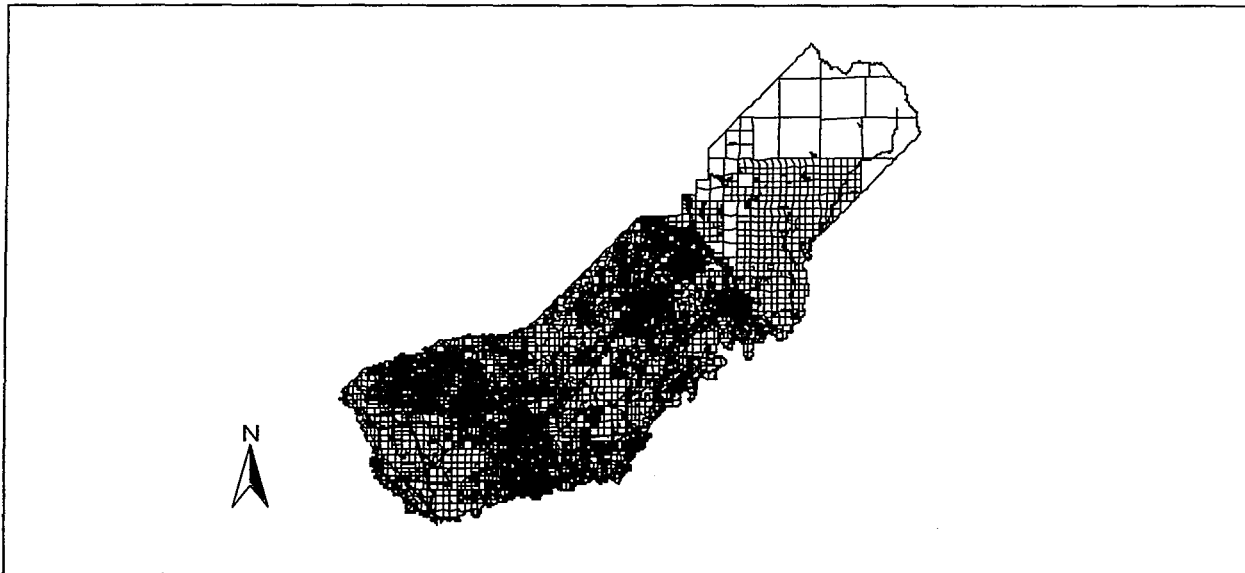
To amend the General Plan Noise Ordinance County wide including new decibel levels at property lines, construction hours, and vibration threshold definition.

LOCATION:

County wide

ENVIRONMENTAL ASSESSMENT:

A CEQA Negative Declaration (ND #2008-02) has been prepared and is subject to approval



RECOMMENDATION:

Staff recommends approval of the General Plan Text Amendment GP #2007-31 and the Negative Declaration ND #2008-02.

BACKGROUND AND PRIOR ACTIONS:

The General Plan Text Amendment came about as a result of a General Plan Amendment request by Madera Energy LLC for a potential peaker plant.

ORDINANCES/POLICIES:

Section 18.110 of the Madera County Zoning Ordinance establishes rules and procedures and California Government Code Section 65358(a) establishes authority for amending the General Plan by the Board of Supervisors. The Planning Commission serves as recommending body to the Board.

Chapter 9.58 of Title 9 of the County Code establishes noise regulations for the County.

Goal 7.A of the Madera County General Plan outlines the policies of the County in regards to the noise element.

PROJECT DESCRIPTION:

The applicant wishes to amend the General Plan Noise Element table 7.A.4 to increase the decibel (dB) levels, redefine the point of measure, and what the decibel levels should be in given land use designations.

ANALYSIS:

Madera Energy Center, LLC, has applied for a General Plan Text Amendment to amend Table 7.A.4 of Section 7 (Noise) of the county's general plan. This amendment request came as a result of a General Plan Amendment and Rezoning project (PRJ #2007-009). There is an addition of Table 7.B.4 showing decibels and examples of sources. Additions include 7.A.8 and 7.A.9 to the policy document discusses land use and vibration perception threshold are included in this application. Section 7.5 regarding construction hours are also included.

Chapter 9.58 of Title 9 is updated as a part of this project to ensure the title is consistent with the general plan.

When speaking of noise in relation to sound, what is commonly meant is meaningless sound of greater than usual volume. Thus, a loud activity may be referred to as noisy. However, conversations of other people may be called noise for people not involved in any of them, and noise can be unwanted sound such as the noise of aircraft, neighbors playing loud music or road sounds spoiling the quiet of the countryside.

In the 1960s and earlier, few people recognized that citizens might be entitled to be protected from adverse sound level exposure. Things began to change in the late 1960s with the passage of the Noise Control Act of 1972. Passage of the NCA was remarkable in that there was a lack of historic organized citizen concern; however the EPA had testified before congress that 30 million Americans are exposed to non-occupational noise high enough to cause hearing loss and 44 million Americans live in homes impacted by aircraft or highway noise emissions.

Initially these laws had a significant effect on thoughtful study of transportation programs and federally funded housing programs in the United States. This caused an impetus to consider environmental noise in the planning and zoning decisions. This impetus is most notable in California which carried out an ambitious plan to require cities to establish a "Noise Element of the General Plan," which provides guidance for land planning decisions to minimize noise impacts on the public.

Noise health effects are both health and behavioral in nature. The unwanted sound is called noise pollution. The unwanted sound can damage physiological and psychological health. Noise pollution can cause annoyance and aggression, hypertension, high stress levels, tinnitus, hearing loss and other harmful effects. Furthermore, stress and hypertension are the leading causes to health problems, whereas tinnitus can lead to forgetfulness, severe depression and at times panic attacks.

Most ordinances prohibit sound above a threshold intensity from trespassing over property lines at night, typically between 10 PM and 6 AM.

Industrial uses, saw mills, energy generation plants, and mining operations are significant noise sources in Madera County. In some cases, noise-sensitive land uses are located near these operations. In most cases, however, noise generators are located in areas containing only industrial uses, or in rural areas surrounded by a significant amount of open space or agriculture.

The Noise Element of the Madera County General Plan (Policy 7.A.5) provides that noise which will be created by new non-transportation noise sources shall be mitigated so as not to exceed the Noise Element noise level standards on lands designated for noise-sensitive uses.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g. demolition/land clearing, grading and excavation, erection). The United States Environmental Protection Agency has found that the average noise levels associated with construction activities typically range from approximately 76 dBA to 84 dBA Leq, with intermittent individual equipment noise levels ranging from approximately 75 dBA to more than 88 dBA for brief periods, and typically measured at source and not at any given distance.

Short Term Noise

Noise from localized point sources (such as construction sites) typically decreases by approximately 6 dBA with each doubling of distance from source to receptor. Given the noise attenuation rate and assuming no noise shielding from either natural or human-made features (e.g. trees, buildings, fences), outdoor receptors within approximately 400 feet of construction site could experience maximum noise levels of greater than 70 dBA when onsite construction-related noise levels exceed approximately 89 dBA at the project site boundary. Construction activities that occur during the more noise-sensitive eighteen hours could result in increased levels of annoyance and sleep disruption for occupants of nearby existing residential dwellings. As a result, noise-generating construction activities would be considered to have a potentially significant short-term impact. However with implementation of mitigation measures, this impact would be considered less than significant.

Long Term Noise

Mechanical building equipment (e.g. heating, ventilation and air conditioning systems, and boilers), associated with the proposed structures, could generate noise levels of approximately 90 dBA at 3 feet from the source. However, such mechanical equipment systems are typically shielded from direct public exposure and usually housed on rooftops, within equipment rooms, or within exterior enclosures.

Landscape maintenance equipment, such as leaf blowers and gasoline powered mowers, associated with the proposed operations could result in intermittent noise levels that range

from approximately 80 to 100 dBA at 3 feet, respectively. Based on an equipment noise level of 100 dBA, landscape maintenance equipment (assuming a noise attenuation rate of 6 dBA per doubling of distance from the source) may result in exterior noise levels of approximately 75 dBA at 50 feet.

Sound is technically described in terms of the loudness (amplitude) and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the Decibel (dB). Decibels are based on the logarithmic scale. The scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud, and 20 dBA higher four times as loud and so forth.

A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighting as it provides a high degree of correlation with human annoyance and health effects.

The chart below (what will become Table 7.B.5) provides a listing of what each decibel is equivalent to (i.e. 140 dB is equivalent to noise level on an aircraft carrier deck), and the potential effects of that noise level.

Noise Source	Decibel Level	Noise Effect
Jet take off (at 25 meters)	150	Eardrum rupture
Aircraft Carrier deck	140	Earphones at high level
Jet take off (at 100 meters)	130	
Thunderclap, live rock music, chain saw	120	
Steel mill, riveting, auto horn at 1 meter	110	Human pain threshold
Jet take off at 305 meters, outboard motor, power lawn motor, motorcycle, farm tractor, jackhammer, garbage truck	100	Serious hearing damage (8 hour)
Busy urban street, diesel truck, food blender	90	Hearing damage (8 hours)
Garbage disposal, dishwasher, average factory, freight train (at 15 meters)	80	Possible hearing damage
Freeway traffic (at 15 meters), vacuum cleaner	70	Annoying
Conversation in restaurant, office, background music	60	Quiet
Quiet suburb, conversation at home	50	Quiet
Library	40	Quiet
Quiet rural area	30	Very quiet
Whisper, rustling leaves	20	Very quiet
Breathing	10	Very quiet
	0	Threshold of hearing

(SOURCE: Temple University Department of Civil/Environmental Engineering)

Chronic noise-induced hearing loss is a permanent sensor/neural condition that cannot be treated medically. It is initially characterized by a declining sensitivity to high-frequency sounds, usually at frequencies higher than 2000 hertz (Hz). A "hertz" is a unit of measure of frequency, measured in cycles per second. Other hearing problems associated with prolonged exposure to loud noises include tinnitus which is characterized by a persistent ringing in the ears.

The decibel levels listed in the proposed new Table 7.A.4 came from the Office of Planning and Research's table. The figures for the most part lay in the mid-range of what the OPR terms as "Normally acceptable." It is Staff's opinion that these figures are the best recommendations available in the long term.

The proposed table was created in the form it is presented in order to provide not just the recommended levels per land use designation, but also to provide levels for those instances where different designations exist side-by-side.

GENERAL PLAN CONSISTENCY:

The proposed amendment to the Noise Element will be consistent with the 1995 Madera County General Plan.

RECOMMENDATION:

The analysis provided in this report supports approval of the General Plan Text Amendment and Negative Declaration.

ATTACHMENTS:

1. Exhibit A, Proposed Text Change to the 1995 General Plan Policy Document
2. Exhibit B, Community Noise Exposure from the Office of Planning and Research
3. Exhibit C, Proposed text additions to Title 9 of the Madera County Code
4. Exhibit D, CEQA Initial Study
5. Exhibit E, Negative Declaration (ND) #2008-02

EXHIBIT A

In the General Plan Policy Document...
To amend Table 7.A.4 to read the following:

MAXIMUM ALLOWABLE NOISE EXPOSURE FOR NON-TRANSPORTATION NOISE SOURCES*

		Residential	Commercial	Industrial (L)	Industrial (H)	Agricultural
Residential	AM	50	60	55	60	60
	PM	45	55	50	55	55
Commercial	AM	60	60	60	65	60
	PM	55	55	55	60	55
Industrial (L)	AM	55	60	60	65	60
	PM	50	55	55	60	55
Industrial (H)	AM	60	65	65	70	65
	PM	55	60	60	65	60
Agricultural	AM	60	60	60	65	60
	PM	55	55	55	60	55

*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 at the property line.

AM = 7:00 AM to 10:00 PM
PM = 10:00 PM to 7:00 AM
L = Light
H = Heavy

Note: Each of the noise levels specified above shall be lowered by 5 dB for pure tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g. caretaker dwellings).

And to include the following text additions:

- 7.A.8 The noise standards for the various categories of land use identified in Table 7.A.4 shall, unless otherwise specifically indicated, apply to all such property within a designated zone.
- 7.A.9 Vibration perception threshold: The minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be a motion velocity of one one-hundredth (0.01) inches per second over the range of one (1) to one hundred (100) Hz.

7.A.10 Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way will be in violation of this ordinance.

7.A.11 Construction activities, known to increase noise levels, shall be limited to 7AM to 7PM Monday through Friday, 9AM to 5PM Saturdays, and not allowed on Sundays.

And to include a new table:

Noise Sources and their Effects

Noise Source	Decibel Level	Noise Effect
Jet take off at 25 meters	150	Eardrum rupture
Aircraft carrier deck	140	Earphones at high level
Jet take-off at 100 meters	130	
Thunderclap, live rock music, chain saw	120	
Steel mill, riveting, auto horn at 1 meter	110	Human pain threshold
Jet take off (at 305 meters), outboard motor, power lawn mower, motorcycle, farm tractor, jackhammer, garbage truck	100	Serious hearing damage (8 hours)
Busy urban street, diesel truck, food blender	90	Hearing damage (8 hours)
Garbage disposal, dishwasher, average factory, freight train (at 15 meters)	80	Possible hearing damage
Freeway traffic (at 15 meters), vacuum cleaner	70	Annoying
Conversation in restaurant, office, background music	60	Quiet
Quiet suburb, conversation at home	50	Quiet
Library	40	Quiet
Quiet rural area	30	Very quiet
Whisper, rustling leaves	20	Very quiet
Breathing	10	Very quiet
	0	Threshold of hearing

Land Use Category	Community Noise Exposure (Ldn, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single Family, Duplex, Mobile Homes	50 - 60	55 - 70	70 - 75	75 - 85
Residential - Multiple Family	50 - 65	60 - 70	70 - 75	70 - 85
Transient Lodging - Motels, Hotels	50 - 65	60 - 70	70 - 80	80 - 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	80 - 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 - 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 - 85
Playgrounds, Neighborhood Parks	50 - 70	NA	67.5 - 75	72.5 - 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 70	NA	70 - 80	80 - 85
Office Buildings, Business Commercial and Professional	50 - 70	67.5 - 77.5	75 - 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	75 - 85	NA
Source: Office of Planning and Research, General Plan Guidelines, California, October 2003				

BEFORE
THE BOARD OF SUPERVISORS
OF THE COUNTY OF MADERA
STATE OF CALIFORNIA
ORDINANCE NO. _____

EXHIBIT C

AN ORDINANCE ADDING SECTION 9.58.011, DEFINITIONS, TO CHAPTER 9.58; SECTION 9.58.012 APPLICABILITY TO ALL LAND USES; AND SECTION 9.58.020(F) OPERATION OF ANY DEVICE TO CHAPTER 9.58, OF THE MADERA COUNTY CODE, DEFINING AND DESCRIBING NOISE ORDINANCES.

The Board of Supervisors of the County of Madera, State of California, ordains
as follows:

SECTION 1

Section 9.58.011, is added to Chapter 9.58 of Title 9 of the Madera
County Code to read in its entirety as follows:

9.58.011. Definitions.

(A) Vibration perception threshold. The minimum ground or structure-borne vibrational motion necessary to cause persons of normal sensitivity to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be a motion velocity of one one-hundredth (0.01) inches per second over the range of one (1) to one hundred (100) Hz.

(B) Hz (Hertz): A unit of measurement for pitch that describes the number of cycles per second in a sound vibration. Speech information usually falls between 200Hz and 6000Hz. "Middle C" on the piano falls at 262Hz.

SECTION 2

Section 9.58.012 is added to Chapter 9.58 of Title 9 of the Madera County
Code.

Section 9.58.012 shall read as follows:

9.58.012 Applicability of noise ordinances to all land uses. The noise standards of the various categories of land use identified shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

SECTION 3

Subsection (F) is added to Section 9.58.020 of Chapter 9.58 of Title 9 of the Madera County Code .to read as follows:

(F) Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold as defined in Section 9.58 at or beyond the property boundary of the source if on private property or 150 feet (46 meters) from the source if on a public right-of-way will be in violation of this ordinance.

SECTION 4

Subsection (G) is added to Section 9.58.020 of Chapter 9.58 of Title 9 of the Madera County Code.to read as follows:

9.58.020(G) Construction activities are limited to the hours of 7AM and 7PM Monday through Friday and 9AM and 5PM on Saturdays. Construction activities will be prohibited on Sundays.

SECTION 5

This Ordinance shall take effect and be in force thirty (30) days after its adoption.

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The foregoing Ordinance was adopted this _____ day of _____, 2008, by the following vote.

Supervisor Bigelow voted: _____

Supervisor Moss voted: _____

Supervisor Dominici voted: _____

Supervisor Rodriguez voted: _____

Supervisor Wheeler voted: _____

Chairman, Board of Supervisors

ATTEST:

Clerk, Board of Supervisors

Approved as to Legal form:
COUNTY COUNSEL

By 

Environmental Checklist Form

EXHIBIT D

Title of Proposal: GP #2007-031 Madera Energy Center LLC – General Plan Text Amendment

Date Checklist Submitted: March 3, 2008

Agency Requiring Checklist: Madera County

Agency Contact: Robert Mansfield, Planner III

Phone: (559) 675-7821

Description of Project:

To amend the Madera County General Plan Noise Element.

The Initial Study is a public document used by the decision-making lead agency to determine whether a project may have significant effects on the environment. In the case of the proposed project, the Madera County Planning Department, acting as lead agency, will use the initial study to determine whether the project has a significant effect on the environment. In accordance with CEQA, Guidelines (Section 15064[a]), an environmental impact report (EIR) must be prepared if there is substantial evidence (such as results of the Initial Study) that a project may have significant effect on the environment. This is true regardless of whether the overall effect of the project would be adverse or beneficial. A negative declaration (ND) or mitigated negative declaration (MND) may be prepared if the lead agency determines that the project would have no potentially significant impacts or that revisions to the project, or measures agreed to by the applicant, mitigate the potentially significant impacts to a less-than-significant level (CEQA Guidelines Section 15062[f]).

The initial study considers and evaluates all aspects of the project which are necessary to support the proposal. The complete project description includes the site plan, operational statement, and other supporting materials which are available in the project file at the office of the Madera County Planning Department.

Project Location:

County Wide

Applicant Name and Address:

Madera Energy Center LLC
P.O. Box 4400
Walnut Creek, CA 94596

General Plan Designation:

Varies

Zoning Designation:

Varies

Surrounding Land Uses and Setting:

Varies

Other Public Agencies whose approval is required: None

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

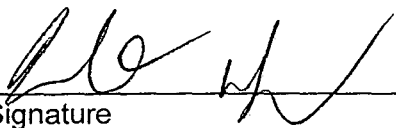
The environmental factors checked below would be potentially affected by this project.

- | | | |
|--|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology /Soils |
| <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Hydrology / Water Quality | <input type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population / Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | |

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.


Signature

March 3, 2008
Date

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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I. AESTHETICS -- Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion:

Visual resources are classified into two categories: scenic views and scenic resources. Scenic views are elements of the broader viewshed such as mountain ranges, valleys, and ridgelines. They are usually middle ground or background elements of a viewshed that can be seen from a range of viewpoints, often along a roadway or other corridor. Scenic resources are described in the CEQA Environmental Checklist as specific features of a viewing area (or viewshed) such as trees, rock outcroppings and historic buildings. They are specific features that act as the focal point of a viewshed and are usually foreground elements.

Aesthetic effects are somewhat subjective and are influenced by such factors as the location of the viewer, duration of exposure, and the status of the viewer in relation to the project. "Status of the viewer" is a reference to the fact that a resident of a property that has a direct view of the project site from an adjacent property is likely to feel differently about the new development than a non-resident who catches a brief glimpse of the project site from the roadway. Light and glare effects also are somewhat subjective; they are more likely to disturb permanent residents than transient highway travelers.

Light and glare effects must be evaluated from two viewpoints: (1) the viewpoint from the project site toward surrounding uses and (2) the viewpoint from surrounding uses toward the project site. The degree of impact is proportional to the perceived negative effect on surrounding land uses. If there is a continuous light or glare that is visible from nearby residences, and if it creates a nuisance to residents, the impact is potentially significant. The sensitivity of viewers to changes in the viewshed can be measured by the extent and nature of general plan provisions that address visual resources in relation to development proposals.

The project will not have an adverse effect on a scenic vista. The project site is located in a rural, agricultural area. Viewers are limited to motorists on perimeter roadways and residents of surrounding facilities and operations.

The proposed project will not be visible from a state or interstate highway, and is not a scenic route designated in the Madera County General Plan. No scenic resources have been identified on the site.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion:

A number of resulting impacts of agricultural land use incompatibilities include:

- Theft of high-value farm equipment and supplies;
- Vandalism to farmland, including trespass, crop pilferage, and damage to irrigation equipment;
- Personal injury liability, occurring from trespass accidents and consuming of crop products recently sprayed with pesticides;
- Traffic congestion and hazards due to conflicts between vehicular traffic and low-speed farm equipment;
- Airborne hazards to adjacent developments from agricultural practices that produce dust, smoke and pesticide drift;
- Damage to crops from vehicular emissions;
- Spread of crop to ornamental landscaping in adjacent developments;
- Noise effects from agricultural operations from spraying, cultivating, and harvesting equipment, especially at night and early morning; and
- Effects on water quality for adjacent developments due to leached chemical and biological agents (pesticides, coli forms, fertilizers) into groundwater supplies.

III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

Impacts in air quality are addressed by the San Joaquin Unified Air Pollution Control District.

The entire San Joaquin Valley Air Basin is designated non-attainment for ozone and particulate matter (PM_{10} and $PM_{2.5}$). This project could contribute to the overall decline in air quality due to increased operational emissions; however, by itself, would not generate significant air emissions. However, the increase in emissions from the project, and others like it, cumulatively reduce the air quality in the San Joaquin Valley.

Particulate matter can be divided up into two size categories, PM_{10} and $PM_{2.5}$. PM_{10} refers to particulate matter that is 10 microns or less (1 micron is one-millionth of a meter) in diameter and is sometimes referred to as inhalable or coarse-particulate matter. $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter and is referred to as fine-particulate matter. The size of the particulate matter is directly linked to their potential for causing health problems. Small particles pose the greatest health problems, because they can get deep in the lungs, and some may even get into the bloodstream. Both PM_{10} and $PM_{2.5}$ are small enough to bypass the body's defense mechanisms and become lodged in the lungs. In fact, $PM_{2.5}$ is small enough to reach the alveoli, the portion of the lung where the oxygen/carbon dioxide exchange occurs. Exposure to such particulates can affect both the lungs and the heart. Large particulates are less of a concern, although they can irritate one's eyes, nose and throat.

In 2005, paved and unpaved road dust particulate matter (within the range of PM_{10}) contributed to approximately 33% of the total PM_{10} for the entire Madera County region.

The San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) has established a three-tiered approach to determining significance related to a project's quantified ozone precursor emissions. Each tier or level requires a different degree of complexity of emissions calculation and modeling to determine air quality significance. The SJVUAPCD pre-calculated the emissions on a large number and types of projects to identify the level at which they have no possibility of exceeding emissions thresholds. The District's Guide for Assessing Air Quality Impacts provides this information in terms of vehicle trips required to exceed the threshold for five general land use categories (residential housing, commercial, office, institutional and industrial) and the sizes of various specific development types meeting these criteria. Projects falling under these size thresholds qualify for what the SJVUAPCD refers to as the Small Project Analysis Level (SPAL). No quantification of ozone precursor emissions is needed for projects less than or equal to the sizes listed; however, other factors, such as toxic air contaminants, hazardous materials, asbestos, and odors still need to be analyzed. Agricultural projects are exempt from SJVUAPCD regulations, and agriculture is not one of the five general land use categories listed.

Sensitive receptors are facilities that "house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors." (GAMAQI 2002).

Construction activities associated with the project will temporarily contribute dust to an air mass in the San Joaquin Valley that currently exceeds the state and federal health standards for PM-10. Initially, during the construction phase of the project, additional traffic beyond that occurring at the project site would be generated which would add to an increase in vehicle emissions in the area. Compliance with existing regulations (SJVUAPCD Regulation VIII-Fugitive PM10 Prohibitions) would constitute reasonable efforts and reduce the impact of the project to less than significant levels with regards to air quality. The proposal would not expose sensitive receptors to substantial pollutant concentrations or create objectionable odors affecting a substantial number of people.

Emissions of CO (Carbon Monoxide) are the primarily mobile-source criteria pollutant of local concern. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed and delay. Carbon monoxide transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to congested roadway or intersection may reach unhealthy levels, affecting local sensitive receptors (residents, school children, hospital patients, the elderly, etc.). As a result, the SJVAPCP recommends analysis of CO emissions of at a local rather than regional level. Local CO concentrations at intersections projected to operate at level of service (LOS) D or better do not typically exceed national or state ambient air quality standards. In addition, non-signalized intersections located within areas having relatively low background concentrations do not typically have sufficient traffic volumes to warrant analysis of local CO concentrations.

Global Climate Change

Climate change is a shift in the "average weather" that a given region experiences. This is measured by changes in temperature, wind patterns, precipitation, and storms. Global climate is the change in the climate of the earth as a whole. It can occur naturally, as in the case of an ice age, or occur as a result of anthropogenic activities. The extent to which anthropogenic activities influence climate change has been the subject of extensive scientific inquiry in the past several decades. The Intergovernmental Panel on Climate Change (IPCC), recognized as the leading research body on the subject, issued its Fourth Assessment Report in February 2007, which asserted that there is "very high confidence" (by IPCC definition a 9 in 10 chance of being correct) that human activities have resulted in a net warming of the planet since 1750.

Existing residences in the project vicinity are in agricultural zones. Because of the low levels of emissions from project construction and operation as described, and the lack of sensitive receptor locations, no such receptors would be exposed to criteria or toxic air pollutants. Pursuant to CEQA Guidelines Section 15064(h)(2), no impacts have been identified.

IV. MINERAL RESOURCES – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

This project will not result in the loss of any known mineral resources. No such resources are known to exist in significant quantities on the project site.

V. BIOLOGICAL RESOURCES -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

No special status plant or animal species, or unique habitat is known to exist on the project site or surrounding area, and no impacts to biological resources would occur as a result of this project. No locally designated resources exist in this portion of the county and resources such as wetland habitat or migration corridors are not present. The project would not conflict with any local policies or ordinances protecting biological resources, and the project would not conflict with the provision of any conservation plans.

Special Status Species include:

- Plants and animals that are legally protected or proposed for protection under the California Endangered Species Act (CESA) or Federal Endangered Species Act (FESA);
- Plants and animals defined as endangered or rare under the California Environmental Quality Act (CEQA) §15380;
- Animals designated as species of special concern by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Game (CDFG);
- Animals listed as "fully protected" in the Fish and Game Code of California (§3511, §4700, §5050 and §5515); and
- Plants listed in the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California.

Effective January 1, 2007, Senate Bill 1535 took effect that has changed de minimis findings procedures. The Senate Bill takes the de minimis findings capabilities out of the Lead Agency hands and puts the process into the hands of the Department of Fish and Game. The same Senate Bill also increases the associated fees for

the Fish and Game; the current fees associated with a Mitigated Negative Declaration are \$1,800, and the County Clerk filing fee is \$50.

In short, the applicant must either contact the California Department of Fish and Game and get them to issue a de minimis finding and fee exemption waiver, submit that with the County \$50 filing fee, **OR** submit a total of \$1,850 (on top of associated County Fees) to the County.

VI. CULTURAL RESOURCES -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

Public Resource Code 5021.1(b) defines a historic resource as "any object building, structure, site, area or place which is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." These resources are of such import, that it is codified in CEQA (PRC Section 21000) which prohibits actions that "disrupt, or adversely affect a prehistoric or historic archaeological site or a property of historical or cultural significance to a community or ethnic or social groups; or a paleontological site except as part of a scientific study."

Archaeological importance is generally, although not exclusively, a measure of the archaeological research value of a site which meets one or more of the following criteria:

- Is associated with an event or person of recognized significance in California or American history or of recognized scientific importance in prehistory.
- Can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable archaeological research questions.
- Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind.
- Is at least 100 years old and possesses substantial stratigraphic integrity (i.e. it is essentially undisturbed and intact).
- Involves important research questions that historic research has shown can be answered only with archaeological methods.

Reference CEQA Guidelines §15064.5 for definitions.

No sites of archaeological or historical significance are known to exist on or in the vicinity of the subject property. Though the majority of the project site has been disturbed by previous agricultural activities, grading and excavating of the areas in question could result in disturbance of unknown cultural resources. Policy 4.D.3 of the Madera County General Plan provides for that "[T]he County shall require that discretionary development projects identify and protect from damage, destruction and abuse, important historical, archaeological, paleontological and cultural sites and their contributing environment." Impacts on previously undiscovered cultural resources are potentially significant, but can be mitigated to a level that is less than significant through incorporation of the mitigation measure(s) stipulated in the Negative Declaration.

No known unique geological features in the vicinity of the project site exist. There are no known fossil bearing sediments on the project site. No impact has been identified.

Most of the archaeological survey work in the County has taken place in the foothills and mountains. This does not mean, however, that no sites exist in the western part of the County, but rather that this area has not been as thoroughly studied. There are slightly more than 2,000 recorded archaeological sites in the County, most of which are located in the foothills and mountains. Recorded prehistoric artifacts include village sites, camp sites, bedrock milling stations, pictographs, petroglyphs, rock rings, sacred sites, and resource gathering areas. Madera County also contains a significant number of potentially historic sites, including homesteads and ranches, mining and logging sites and associated features (such as small camps, railroad beds, logging chutes, and trash dumps).

VII. LAND USE AND PLANNING - Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The project would not divide any existing communities, or conflict with any adopted plans, policies, or regulations designed to avoid environmental impacts.

The proposal has been distributed to all agencies which are believed to have an interest in the project. These agencies have provided comments, where appropriate. No significant conflicts have been noted. The project would not conflict with any applicable habitat conservation plan or natural community conservation plan

VIII. GEOLOGY AND SOILS – Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

Madera County is divided into two major physiographic and geologic provinces: the Sierra Nevada Range and the Central Valley. The Sierra Nevada physiographic province in the northeastern portion of the county is underlain by metamorphic and igneous rock. It consists mainly of homogenous types of granitic rocks, with several islands of older metamorphic rock. The central and western parts of the county are part of the Central Valley province, underlain by marine and non-marine sedimentary rocks.

The foothill area of the county is essentially a transition zone, containing old alluvial soils that have been dissected by the west-flowing rivers and streams which carry runoff from the Sierra Nevadas.

Seismicity varies greatly between the two major geologic provinces represented in Madera County. The Central valley is an area of relatively low tectonic activity bordered by mountain ranges on either side. The Sierra Nevadas, partly within Madera County, are the result of movement of tectonic plates which resulted in the creation of the mountain range. The Coast Ranges on the west side of the Central Valley are also a result of these forces, and continued movement of the Pacific and North American tectonic plates continues to elevate the ranges. Most of the seismic hazards in Madera County result from movement along faults associated with the creation of these ranges.

There are no active or potentially active faults of major historic significance within Madera County. The County does not lie within any Alquist Priolo Special Studies Zone for surface faulting or fault creep.

However, there are two significant faults within the larger region that have been and will continue to be, the principle sources of potential seismic activity within Madera County.

San Andreas Fault : The San Andreas Fault lies approximately 45 miles west of the county line. The fault has a long history of activity and is thus a concern in determining activity in the area.

Owens Valley Fault Group: The Owens Valley Fault Group is a complex system containing both active and potentially active faults on the eastern base of the Sierra Nevada Range. This group is located approximately 80 miles east of the County line in Inyo County. This system has historically been the source of seismic activity within the County.

The *Draft Environmental Impact Report* for the state prison project near Fairmead identified faults within a 100 mile radius of the project site. Since Fairmead is centrally located along Highway 99 within the county, this information provides a good indicator of the potential seismic activity which might be felt within the County. Fifteen active faults (including the San Andreas and Owens Valley Fault Group) were identified in the *Preliminary Geotechnical Investigation*. Four of the faults lie along the eastern portion of the Sierra Nevada Range, approximately 75 miles to the northeast of Fairmead. These are the Parker Lake, Hartley Springs, Hilton Creek and Mono Valley Faults. The Remaining faults are in the western portion of the San Joaquin Valley, as well as within the Coast Range, approximately 47 miles west of Fairmead. Most of the remaining 11 faults are associated with the San Andreas, Calaveras, Hayward and Rinconada Fault Systems which collectively form the tectonic plate boundary of the Central Valley.

In addition, the Clovis Fault, although not having any historic evidence of activity, is considered to be active within quaternary time (within the past two million years), is considered potentially active. This fault line lies approximately six miles south of the Madera County line in Fresno County. Activity along this fault could potentially generate more seismic activity in Madera County than the San Andreas or Owens Valley fault systems. However, because of the lack of historic activity along the Clovis Fault, there is inadequate evidence for assessing maximum earthquake impacts.

Seismic ground shaking, however, is the primary seismic hazard in Madera County because of the County's seismic setting and its record of historical activity (General Plan Background Element and Program EIR). The project represents no specific threat or hazard from seismic ground shaking, and all new construction will comply with current local and state building codes. Other geologic hazards, such as landslides, lateral spreading, subsidence, and liquefaction have not been known to occur within Madera County.

According to the Madera County General Plan Background Report, groundshaking is the primary seismic hazard in Madera County. The valley portion of Madera County is located on alluvium deposits, which tend to experience greater groundshaking intensities than areas located on hard rock. Therefore, structures located in the valley will tend to suffer greater damage from groundshaking than those located in the foothill and mountain areas.

Liquefaction is a process whereby soil is temporarily transformed to a fluid form during intense and prolonged ground shaking. According to the Madera County General Plan Background Report, although there are areas of Madera County where the water table is at 30 feet or less below the surface, soil types in the area are not conducive to liquefaction because they are either too coarse in texture or too high in clay content; the soil types mitigate against the potential for liquefaction.

IX. HAZARDS AND HAZARDOUS MATERIALS – Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The project would not result in interference with any emergency response plan. No component of the project site would constitute a threat or hazard to any existing or planned airport or airstrip. The project is located outside of the County's Airport Land Use Compatibility Zone.

X. HYDROLOGY AND WATER QUALITY – Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

There will be no impacts as a result of this project.

XI. NOISE – Would the project result in:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The Noise Element of the Madera County General Plan (Policy 7.A.5) provides that noise which will be created by new non-transportation noise sources shall be mitigated so as not to exceed the Noise Element noise level standards on lands designated for noise-sensitive uses. However, this policy does not apply to noise levels associated with agricultural operations. All the surrounding properties, while include some residential units, are designated and zoned for agricultural uses. This impact is therefore considered less than significant.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g. demolition/land clearing, grading and excavation, erection). The United States Environmental Protection Agency has found that the average noise levels associated with construction activities typically range from approximately 76 dBA to 84 dBA Leq, with intermittent individual equipment noise levels ranging from approximately 75 dBA to more than 88 dBA for brief periods.

Short Term Noise

Noise from localized point sources (such as construction sites) typically decreases by approximately 6 dBA with each doubling of distance from source to receptor. Given the noise attenuation rate and assuming no noise shielding from either natural or human-made features (e.g. trees, buildings, fences), outdoor receptors within approximately 400 feet of construction site could experience maximum noise levels of greater than 70 dBA when onsite construction-related noise levels exceed approximately 89 dBA at the project site boundary. Construction activities that occur during the more noise-sensitive eighteen hours could result in increased levels of annoyance and sleep disruption for occupants of nearby existing residential dwellings. As a result, noise-generating construction activities would be considered to have a potentially significant short-term impact. However with implementation of mitigation measures, this impact would be considered less than significant.

Long Term Noise

Mechanical building equipment (e.g. heating, ventilation and air conditioning systems, and boilers), associated with the proposed structures, could generate noise levels of approximately 90 dBA at 3 feet from the source. However, such mechanical equipment systems are typically shielded from direct public exposure and usually housed on rooftops, within equipment rooms, or within exterior enclosures.

Landscape maintenance equipment, such as leaf blowers and gasoline powered mowers, associated with the

proposed operations could result in intermittent noise levels that range from approximately 80 to 100 dBA at 3 feet, respectively. Based on an equipment noise level of 100 dBA, landscape maintenance equipment (assuming a noise attenuation rate of 6 dBA per doubling of distance from the source) may result in exterior noise levels of approximately 75 dBA at 50 feet.

This project is amending the Madera County General Plan element to set standards of decibel levels.

XII. POPULATION AND HOUSING -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The project as mitigated would not result in population growth, and would not displace existing housing or people.

The proposed project is not designed to induce population growth, and will not result in substantial direct or indirect growth inducement. No housing will be displaced as a result of the project. No people will be displaced as a result of the project.

The population within Madera County as of January 1, 2006, according to the California Department of Finance was 144,396 persons and 46,639 dwelling units. In the unincorporated County (outside the cities of Madera and Chowchilla), the total as of January 1, 2006 was 74,723 persons and 28,289 dwelling units. These numbers average to 3.1 persons per dwelling unit in the County and 2.64 persons per dwelling unit in the unincorporated area. The lower number in unincorporated areas is somewhat attributable to the vacation homes in the mountain areas of the County.

According to the California Department of Finance, in October 2006, there were 59,400 jobs in Madera County. Of those, 23,800 jobs were in the cities of Madera and Chowchilla, and 23,800 were in the unincorporated areas. This leads to a jobs/housing ratio of 1.27:1 for the County and 1.19:1 for the unincorporated areas.

The average number of employees per acre for office uses is 48.53, while the average is 37.69 per acre for neighborhood commercial uses.

XIII. PUBLIC SERVICES

Potentially Significant Impact Less Than Significant with Mitigation Incorporation Less Than Significant Impact No Impact

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- i) Fire protection?
- ii) Police protection?
- iii) Schools?
- iv) Parks?
- v) Other public facilities?

Discussion:

The proposed project site is within the jurisdiction of the Madera County Fire Department. Crime and emergency response is provided by the Madera County Sherriff's Department. The proposed project will have no impact on local parks and will not create demand for additional parks.

Madera County Fire Department provides fire protection services to all unincorporated areas of Madera County, which has an estimated 2000 population of 74,734 persons. MCFD is a full service fire department and is comprised of 15 fire stations, a fleet of approximately 50 fire apparatus and support vehicles, 19 full-time career fire suppression personnel and 185 paid on-call firefighters, and 11 support personnel. The career fire suppression personnel and department administration are provided through a contract with the California Department of Forestry and Fire Protection (CDF). Fire prevention, clerical, and automotive support personnel are County employees. Based on the estimated 2006 population the unincorporated portion of Madera County has a current fire protection personnel ratio of 2.52:1000 to the populations (2.52 full-time career and paid on-call personnel to 1000 residents).

The Federal Bureau of Investigations suggests a law enforcement officer to population ratio of 1.7 – 2.2 per thousand in rural counties.

The Madera County General Plan allocates three acres of park available land per 1,000 residents' population.

Single Family Residences have the potential for adding to school populations. The average per Single Family Residence is:

Grade	Student Generation per Single Family Residence
K – 6	0.425
7 – 8	0.139
9 – 12	0.214

XIV. RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The project would have no discernable impacts to existing parks or require the provision of new or additional facilities.

The Madera County General Plan allocates three acres of park available land per 1,000 residents' population.

XV. TRANSPORTATION/TRAFFIC -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

According to the Institute of Traffic Engineers (7th Edition, pg. 268-9) the trips per day for one single-family residence are 9.57.

Madera County currently uses Level Of Service "D" as the threshold of significance level for roadway and intersection operations. The following charts show the significance of those levels.

Level of Service	Description	Average Control Delay (sec./car)
A	Little or no delay	0 – 10
B	Short traffic delay	>10 – 15
C	Medium traffic delay	> 15 – 25
D	Long traffic delay	> 25 – 35
E	Very long traffic delay	> 35 – 50
F	Excessive traffic delay	> 50

Unsignalized intersections.

Level of Service	Description	Average Control Delay (sec./car)
A	Uncongested operations, all queues clear in single cycle	< 10
B	Very light congestion, an occasional phase is fully utilized	>10 – 20
C	Light congestion; occasional queues on approach	> 20 – 35
D	Significant congestion on critical approaches, but intersection is functional. Vehicles required to wait through more than one cycle during short peaks. No long-standing queues formed.	> 35 – 55
E	Severe congestion with some long-standing queues on critical approaches. Traffic queues may block nearby intersection(s) upstream of critical approach(es)	> 55-80
F	Total breakdown, significant queuing	> 80

Signalized intersections.

Level of service	Freeways	Two-lane rural highway	Multi-lane rural highway	Expressway	Arterial	Collector
A	700	120	470	720	450	300
B	1,100	240	945	840	525	350
C	1,550	395	1,285	960	600	400
D	1,850	675	1,585	1,080	675	450
E	2,000	1,145	1,800	1,200	750	500

Capacity per hour per lane for various highway facilities

Emissions of CO (Carbon Monoxide) are the primarily mobile-source criteria pollutant of local concern. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed and delay. Carbon monoxide transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to congested roadway or intersection may reach unhealthy levels, affecting local sensitive receptors (residents, school children, hospital patients, the elderly, etc.). As a result, the SJVAPCP recommends analysis of CO emissions of at a local rather than regional level. Local CO concentrations at intersections projected to operate at level of service (LOS) D or better do not typically exceed national or state ambient air quality standards. In addition, non-signalized intersections located within areas having relatively low background concentrations do not typically have sufficient traffic volumes to warrant analysis of local CO concentrations.

XVI. UTILITIES AND SERVICE SYSTEMS – Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

According to the Madera County General Plan Background report, all solid waste generated in the unincorporated area is currently disposed of at the Fairmead Landfill, which is owned by the County and operated by Madera Disposal Systems, Inc. The facility is located on 48 acres at the southeast corner of Road 19 and Avenue 22. According to the California Integrated Waste Management Board (CIWMB) the Fairmead Solid Waste Disposal Site is a Class II landfill with a total permitted capacity of 3,204,349 cubic yards. As of July 2, 2001, the disposal site had 2,667,557 cubic yards of remaining capacity. Considering the permitted throughput of 395 tons per day, the landfill is expected to reach capacity in 2013. If additional waste can be diverted, the life of the expansion area could be increased.

According to the California Integrated Waste Management Board, the generation rate per resident is 0.63 pounds per day of trash.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

CEQA defines three types of impacts or effects:

- Direct impacts are caused by a project and occur at the same time and place (CEQA §15358(a)(1).
- Indirect or secondary impacts are reasonably foreseeable and are caused by a project but occur at a different time or place. They may include growth inducing effects and other effects related to changes in the pattern of land use, population density or growth rate and related effects on air, water and other natural systems, including ecosystems (CEQA §15358(a)(2).
- Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts (CEQA §15355(b)). Impacts from individual projects may be considered minor, but considered retroactively with other projects over a period of time, those impacts could be significant, especially where listed or sensitive species are involved.

The project does not have the potential to degrade fish and wildlife, or their habitat, or to eliminate major periods of California history or prehistory.

The project will not generate significant environmental impacts. The incremental effect of the current project, when viewed in light of both existing development and reasonably foreseeable future projects, does not yield impacts which are cumulatively considerable.

No significant opportunities for direct or indirect adverse effects on human beings have been identified for the project, with recommended mitigation measures included as part of the project approval.

**Documents/Organizations Consulted
In Preparation of this
Initial Study**

Madera County General Plan

California Department of Finance

California Integrated Waste Management Board

California Environmental Quality Act Guidelines

United States Environmental Protection Agency

Madera County Environmental Health Department

California State Clearinghouse, Office of Planning and Research

NEGATIVE DECLARATION

ND

GP #2007-031 General Plan Text Amendment

Project Name

Madera Energy Center, LLC

Name of Proponents

Project Location:

County Wide

Project Description:

To amend the General Plan Noise Element

PROPOSED FINDINGS

- An Initial Study has been conducted and a finding made that the proposed project will have no significant effect on the environment (CEQA 15070(a)).
- An Initial Study has been conducted and a finding made that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because Mitigation Measures have been added to the project (CEQA 15070(b)).



Madera County Environmental Committee

A copy of the negative declaration and all supporting documentation is available for review at the Madera County Planning Department, 2037 West Cleveland Avenue, Madera, California.

DATED: *March 3, 2008*

FILED:

PROJECT APPROVED:

Madera County, California, Code of Ordinances >> Title 9 - PEACE, SAFETY AND MORALS >> V. - OFFENSES AGAINST PUBLIC PEACE >> Chapter 9.58 - NOISE REGULATIONS >>

Chapter 9.58 - NOISE REGULATIONS

Sections:

[9.58.010 - Purposes.](#)

[9.58.011. - Definitions.](#)

[9.58.012 - Applicability of noise ordinances to all land uses.](#)

[9.58.020 - General noise regulations.](#)

[9.58.030 - Burglar alarms.](#)

[9.58.040 - Violation—Enforcement.](#)

9.58.010 - Purposes.

The board of supervisors declares and finds that excessive noise levels are detrimental to the public health, welfare and safety and contrary to the public interest as follows:

- A. By interfering with sleep, communication, relaxation and the full use of one's property;
- B. By contributing to hearing impairment and a wide range of adverse physiological and psychological stress conditions; and
- C. By adversely affecting the value of real property.

It is the intent of this chapter to protect persons from excessive levels of noise within or near a residence, school, church, hospital or public library.

(Ord. 582 § 1(part), 2001).

9.58.011. - Definitions.

"Hz (hertz)" means a unit of measurement for pitch that describes the number of cycles per second in a sound vibration. Speech information usually falls between 200Hz and 6000Hz. "Middle C" on the piano falls at two hundred sixty-two Hz."

"Vibration perception threshold" means the minimum ground or structure-borne vibrational motion necessary to cause persons of normal sensitivity to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be a motion velocity of one one-tenth inches per second over the range of one to one hundred Hz. This threshold shall be applied at the location where the sensitivity exists, such as the property lines within a residential development or from the location of a residence constructed an agricultural property.

(Ord. No. 634A, § 1, 3-1-10; Ord. No. 634, § 1, 10-27-08)

9.58.012 - Applicability of noise ordinances to all land uses.

The noise standards of the various categories of land use identified shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

(Ord. No. 634, § 2, 10-27-08)

9.58.020 - General noise regulations.

- A. Residence. It shall be unlawful for any person to make, continue, or cause to be made or continued, any disturbing, excessive or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity residing in the area.
- B. Schools, courts, churches, hospitals and libraries. It shall be unlawful for any person to make, continue, or cause to be made or continued any noise on any street, sidewalk, or place adjacent to any school, institution of learning (except recreational areas of schools), church, court or library, while the same are in use; or adjacent to a hospital, rest home, or long-term medical or mental-care facility, which noise interferes with the workings of such institution or which disturbs or annoys patients in the hospital, rest home, or long-term medical or mental-care facility; provided, conspicuous signs are displayed on such streets, sidewalks, or public places indicating the presence of a school, institution of learning, church, court, library, rest home or long-term medical or mental-care facility.

- C. Engines and Motor Vehicles. It shall be unlawful for any person to cause, permit or allow any disturbing or raucous noises caused off streets or highways by racing or accelerating the engine of any motor vehicle while moving or not moving, by the willful backfiring of any engine and exhaust from the engine tailpipe or muffler, or from the screeching of tires.
- D. The characteristics and conditions which should be considered in determining whether a violation of the provisions of this section exists, include, but are not limited to, the following:
1. The level of noise;
 2. Whether the nature of the noise is usual or unusual;
 3. Whether the origin of the noise is natural or unnatural;
 4. The level of the background noise;
 5. The proximity of the noise to sleeping facilities;
 6. The nature and zoning of the area within which the noise emanates;
 7. The density of the inhabitation of the area within which the noise emanates;
 8. The time of the day or night the noise occurs;
 9. The duration of the noise;
 10. Whether the noise is recurrent, intermittent, or constant;
 11. Whether the noise is produced by agricultural, commercial or noncommercial activity; and
 12. The county of Madera is a "right-to-farm" county.
- E. Disturbing, Excessive or Offensive Noises. The following acts, including but not limited to those stated, are declared to be disturbing, excessive and offensive noises in violation of this section:
1. The use of horns, signaling devices, and like equipment associated with the use or operation of automobiles, motorcycles, or any other vehicle in such a manner as to disturb the peace, quiet and comfort of persons of normal sensitivity.
 2. Radios, Television Sets, Musical Instruments, and Similar Devices.
 - a. Uses Restricted. The use, operation or permitting to be played, used or operated, of any television set, radio, musical instrument or other device for amplification, production or reproduction of sound in such a manner as to disturb the peace, quiet, and comfort of neighboring residents or persons of normal sensitivity in the area;
 - b. Prima Facie Violations. The operation of any device for the amplification, production or reproduction of sound in such a manner that the sound is plainly audible at a distance of fifty feet from the source or the building structure, or vehicle in which it is located, shall be prima facie evidence of a violation of this section.
- F. Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold as defined in Section 9.58 at or beyond the property boundary of the source if on private property or one hundred fifty feet (forty-six meters) from the source if on a public right-of-way will be in violation of this chapter.
- G. Construction activities are limited to the hours of seven a.m. and seven p.m. Monday through Friday and nine a.m. and five p.m. on Saturdays. Construction activities will be prohibited on Sundays.

(Ord. No. 634, §§ 3, 4, 10-27-08; Ord. 582 § 1(part), 2001).

9.58.030 - Burglar alarms.

Any building or motor vehicle burglar alarm shall have an automatic shutoff of the audible alarm which shall terminate its operation within fifteen minutes of the time it is activated.

An owner of a building or of a motor vehicle shall be prohibited from operating a burglar alarm therein which has an audible alarm for more than fifteen minutes of the time it is activated.

(Ord. 582 § 1(part), 2001).

9.58.040 - Violation—Enforcement.

The violation of any of the provisions of this chapter shall be an infraction punishable as provided in Section 1.12.020 of this code. The provisions of this chapter may also be enforced by an injunction issued from the superior court of the county. Any violation of the provisions of this chapter shall be deemed to be a public nuisance.

(Ord. 582 § 1(part), 2001).

City of Chowchilla -

INTRODUCTION

This section describes the existing noise environment in the City of Chowchilla and is being conducted as part of the overall General Plan Noise Element update.

PURPOSE OF THE NOISE ELEMENT

The Noise Element of the City of Chowchilla General Plan provides a basis for comprehensive local policies to control and abate environmental noise and to protect the citizens of the city from excessive noise exposure. The fundamental goals of the Noise Element are as follows:

- To provide sufficient information concerning the community noise environment so that noise may be effectively considered in the land use planning process.
- To develop strategies for abating excessive noise exposure through cost-effective mitigation measures in combination with appropriate zoning to avoid incompatible land uses.
- To protect those existing regions of the planning area whose noise environments are deemed acceptable and also those locations throughout the community deemed “noise sensitive”.
- To protect existing noise-producing commercial and industrial uses in the City of Chowchilla from encroachment by noise-sensitive land uses.

NOISE ELEMENT REQUIREMENTS

The noise element requirements contained in California Government Code Section 65302(f) are summarized as follows:

- A noise element shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:
 1. Highways and freeways.
 2. Primary arterials and major local streets.
 3. Passenger and freight railroad operations and ground rapid transit systems.
 4. Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.
 5. Local industrial plants, including, but not limited to, railroad classification yards.
 6. Other ground stationary sources identified by local agencies as contributing to the community noise environment.

- Noise contours shall be shown for all of these sources and stated in terms of the day/night average level (Ldn) or other appropriate noise descriptors. The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified above.

- The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise. The noise element shall include policies, implementation measures and possible solutions that address existing and foreseeable noise problems, if any.

ACOUSTICAL TERMINOLOGY

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.

Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective: one person's music is another's headache.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn} , and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to L_{dn} , but includes a +3 dB penalty for evening noise.

Table 1 lists several examples of the noise levels associated with common situations.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

**Table 1
Typical Noise Levels**

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. October 1998.

Existing Regulatory Framework

State Guidelines

The State Office of Planning and Research Noise Element Guidelines require that major noise sources be identified and quantified by preparing generalized noise contours for current and projected conditions. Noise measurements and modeling are used to develop these contours. Significant noise sources include traffic on major roadways and highways, railroad operations, airports, and representative industrial activities and fixed noise sources. The guidelines provide suggested criteria for setting standards for human exposure to noise. These guidelines include noise exposure levels for both exterior and interior environments. In addition, Title 25, Section 1092 of the California Code of Regulations, sets forth requirements for the insulation of multiple-family residential dwelling units from excessive and potentially harmful noise.

Local

The existing City of Chowchilla General Plan Noise Element is based upon recommendations by the California State Office of Noise Control as contained in the Guidelines for the Preparation and Content of Noise Elements of the General Plan.

The criteria in the Noise Element are established for determining potential noise conflicts between various land uses, and noise sources. The standards for all noise sources are based upon the Ldn/CNEL descriptor. The Goals and Policies of the existing City of Chowchilla Noise Element are described below:

Existing Noise Element Goals and Policies

Noise Goal

The goal of the City of noise is to maintain a healthful community-wide noise environment.

Noise Objectives and Policies

1) Noise Objectives

- a) To protect existing and future residential and other noise sensitive uses from significant noise impacts.
- b) To provide sufficient information concerning the community noise environment, including the location of noise impacted areas, so that noise can be effectively considered in the city planning and development process.

2) Noise Policies

- a) A community Noise Ordinance should be prepared by the City for use in resolving noise complaint situations.
- b) The City shall designate areas of the community exposed to Ldn (CNEL) 60 or greater as noise impacted areas.
- c) The City shall not permit development of residential or other noise sensitive uses in noise impacted areas unless effective noise mitigation measures are incorporated into the project design that reduce the exterior noise level to less than Ldn (CNEL) 60.
- d) The City shall not allow the establishment of uses or activities which will have significant noise impacts upon the community.
- e) The City shall prohibit the introduction of any permanent, nonresidential land use (industrial, commercial, public utility, etc.) if the projected noise emission level exceeds 60 dBA measured at the boundary of a nearby residential or open space designation. Proposed nonresidential uses, directly abutting residential or open space uses, shall prepare a noise attenuation plan that demonstrates that the noise level, at the nearest residential or open space property line, will not exceed 60 dBA for 30 minutes in any given hour.
- f) The City shall support State and Federal programs aimed at abating vehicular, rail and aircraft related noise impacts.

Proposed Noise Element Goals and Policies

Goals, Objectives, Policies, and Implementation Measures

Goals

- ❖ Protect the City of Chowchilla from the harmful and annoying effects of exposure to excessive noise.
- ❖ Protect the economic base of the City of Chowchilla by preventing incompatible land uses from encroachment upon existing or planned noise producing land uses.

Objectives, Policies and Implementation Measures

The following objectives, policies and programs are organized into the categories and sequence outlined above. The categories, in the order they are presented, are roadway corridors, railroad corridors, aviation stationary noise sources and land use compatibility.

Objective N 1

Minimize noise levels from point sources throughout the City and, wherever possible, mitigate the effects of noise to provide a safe and healthful environment.

Policy N 1.1

Continue to enforce noise abatement and control measures particularly within residential neighborhoods.

Implementation Measure N 1.1. A

The CPD shall actively enforce the California Vehicle Code sections relating to adequate vehicle mufflers and modified exhaust systems. Exceptions may be made for special events conducted in the City.

Policy N 1.2

Require the inclusion of noise reducing design features in development consistent with standards in **Error! Reference source not found.**, and Title 24 California Code of Regulations.

Implementation Measure N 1.2. A

The City shall utilize procedures for project review and issuance of building permits to ensure that noise mitigation measures identified in an acoustical analysis are implemented in the project design.

Policy N 1.3

Incorporate noise considerations into the site plan review process particularly with regard to parking and loading areas, ingress / egress points and refuse collection areas.

Policy N 1.4

The City of Chowchilla shall prohibit the development of new commercial, industrial or other noise generating land use adjacent to existing residential uses, or other sensitive noise receptors such as schools, healthcare facilities, libraries and churches if noise levels are expected to exceed 65 dBA Community Noise Equivalent (CNEL) measured at the property line of the noise sensitive land use.

Policy N 1.5

Review development proposals with respect to the Land Use Compatibility Guidelines for Exterior Noise in **Error! Reference source not found.** as follows:

- a) **Normally Acceptable:** If the noise level is within the “normally acceptable” level, noise exposure would be acceptable for the intended land use. Development may occur without requiring an evaluation of the noise environment unless the use could generate noise impacts on adjacent uses.
- b) **Conditionally Acceptable:** If noise level is within the “conditionally acceptable” level, noise exposure would be acceptable; a specified land use may be permitted only after detailed analysis of the noise environment and the project characteristics to determine whether noise insulation or protection features are required. Such noise insulation features may include measures to protect noise sensitive outdoor activity areas (i.e., residences, schools, parks) or may include building sound insulation treatments such as sound-rated windows to protect interior spaces in sensitive receptors.
- c) **Normally Unacceptable:** If the noise level is within the “normally unacceptable” level, analysis and mitigation are required. Development should generally not be undertaken unless adequate noise mitigation options have been analyzed and appropriate mitigation incorporated into the project to reduce the exposure of people to unacceptable noise levels.
- d) **Clearly Unacceptable:** If the noise level is within the “clearly unacceptable” level, new construction or development should not be undertaken unless all feasible noise mitigation options have been analyzed and appropriate mitigations incorporated into the project to adequately reduce exposure of people to unacceptable noise levels.

Policy N 1.6

The City of Chowchilla shall allow the development of noise sensitive land uses (which include, but are not limited to, residential neighborhoods, schools, and hospitals) only in areas where existing or projected noise levels are acceptable according to **Error! Reference source not found.** Noise mitigation measures may be required to reduce noise in outdoor activity areas and interior spaces to achieve these levels.

Policy N 1.7

The City of Chowchilla shall require noise analysis for new noise sensitive development in areas subject to noise levels greater than 65 dBA CNEL as part of the environmental review process and to require mitigation measures to reduce noise impacts to acceptable levels. The acoustical analysis shall be the responsibility of the project applicant and be prepared by a qualified person experienced in the fields of environmental noise assessments. The acoustical analysis shall

address affects of the project based on existing conditions and build-out conditions of the Chowchilla 2040 General Plan. (See Policy N 4.1).

Implementation Measure N 1.7. A

*In making a determination of impact under the California Environmental Quality Act (CEQA), consider an increase of four (4) or more decibels to be “significant” if the resulting noise level would exceed that described as normally acceptable for the affected land use in **Error! Reference source not found.***

Policy N 1.8

The City of Chowchilla shall establish an ongoing noise monitoring program to enforce City noise standards.

Policy N 1.9

Evaluate and, if warranted, mitigate noise impacts from roadway improvement projects at the time of project design.

Policy N 1.10

Continue to consider noise concerns in evaluating all proposed development decisions where residential uses could be impacted by commercial, industrial, and roadway projects.

Policy N 1.11

The City of Chowchilla shall maintain a pattern of land uses that separates noise sensitive land uses from major noise sources to the extent possible.

Policy N 1.12

The City shall require monitoring of compliance with the standards of the Noise Element after completion of projects where noise mitigation measures have been required.

Policy N 1.13

The City shall require all development projects to mitigate noise impacts associated with construction activities.

Objective N 2

Minimize the adverse effects of airport related noise through proper land use planning.

Policy N 2.1

Ensure that new development can be made compatible with the noise environment by using the standards in, and airport noise contours identified in Table N-5, as guides to future planning and development decisions.

Policy N 2.2

Avoid placing noise sensitive land uses (e.g., residences, schools, group homes, assisted living facilities, day care centers, etc.) within high noise impact areas (greater than 65 dB CNEL) associated with the Chowchilla Municipal Airport.

Policy N 2.3

The City of Chowchilla shall coordinate with Madera County Airport Land Use Commission in maintaining the noise contours for the Chowchilla Municipal Airport as notable changes in current or projected operations are planned. All new land use proposals shall comply with the land use policies of the Airport Land Use Compatibility Plan for Madera County Airports (MCALUCP) for aircraft-generated community noise.

Implementation Measure N 2.3. A

All residential development within the area included in the MCALUCP shall be restricted to areas where outdoor noise levels are less 65 dB CNEL and shall be prohibited in those areas which are greater than 65 dB CNEL except those areas that were designated for residential development prior to the adoption of the General Plan Noise Standards. In those areas, residential uses may be permitted within the 65 to 70 dBA CNEL Noise Contour, if the City Council makes findings that the use was intended prior to the adoption of the General Plan Noise Standards, that substantial resources have been allocated to the planning or construction of that use, that alternative locations for such use are limited or not reasonably available, and that notification to the property owner and future tenants will be given in a legally acceptable manner that significant noise may be present at that location.

Policy N 2.4

Utilize the Airport Protection Overlay Zone, as appropriate, in review of development projects in the vicinity of Chowchilla Municipal Airport.

Objective N 3

Minimize ground transportation related noise impacts through proper land use planning.

Policy N 3.1

Ensure that noise impacts generated by vehicular sources are minimized through the use of noise reduction features (e.g., earthen berms, buffers, landscaped walls, etc.)

Policy N 3.2

Investigate and pursue innovative approaches to reducing noise railroad sources.

Policy N 3.3

Identify and aggressively pursue funding sources to provide grade separations and sound walls along the Union Pacific Railroad Company mainline corridor as noise attenuation measures.

Policy N 3.4

Prioritize locations for implementing road / rail grading separations.

Policy N 3.5

The City of Chowchilla shall work with Caltrans to mitigate noise impacts on sensitive receptors near Highways 99, 156 and 233, and other key state roadways by requiring noise buffering or insulation in new construction.

Policy N 3.6

The City of Chowchilla shall control noise sources in residential areas and other noise sensitive areas by restricting truck traffic to designated truck routes.

Policy N 3.7

The circulation system shall be designed to minimize excessive noise impacts on sensitive land uses. New development shall mitigate noise impacts in accordance with the requirements of the noise element.

Implementation Measure N 3.7. A

Future development and redevelopment along major transportation corridors shall be required to demonstrate that the project will not be subjected to unacceptable noise levels at full road design capacity.

Policy N 3.8

The City of Chowchilla shall seek to reduce impacts from ground borne vibrations associated with rail operations by requiring the habitable buildings are sited at least 100-feet from the centerline of the tracks. An interior noise level of up to 45 dBA, with windows closed, shall not be exceeded.

Implementation Measure N 3.8. A

For habitable buildings located within 100 feet from the centerline of railroad tracks, development shall provide a study demonstrating that ground borne vibration issues associated with rail operations have been adequately addressed (i.e., by building orientation or construction techniques). This study must demonstrate that an interior noise level of up to 45 dBA will not be exceeded with windows closed.

Policy N 3.9

The City of Chowchilla shall require noise buffering or construction treatments (i.e., insulation) in new development that includes noise sensitive uses located near major streets, highways, railroad corridors, Chowchilla Municipal Airport or significant sources of noise.

Policy N 3.10

Provide for spatial separation and necessary noise barriers between railroads and residential or other noise sensitive uses.

Implementation Measure N 3.10. A

Future development along the Union Pacific Railroad Company mainline corridor and the Chowchilla Airport should be buffered with open space and/or noise barriers.

Objective N 4

Establish appropriate noise levels, design standards, and noise reduction techniques for all areas to minimize the adverse effects of noise.

The City of Chowchilla shall use the Land Use Compatibility Guidelines for Exterior Noise (measured in dBA CNEL or Ldn) contained Table N-5 in this Element to direct the siting, design, and insulation of new development to reduce exposure to excessive noise. Where warranted, the City shall employ discretionary review of new development to ensure that the community will be protected from excessive noise levels. The City shall evaluate potential noise impacts and recommend mitigation measures through discretionary review procedures such as environmental reviews, design review and evaluation of use permits.

Implementation Measure N 4.1. A

Non-transportation noise: Noise created by non-transportation noise sources shall be mitigated so as not to exceed the interior and exterior noise level standards of Table N-5. Where proposed non-transportation noise sources are likely to produce noise levels exceeding the performance standards on Table N-5, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Implementation Measure N 4.1. B

Non-transportation noise: New development of noise sensitive land uses shall not be allowed where the noise level due to non-transportation noise sources will exceed the standards of Table N-5. Where noise sensitive land uses are proposed in areas exposed to existing or projected exterior non-transportation noise levels exceeding the performance standards of Table N-5, an acoustical analysis shall be required so that noise mitigation may be included in the project design at the cost of the developer.

All acoustical analyses required by the Hazards Management Element shall:

Be the responsibility of the applicant.

- 1. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.*
- 2. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.*
- 3. Estimate existing and projected (20 year) noise levels in terms of Ldn and/or the standards of Table N-5, and compare those levels to the policies of this Element.*
- 4. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of this Element. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.*
- 5. Estimate noise exposure after the prescribed mitigation measures have been implemented.*
- 6. Describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures.*

Policy N 4.1

The City shall require that industrial and commercial uses be designed and operated so as to avoid generation of noise effects on surrounding sensitive land uses from exceeding the following noise levels for exterior environments:

- a) 65 dBA L50 (7:00 am to 10:00 pm)
- b) 60 dBA L50 (10:00 pm to 7:00 am)

Policy N 4.2

The City of Chowchilla shall grant exceptions to the noise standards for commercial or industrial uses only if a recorded noise easement is conveyed by the affected property owners.

Implementation Measure N 4.3. A

Project applicants for project developments in areas identified as either conditionally unacceptable range or normally unacceptable shall prepare an acoustical analysis, if necessary identify possible mitigation measures to reduce the effects to noise levels to acceptable levels.

Policy N 4.3

In an effort to support active uses in the Downtown Area, the Downtown Area shall be subject to a different noise standard than other locations within the City, as follows:

Downtown Commercial Designation: Between 7:00 am and 12:00 am, exterior noise levels of up to 75 dBA would be considered “normally acceptable” for all uses; and between 12:00 am and 7:00 am, exterior noise levels of up to 65 dBA would be considered “normally acceptable” for all uses.

West Robertson Boulevard Service Commercial Designation: Between 7:00 am and 12:00 am, exterior noise levels up to 70 dBA would be considered “normally acceptable” for all uses; and between 12:00 am and 7:00 am, exterior noise level up to 60 dBA would be considered “normally acceptable”.

For all residential development in the Downtown Area, interior noise levels of up to 45 dBA with windows closed would be considered “normally acceptable”.

Policy N 4.4

During all phases of construction, the City of Chowchilla shall take measures to minimize the exposure of neighboring properties to excessive noise levels from construction related activity.

Policy N 4.5

The City of Chowchilla shall limit construction activities to the hours of 7:00 am to 7:00 pm, Monday through Saturday. No construction shall occur on Sundays or national holidays without a permit from the City.

Implementation Measure N 4.6. A

In order to all for temporary construction, demolition or maintenance noise and other necessary short-term noise events, the stationary noise standards in Policy N 4.2, above may be exceeded within the receiving land use by:

- a) 5 dBA for a cumulative period of no more than fifteen (15) minutes in any hour.
- b) 10 dBA for a cumulative period of no more than five (5) minutes in any hour.

- c) 15 dBA for a cumulative period of no more than one (1) minute in any given hour.
- d) In order to allow for temporary construction, demolition or maintenance noise and other necessary short-term noise events, the stationary noise standards in Policy N 4.2 above, shall not be exceeded within the receiving land use by more than 15 dBA any period of time.

Policy N 4.6

The following sources of noise are exempt from the standards in Policy N 4.2: motor vehicles on public streets; trains; emergency equipment, vehicles, devices and activities; temporary construction, maintenance, or demolition activities conducted between the hours of 7:00 am and 7:00 pm.

Objective N 5

Adopt design standards and identify effective noise attenuation programs to prevent noise or reduce noise to acceptable levels.

Policy N 5.1

When crafting mitigation programs for adverse noise exposure from new development, the City of Chowchilla shall encourage the use of noise attenuation programs that avoid constructing sound walls.

Policy N 5.2

The City of Chowchilla shall require the control of noise at the source for new development deemed to be noise generators through site design, building design, landscaping, hours of operation and other techniques.

Policy N 5.3

The City of Chowchilla shall require operational limitations and feasible noise buffering for new uses that generate significant noise impacts near sensitive uses.

Policy N 5.4

The City of Chowchilla shall require mitigation measures to minimize noise impacts on surrounding areas as part of the permit review process for land uses of a temporary nature, such as fairs or exhibits. The noise level from the temporary use should be in conformance with noise level guidelines for nearby land uses.

Implementation Measure N 5.4. A

Promote use of noise insulation materials in new construction and major rehabilitation.

Implementation Measure N 5.4. B

Identify noise attenuation programs for mitigation of noise adjacent to existing residential areas, including such measures as wider setbacks, intense landscaping, and building orientation away from the noise source.

Objective N 6

Reduce noise levels from traffic.

Policy N 6.1

The City of Chowchilla shall minimize potential transportation noise through proper design of street circulation, coordination of routing, and other traffic control measures.

Policy N 6.2

The City shall provide planned industrial areas with truck access routes separated from residential areas to the maximum feasible extent.

Policy N 6.3

The City of Chowchilla shall require exterior noise in backyards to be “normally acceptable” at a maximum of 60 dBA CNEL for single family development and a maximum of 65 dBA CNEL for multi-family development.

Policy N 6.4

The City of Chowchilla shall consider soundwalls as a means of noise mitigation along proposed and existing roadway segments and railroad corridors only after other noise attenuation programs such as building orientation, setback distances, landscaped berms have been considered to reduce noise to appropriate levels in residential areas.

Policy N 6.5

The City of Chowchilla shall discourage the use of un-landscaped sound walls. Developers/builders are required to provide for landscaping sound walls as part of the normal improvement requirements.

Implementation Measure N 6.5. A

The construction of sound walls will be considered where noise mitigation to acceptable levels by other means is not feasible.

Objective N 7

Protect the residents of Chowchilla from the harmful and annoying effect of excessive noise and protect the City's economic base by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses.

Policy N 7.1

The City shall purchase only equipment and vehicles which comply with noise level performance standards based upon the best available noise reduction technology.

Policy N 7.2

The City shall enforce the State Noise Insulation Standards (California Code of Regulations, Title 24) and Chapter 35 of the UBC.

Policy N 7.3

The City may adopt and enforce nuisance noise abatement ordinances limiting the noise level and time of the day which such noises may be allowed.

Existing Noise Levels

Traffic Noise Levels

The Federal Highway Administration's (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop Ldn (24-hour average) noise contours for all highways and major roadways in the General Plan study area. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site. The FHWA Model predicts hourly Leq values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict Ldn values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Truck mix data for existing conditions were obtained from Caltrans. Existing traffic volumes were obtained from KD Anderson Transportation Engineers. Day/night traffic distribution for Highway 99, and State Route 152 were based upon continuous hourly noise measurement data collected for these roadways. Using these data sources and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing conditions. Table 2 shows the results of this analysis. Appendix A provides the complete inputs and results of the traffic modeling process.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in Table 2 are generally considered to be conservative estimates of noise exposure along roadways in the City of Chowchilla.

Table 2
Predicted Existing Traffic Noise Levels
City of Chowchilla General Plan Noise

Roadway	Segment	Noise Level at 100 feet, Ldn	Distances to Traffic Noise Contours, Ldn (feet)		
			70 dB	65 dB	60 dB
State Route 99	North of Robertson Blvd	76.7	282	607	1308
State Route 99	South of Robertson Blvd	77.0	292	628	1353
State Route 152	West of Robertson Blvd	74.3	194	417	899
State Route 152	East of Robertson Blvd	73.9	181	391	842
State Route 152	West of State Route 99	74.7	205	441	950
Robertson Blvd	South of Washington	63.2	35	76	164
Robertson Blvd	Washington to Fifteenth	62.2	30	65	140
Robertson Blvd	Fifteenth to Sixth	62.2	30	65	139
Robertson Blvd	Sixth to Third	63.5	37	80	171
Robertson Blvd	Third to Chowchilla Blvd	63.2	35	76	163
Robertson Blvd	Chowchilla Blvd to State Route	61.5	27	58	125
Greenhills Blvd	East of Road 16 1/2	52.4	7	14	31
Chowchilla Blvd	North of Avenue 24 1/2	55.1	10	22	47
Fifth Street	North of Kings Avenue	50.3	5	11	23
Fifth Street	North of Colusa Avenue	53.9	8	18	39
Fifteenth Street	South of Lake Avenue	51.7	6	13	28
Fifteenth Street	North of Orange Avenue	52.5	7	15	32
Avenue 25	West of Robertson Blvd	56.8	13	28	61
Howell Road	East of Fifteenth Street	45.5	2	5	11
Ventura Avenue	East of Tenth	53.2	8	16	35
Front Street	South of Orange	47.3	3	7	14
Avenue 24 1/2	West of Chowchilla Blvd	52.5	7	15	32
Avenue 24 1/2	West of Road 16	55.8	11	24	52
Road 16	North of Avenue 24 1/2	55.1	10	22	47
Road 16	South of Avenue 24 1/2	56.5	13	27	59

Notes: Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
Source: j.c. brennan & associates, Inc., 2009

Railroad Noise Levels

Railroad activity in the City of Chowchilla General Plan study area occurs along the Union Pacific Railroad (UPRR) and Burlington Northern/Santa Fe (BNSF) railroad tracks. The UPRR mainline track generally runs parallel to the State Route 99 near the downtown area between Front Street and Highway 99. The BNSF Railroad generally runs parallel to Highway 99 on the east border of the General Plan Area Proposed Sphere of Influence, approximately three miles east of the existing City limits.

In order to quantify existing train operations, j.c. brennan & associates, Inc., conducted continuous noise level monitoring within the General Plan study area. The purpose of the noise level measurements was to determine typical sound exposure levels (SEL) for railroad line operations in the General Plan study area, accounting for the effects of travel speed, warning horns and other factors which may affect noise generation. In addition, the noise measurement equipment was programmed to identify individual train events, so that the typical number of train operations could be determined. Locations of continuous noise monitoring sites are shown on Figure 1. Table 3 shows a summary of the continuous noise measurement results for the UPRR and BNSF railroad lines. Appendix B shows the results of the continuous noise measurement sites.

Measurement Location	Railroad Track	Grade Crossing /Warning Horn	Trains Events Per 24-hr period	Distance to CL	Average SEL
Site	UPRR	Yes	18	150'	104.2 dB
Site	BNSF	No	39	100'	108.1 dB

Source: j.c. brennan & associates, Inc - 2009

Noise measurement equipment consisted of Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter equipped with a LDL 1/2" microphone. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

Based upon the noise level measurements shown in Table 3, the average SEL for train operations along the UPRR line is 104.2 dB at 150 feet, with approximately 18 train events occurring per day. The average SEL for train operations along the BNSF railroad line is 108.1 dB, with approximately 39 train events occurring per day.

To determine the distances to the Ldn railroad contours, it is necessary to calculate the Ldn for typical train operations. This was done using the SEL values and above-described number and distribution of daily freight and commuter train operations for each railroad line. The Ldn may be calculated as follows:

$$\text{Ldn} = \text{SEL} + 10 \log N_{\text{eq}} - 49.4 \text{ dB, where:}$$

SEL is the mean Sound Exposure Level of the event, N_{eq} is the sum of the number of daytime events (7 a.m. to 10 p.m.) per day, plus ten times the number of nighttime events (10 p.m. to 7 a.m.) per day, and 49.4 is ten times the logarithm of the number of seconds per day. Based upon the above-described noise level data, number of operations and methods of calculation, the Ldn value for railroad line operations have been calculated, and the distances to the Ldn noise level contours are shown in Table 4.

Table 4			
Approximate Distances to the Railroad Noise Contours			
City of Chowchilla General Plan Noise Element			
Ldn at Measurement Site	Distance to Ldn Contour		
	60 dB	65 dB	70 dB
UPPR line			
73.7 dB @ 150 feet	1233'	572'	286'
BNSF line			
79.8 dB @ 100 feet	2086'	968'	449'
Source: j.c. brennan & associates, Inc. 2009			

Aviation Noise Levels

The Chowchilla Municipal Airport is located in the southeast region of the existing City of Chowchilla City limits. The Chowchilla Municipal Airport is owned and operated by the City of Chowchilla. Additionally, there are a number of privately owned and operated airfields in the area surrounding the City of Chowchilla.

Noise Impacts and contours associated with Chowchilla Municipal Airport are addressed in the *Madera County Airport Land Use Compatibility Plan*, Adopted by the Madera County Airport Land Use Commission on December 16, 1993.

Chowchilla Municipal Airport

The Chowchilla Municipal Airport / Macready Field is located 2 miles southeast of the center of the City of Chowchilla. This airport has a single runway with a heading of 12/30, at an elevation of 157 feet above sea level. The airport is open 24 hours per day, and has a lighted runway for night operations. Primary use of the airport is single-engine fixed wing aircraft used for general aviation purposes. Twin engine, Business jet, and turbo prop aircraft also frequent the airport. Commercial passenger flights occur at the airport on a limited basis. On an annual average basis, there are approximately 229 operations per day, with the majority of aircraft using the southeast approach (Runway 30). Further information and analysis for this airport can be found in the above referenced ALUCP. Figure 2 shows the Chowchilla Municipal Airport noise contours for year 2011.

Other Aviation Activity

Other general aviation activities can be expected to occur in the vicinity of the City of Chowchilla. The Chowchilla District Memorial hospital allows for emergency helicopter airlift services, which operates as needed 24 hours a day. Other general aviation may be associated with agricultural, forestry, recreational or other private operation.

Fixed Noise Sources

The production of noise is a result of many industrial processes, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by Federal and State employee health and safety regulations (OSHA and Cal-OSHA), but exterior noise levels may exceed locally acceptable standards. Commercial, recreational and public service facility activities can also produce noise which affects adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which have a potential to annoy individuals who live nearby. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels.

From a land use planning perspective, fixed-source noise control issues focus upon two goals:

- 1) To prevent the introduction of new noise-producing uses in noise-sensitive areas, and
- 2) To prevent encroachment of noise sensitive uses upon existing noise-producing facilities.

The first goal can be achieved by applying noise level performance standards to proposed new noise-producing uses. The second goal can be met by requiring that new noise-sensitive uses in near proximity to noise-producing facilities include mitigation measures that would ensure compliance with noise performance standards.

Fixed noise sources which are typically of concern include but are not limited to the following:

HVAC Systems	Cooling Towers/Evaporative Condensers
Pump Stations	Lift Stations
Steam Valves	Steam Turbines
Generators	Fans
Air Compressors	Heavy Equipment
Conveyor Systems	Transformers
Pile Drivers	Grinders
Drill Rigs	Gas or Diesel Motors
Welders	Cutting Equipment
Outdoor Speakers	Blowers
Chippers	Cutting Equipment
Loading Docks	Amplified music and voice

The types of uses which may typically include the noise sources described above, include, but are not limited to: wood processing facilities, pump stations, industrial facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, special events such as concerts, and athletic fields.

Industrial noise sources primarily exist south of the City of Chowchilla. The following descriptions are intended to be representative of the relative noise impacts of such uses and to identify individual noise sources needing consideration during the environmental review process of developments in their vicinity.

CertainTeed operates a fiberglass insulation manufacturing and distribution facility at 17775 Avenue 22 ½. Noise sources associated with the facility are located in two primary regions of the facility. Manufacturing of insulation occurs on the west end of the building, which includes the plants primary mechanical equipment such as cooling towers, exhaust stacks, and raw material deliveries. Shipping and loading docks are located on the east end of the building where trucks enter/exit through the main entrance to the south of the property. CertainTeed estimates that an average of 100 trucks per day access the facility for shipping purposes. The facility is operated continuously year-round, 24 hours a day. Noise measurements were conducted outside the western and southern property lines. The west end of the building generated an average noise level of 49.3 dB Leq and a maximum noise level of 52.4 dB Lmax, at a distance of 900 feet. The South side of the building generated an average noise level of 58.1 dB Leq and a maximum noise level of 60.2 dB Lmax, at a distance of 900 feet. Figure 3 shows a photo of the west end of the facility taken from the south looking north.



Figure 3: CertainTeed Plant Photo

Central Valley Concrete

Central Valley Concrete (CVC) is located east of Road 16 and south of Mariposa Avenue at 745 S 5th Street. The facility is a ready-mix and concrete products supplier. Noise sources include cement mixing equipment, and on-site truck operations. j.c. brennan & associates file data indicates that slowly moving trucks may produce maximum noise levels of 71-74 dB at 100 feet, and idling trucks generate approximately 62-63 dB at 100 feet.

California Corn Growers

The California Corn Growers is a corn sorting and cleaning plant located between the UPRR and Front Street at 625 S. Front Street. The California Corn Growers' peak seasonal operations occur August through October. Noise associated with the California Corn Growers plant include, but are not limited to: truck deliveries, sorting equipment, cleaning equipment, and movement of product between processes.

Allwire, Inc.

Allwire, Inc. operates a wire and conduit manufacturing and distribution facility located north of Avenue 24 ½ and east of Road 16 at 16395 Avenue 24 1/2. Allwire operates Monday through Friday 8:00am to 4:30pm. Truck deliveries and forklift use are the primary noise sources associated with Allwire.

Almond Tree Hulling Co.

Almond Tree Hulling Co. is a seasonal agricultural hulling and cleaning plant located at 23175 Road 16. Their primary season is August through November, operating seven days per week 24 hours per day. During the off season, operations run Monday through Friday 8:00am to 4:30pm. Primary noise sources associated with Almond Tree Hulling Co. include truck deliveries and shipments, cleaning of products, hulling and separating of products, and onsite forklift use. Almond Tree Hulling Co. expects 40 trucks per day during the primary season and 4 trucks per day during the off season.

Snyder California Container

Snyder California Container is a plastic container manufacturer and distributor located north of Avenue 24 ½ and east of Road 16 at 800 Commerce Drive. Snyder California Container operates seven days per week and 24 hours per day. Noise associated with the manufacturing of the containers is large equipment located primarily inside their building and forklifts move the casted product outside for cooling. Snyder California Container estimates about 12 trucks per day picking up product to ship out during shipping hours of 7:00am to 4:30pm Monday through Friday.

Piranha Pipe-Precast

Piranha Pipe-Precast is a concrete pipe manufacture and distributor located south of Avenue 25 and east of Road 16 at 16000 Avenue 25. Piranha Pipe-Precast operates one wet cast and one dry cast area on the site. The 33 acre site is largely used for cooling and drying of pipe. Noise sources associated with Piranha Pipe-Precast are forklifts used for moving pipe around the yard, mixing equipment and truck deliveries. Average noise levels 200 feet north of the Piranha Pipe-Precast facility measured 58 dB Leq.

North American Energy Systems

North American Energy Systems manages this natural gas peaker plant located north of Avenue 24 ½ and east of Road 16. The plant is also currently rebuilding a bio-mass power plant adjacent to the existing natural gas plant. Noise measurements 300 feet west of the compressor building measured a steady 62 dB Leq and noise measurements 900 feet north of the compressor building measured 50 dB Leq.

Black's Irrigation Systems

Black's Irrigation Systems is located at 144 N. Chowchilla Blvd. The company makes concrete irrigation pipes by mixing and pouring concrete into forms. Finished pipes are sold direct to the public or delivered to project sites by the company. Equipment used includes concrete vibrators, fork lifts, trucks, cement mixing machinery, and various hand tools. j.c. brennan & associates, Inc. did not observe significant noise generation off site during pipe making. The company makes pipe approximately 45 days per year.

City of Chowchilla "Area 15" Skate Park

j.c. brennan & associates, Inc. conducted noise measurements of the new "Area 15" Skate Park at the City of Chowchilla Sports and Leisure Park located at 625 N. 15th Street. The measurements were conducted at a distance of 120 feet from the center of the skate park in the parking lot of the facility. Only one skater was using the facilities at the time of the noise measurement sample. Average levels were 59 dB Leq and maximum noise levels were 76 dB Lmax during the skating.

Chowchilla-Madera County Fairgrounds

The Chowchilla-Madera County Fairgrounds are located at the end of South Third Street adjacent to the Chowchilla Municipal Airport. There are a variety of potential noise sources associated with fairground operations including parking lot noise, amplified speech/music, amusement/carnival rides, livestock, concerts, and the Chowchilla Speedway. The majority of these activities are limited to four days of operation during the Chowchilla-Madera County Fair which is usually held two weekends before Memorial Day weekend. Off-season use of the fairgrounds is generally associated with private facilities rentals, and the Chowchilla Speedway.

Chowchilla Speedway

Chowchilla Speedway is a 1/3 mile clay oval race track located on the eastern portion of the Chowchilla-Madera County fairgrounds. The speedway can accommodate 1,200 guests in grandstand seating and an additional 1,600 in bleacher seating. Racing series' range from sanctioned modifieds to sport compacts. The Chowchilla Speedway track schedule shows the pit areas opening at 4 pm, racing beginning at 7 pm. Monthly test & tune dates are also scheduled on Sundays between 9:00 am and noon.

The Chowchilla-Madera Fairgrounds and Speedway were not operating during j.c. brennan & associates, Inc. visit to the project area. Therefore, no noise measurements were able to be conducted at the fairgrounds or speedway. However, j.c. brennan & associates, Inc. recently conducted noise measurements at the Merced Speedway which is similar in size, capacity, and events. Therefore, the noise measurement data collected at this speedway are likely to be similar to the noise generation at the Chowchilla Speedway.

Merced Speedway

Merced Speedway is a 3/8th mile dirt oval located on the northwestern portion of the Merced County fairgrounds. The speedway can accommodate 3,250 guests in grandstand seating and an additional 1,750 in bleacher seating. Racing series' range from super modified, high output classes to small sport compacts. The Merced Speedway track schedule shows the pit areas

opening at 4 pm, racing beginning at 7 pm, and awards/standings closing between 9:30 pm and 10:00 pm. Racing events occur Saturdays and some Sundays from March through October.

In order to evaluate noise levels associated with the Merced Speedway, j.c. brennan & associates, Inc. conducted short-term noise level measurements at the fairgrounds. Short-term measurements were conducted at three locations at the speedway. Continuous noise level measurements were conducted at a nearby residential receiver, located adjacent speedway along East 11th street. Table 5 summarizes the results of the noise monitoring.

Table 5 Existing Merced Speedway Noise Measurement Results July 17, 2007					
Site	Location	Time	Measured Noise Level, dBA		
			Leq	L50	Lmax
Speedway - Continuous					
1	145 West 11 th Street, 800' from Speedway Center	Continuous Monitoring – 6:00 pm to 10:00 pm	61.2	57.9	85.7
			63.0	60.7	75.4
			66.4	61.6	91.1
			64.0	60.5	88.7
			65.3	61.8	82.6
Speedway – Short Term					
2	105' South of Track Center Line, 350' to Center of Oval	7:11 pm	90.0	82.0	99.6
2	105' South of Track Center Line, 350' to Center of Oval	7:22 pm	90.4	86.3	98.8
3	Center of Speedway Oval	7:29 pm	88.9	81.7	99.3
4	300' North of Speedway Center, Crowd Cheering & Announcer over PA	7:48 pm	69.1	69.1	71.2
4	300' Northeast of Speedway Center,	7:53 pm	86.5	80.6	96.3
Source: j.c. brennan & associates, Inc. - 2009					

Nightly Concert Series

The Chowchilla-Madera County Fair hosts a nightly concert series during the county fair. Nightly concerts are held at the Hank FM Stage located in the northwestern portion of the fairgrounds adjacent to the food court. Performances at the outdoor theater ranged from contemporary/pop styles to country, and alternative rock music. Noise levels associated with concerts and musical events such as these can vary considerably depending on several factors: crowd size, type of music, operational levels of the sound system, and the duration of the event.

Community Noise Survey

A community noise survey was conducted to document existing ambient noise levels in and around the City of Chowchilla. Noise monitoring sites were selected to be representative of the

varying noise environments that exist in the City’s General Plan study area and to quantify noise exposure next to major sources of transportation noise.

Three sets of short-term noise measurements were conducted at eight locations on February 4, 2008 through February 5, 2008. In addition, five continuous 24-hour noise monitoring sites were also established throughout the City of Chowchilla to record day-night statistical noise level trends. The data collected included the hourly average (Leq), and the maximum level (Lmax) during the measurement period. Noise monitoring sites and the measured noise levels at each site are summarized in Table 6 and Table 7. Figure 1 shows the locations of the noise monitoring sites. A comprehensive listing and graphical representation of the continuous noise measurement data is provided in Appendix B.

Community noise monitoring equipment included Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters equipped with a LDL ½" microphone. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

Table 6										
Existing Continuous 24-Hour Ambient Noise Monitoring Results - February 4-5, 2008										
City of Chowchilla General Plan Noise Element										
		Average Measured Hourly Noise Levels, dBA								
Site	Location	Ldn (dBA)	Daytime (7:00 am - 10:00 pm)				Nighttime (10:00 pm – 7:00 am)			
			Leq	Lmax	L50	L90	Leq	Lmax	L50	L90
A	South of Rose St. and west of Santa Cruz St. in western Chowchilla – No major noise sources	50.0	49.8	67.1	39.4	35.8	40.3	55.7	37.2	34.8
B	North of State Route 152 and west of Road 14 ½ - 100' to SR 152 centerline	73.9	68.3	81.9	63.2	51.4	67.3	83.1	57.0	45.8
C	South of Robertson Blvd. on S. Chowchilla near UPRR – 150' to UPRR centerline	74.9	67.8	83.9	54.6	51.4	68.6	86.4	55.3	51.4
D	East of S.R. 99 and north of Greenhills Rd. – 150' to SR 99 centerline	76.9	74.3	82.5	70.8	65.9	69.3	79.9	66.1	58.0
E	Avenue 24 & Santa Fe Road – 100' east of BNSF tracks.	80.2	75.3	102.6	44.9	38.6	73.5	91.6	35.8	31.3

Source – j.c. brennan & associates, Inc. - 2009

**Table 7
Existing Short-Term Community Noise Monitoring Results - February 4, 2008
City of Chowchilla General Plan Noise Element**

Site	Location	Time ¹	Measured Sound Level, dB			
			Leq	Lmax	L50	L90
1	Avenue 23 ½ near Road 11	3:31 p.m.	46.7	56.5	45.8	43.4
		8:01 p.m.	43.9	50.3	43.1	39.5
		10:17 p.m.	40.4	43.6	40.4	37.7
2	Southeast corner of Avenue 25 and Road 13	3:52 p.m.	62.1	80.9	47.0	40.1
		8:14 p.m.	47.1	64.2	41.4	38.7
		10:30 p.m.	54.3	70.0	50.7	42.2
3	West of the intersection of Mariposa and South Fifteenth	4:13 p.m.	58.9	74.7	53.0	47.8
		8:29 p.m.	52.0	68.0	45.7	44.4
		10:44 p.m.	49.8	63.0	46.7	45.4
4	Robertson and South Fourth Street	4:36 p.m.	68.3	80.4	66.3	61.1
		8:43 p.m.	57.1	69.6	52.5	46.2
		10:57 p.m.	58.9	70.0	56.0	49.6
5	Road 19 north of Avenue 26	3:36 p.m.	50.7	73.2	37.4	33.9
		8:58 p.m.	46.2	57.7	44.5	35.8
		11:11 p.m.	32.4	46.8	30.1	29.1
6	Grand Falls Way and Grand Island Way	3:57 p.m.	45.5	65.6	41.9	40.1
		9:11 p.m.	44.2	47.9	44.0	42.5
		11:24 p.m.	42.8	48.6	41.7	38.4
7	South of Brenda Reservoir and west of Road 20 ½	4:25 p.m.	65.4	79.1	51.0	40.3
		9:24 p.m.	56.7	75.0	47.2	42.1
		11:38 p.m.	37.3	56.2	32.8	31.5
8	Avenue 24 east of Road 20 ½	5:00 p.m.	61.3	75.7	48.7	36.7
		9:39 p.m.	60.5	77.2	39.4	36.5
		11:53 p.m.	36.8	50.3	34.6	33.1

1 - All Community Noise Measurement Sites have test durations of 10:00 minutes.
Source - j.c. brennan & associates, Inc. 2009.

The results of the community noise survey shown in Table 6 and 7 indicate that existing transportation noise sources such as SR 99, SR 152, Robertson Ave., the UPRR, and the BNSF railroad were the most significant sources of noise observed during the ambient noise survey.

STANDARDS OF SIGNIFICANCE

CEQA Criteria

Criteria for determining the significance of noise impacts were developed based on information contained in the California Environmental Quality Act Guidelines (State CEQA Guidelines). According to those guidelines, a project may have a significant effect on the environment if it will satisfy the following conditions:

- 1) 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.
- 2) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- 3) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- 4) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project.
- 5) 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, expose people residing or working in the project area to excessive noise levels within two miles of a public airport or public use airport.
- 6) For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

Based upon these standards, the effects of the proposed project have been categorized as either “less than significant” or “potentially significant”. Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant and unavoidable impact.

Significance of Changes in Ambient Noise Levels

Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise-sensitive land uses.

The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions. Table 8 is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

Ambient Noise Level Without Project, L_{dn}	Increase Required for Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON)

According to Table 8, an increase in the traffic noise level of 1.5 dB or more would be significant where the pre-project noise level exceeds 65 dB L_{dn}. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 75 dB L_{dn}. The rationale for the Table 8 criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

IMPACTS AND MITIGATION MEASURES

Noise Impact Analysis for Traffic Noise

To describe future noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Direct inputs to the model included traffic volumes provided by KD Anderson Transportation Engineers.

The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

The FHWA model was developed to predict hourly Leq values for free-flowing traffic conditions. To predict Ldn/CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Table 9 shows the future noise levels associated with traffic on the local roadway network. The table also shows the estimated noise level increases which are expected to occur under buildout of the 2040 General Plan.

Impact 1: Buildout of the General Plan may contribute to an exceedance of the City's transportation noise standards and result in significant increases in traffic noise levels at existing sensitive receptors. This is a potentially significant impact.

Mitigation for Impact 1: Implementation of the following mitigation measures will reduce the impact. However, the impact will remain *significant and unavoidable*.

While implementation of the proposed policies and action measures would reduce noise associated with traffic, some traffic noise impacts cannot be mitigated to a less-than-significant level due the proximity of sensitive receivers to major roadways, and because noise attenuation may not be feasible in all circumstances. As indicated by Table 9, the related noise level increases under buildout of the General Plan are predicted to range between 1.3 to 16.6 dB.

Mitigation Measure 1: The proposed Policies and associated Implementation Measures N-1 through N-12, N-3.1, N-3.5, N-3.6, N-3.7, N-3.9, N6.1-N6.4 in the Noise Element chapter of the 2040 General Plan shall be implemented, as outlined.

**Table 9
2040 Traffic Noise Levels vs. Existing Noise Levels
City of Chowchilla General Plan Noise Element**

Roadway	Segment	Primary Existing Land Uses ¹	Noise Levels (Ldn, dB) 100 Feet From Centerline ²				Distance to Cumulative 2040 Traffic Noise Contours, feet	
			Existing (dB)	Cumulative (2040) with Development of Urban Reserve	Change (dB)	Traffic Noise Levels Less Than 60 dB Ldn, Yes or No ³	65 dB Ldn	60 dB Ldn
SR 99	North of Pacific View Ave	A	76.8	81.6	<u>4.8</u>	No	1272	2741
SR 99	North of Robertson Blvd	A, C, H, RR	76.8	79.4	<u>2.6</u>	No	912	1965
SR 99	South of Robertson Blvd	A, C, H, R, RR	76.9	80.1	<u>3.2</u>	No	1015	2186
SR 99	South of E. Sierra View Blvd	A, C, RR	76.9	80.7	<u>3.8</u>	No	1109	2390
SR 152	West of Robertson Blvd	A, RR	72.6	76.8	<u>4.3</u>	No	614	1322
SR 152	East of Robertson Blvd	A, RR, I	72.0	77.6	<u>5.6</u>	No	687	1480
W. Robertson Blvd	East of Highway 152	A, R, RR, C	65.6	69.9	<u>4.4</u>	No	213	459
W. Robertson Blvd	East of Moonlight Dr	A, R, RR, C	59.7	65.7	<u>6.0</u>	No	111	239
E. Robertson Blvd	East of Montgomery Lake Rd	A, R, RR	50.2	62.6	<u>12.4</u>	No	69	150
E. Robertson Blvd	East of North Spring Rd	A, RR	52.6	60.6	<u>8.0</u>	No	51	109
Dairy Lane	North of Sierra View Blvd	A, RR	52.0*	57.3	<u>5.3</u>	Yes	31	66
Dairy Lane	North of Washington Ave	A, RR	51.8	58.5	<u>6.7</u>	Yes	37	80
Dairy Lane	South of Penny Lane	R	52.0*	62.2	<u>10.2</u>	No	65	140
Pacific View Ave	East of SR 99 Ramps	A, RR	52.0*	66.0	<u>14.0</u>	No	117	253
Sierra View Blvd	East of Dairy Lane	RR	51.8	59.4	<u>7.6</u>	Yes	43	92
Sierra View Blvd	East of Robertson Blvd	A, RR	51.8	61.4	<u>9.6</u>	No	57	123
Sierra View Blvd	West of SR 99	A, RR, I	51.8	66.0	<u>14.2</u>	No	117	251
E. Sierra View Blvd	East of SR 99	A, RR	51.8	68.4	<u>16.6</u>	No	168	362

**Table 9
2040 Traffic Noise Levels vs. Existing Noise Levels
City of Chowchilla General Plan Noise Element**

Roadway	Segment	Primary Existing Land Uses ¹	Noise Levels (Ldn, dB) 100 Feet From Centerline ²				Distance to Cumulative 2040 Traffic Noise Contours, feet	
			Existing (dB)	Cumulative (2040) with Development of Urban Reserve	Change (dB)	Traffic Noise Levels Less Than 60 dB Ldn, Yes or No ³	65 dB Ldn	60 dB Ldn
Santa Cruz Ave	South of Palm Parkway	A, R, RR	52.0*	66.7	<u>14.7</u>	No	131	282
Santa Cruz Ave	West of Chowchilla Blvd	A	52.0*	67.0	<u>15.0</u>	No	136	294
N. Fig Tree Ave	South of E. Penny Lane	A, R	52.0*	64.1	<u>12.1</u>	No	87	186
Montgomery Lake	North of E. Robertson Blvd	A, R, RR	52.0*	64.2	<u>12.2</u>	No	89	192
N. Chowchilla Blvd	South of Pacific View Avenue	A, C, I	55.8	62.6	<u>6.8</u>	No	69	149
S. Chowchilla Blvd	South of Robertson Blvd	A, C, R, I	59.2	65.5	<u>6.3</u>	No	108	234
S. Chowchilla Blvd	North of SR 152	A, C, RR, I	55.2	67.2	<u>12.0</u>	No	141	304
3rd Street	South of Palm Parkway	A, C, RR	52.0*	62.4	<u>10.4</u>	No	67	144
Opportunity Road	North of SR 152	A, I	51.8	59.3	<u>7.5</u>	Yes	42	90
North Springs Road	North of Sierra View Blvd	A, R	52.0*	66.9	<u>14.9</u>	No	133	287
North Springs Road	North of Robertson Blvd	A, RR	52.0*	62.0	<u>10.0</u>	No	63	135
Penny Lane	East of Chowchilla Blvd	A, RR	52.0*	65.2	<u>13.2</u>	No	103	222
W. Robertson Blvd	West of Highway 152	A, RR	58.2	60.4	2.1	No	49	106
W. Robertson Blvd	East of Sunrise Street	R, C	60.7	65.1	<u>4.4</u>	No	102	220
W. Robertson Blvd	East of Palm Parkway	R, C	62.0	63.5	1.6	No	80	172
W. Robertson Blvd	East of Front Street	C	61.7	64.1	2.4	No	88	189
E. Sierra View Blvd	East of Manzanita Rd	A, RR, Prison	51.8	61.3	<u>9.4</u>	No	56	121
E Artesian Ave	East of W. Robertson Blvd	A, RR	52.0*	59.5	<u>7.5</u>	Yes	43	92
Sunrise Street	South of Sierra View Boulevard	A, RR	52.0*	59.1	<u>7.1</u>	Yes	41	87

**Table 9
2040 Traffic Noise Levels vs. Existing Noise Levels
City of Chowchilla General Plan Noise Element**

Roadway	Segment	Primary Existing Land Uses ¹	Noise Levels (Ldn, dB) 100 Feet From Centerline ²				Distance to Cumulative 2040 Traffic Noise Contours, feet	
			Existing (dB)	Cumulative (2040) with Development of Urban Reserve	Change (dB)	Traffic Noise Levels Less Than 60 dB Ldn, Yes or No ³	65 dB Ldn	60 dB Ldn
Sunrise Street	North of Sierra View Boulevard	A, RR	52.0*	60.9	8.9	No	53	115
Sunset Ave	South of Washington Ave	A, RR	52.0*	61.4	9.4	No	58	125
Paradise Rd	North of Artesian Ave	A, RR	52.0*	59.4	7.4	Yes	43	92
Maze Ave	West of Santa Cruz Ave	A, RR	52.0*	62.3	10.3	No	66	143
Washington Ave	West of Robertson Blvd	A, R, RR	51.4	62.6	11.2	No	69	149
Washington Ave	West of Paradise Road	A, RR	51.8	56.6	4.8	Yes	28	60
W. Palm Parkway	East of Santa Cruz	A, RR	52.0*	59.8	7.8	Yes	45	98
W. Palm Parkway	East of Robertson	A, R, RR	52.0*	60.0	8.0	Yes	46	99
Penny Lane	West of Dairy Lane	A	52.0*	63.2	11.2	No	76	164
Penny Lane	East of Fig Tree Road	A	52.0*	62.0	10.0	No	63	135
Kings Ave	South of 15th Street	R	51.8	61.7	9.9	No	61	131
Kings Ave	North of 15th Street	R	58.8	62.3	3.5	No	66	142
15th Street	North of Robertson Blvd	R, C	55.7	61.5	5.8	No	58	126
15th Street	South of Robertson Blvd	R, C	56.5	60.3	3.8	No	49	105
15th Street Extension	North of Palm Parkway	A, RR	52.0*	62.4	10.4	No	67	144
15th Street Extension	South of Palm Parkway	A, RR	52.0*	58.8	6.8	Yes	39	83
5th Street	North of Robertson Blvd	C, R	54.3	56.0	1.6	Yes	25	54
5th Street	South of Robertson Blvd	C, R	55.7	60.0	4.3	Yes	46	100
3rd Street	South of Ventura Ave	R	55.8	60.3	4.5	No	49	105

**Table 9
2040 Traffic Noise Levels vs. Existing Noise Levels
City of Chowchilla General Plan Noise Element**

Roadway	Segment	Primary Existing Land Uses ¹	Noise Levels (Ldn, dB) 100 Feet From Centerline ²				Distance to Cumulative 2040 Traffic Noise Contours, feet	
			Existing (dB)	Cumulative (2040) with Development of Urban Reserve	Change (dB)	Traffic Noise Levels Less Than 60 dB Ldn, Yes or No ³	65 dB Ldn	60 dB Ldn
3rd Street	South of Robertson Blvd	C, R	55.8	57.7	1.9	Yes	32	70
3rd Street	South of Mariposa Ave	C, R	52.0*	61.8	<u>9.8</u>	No	62	133
3rd Street	South of 5th Street	C, A, RR	51.8	63.2	<u>11.4</u>	No	76	163
Ventura	West of 3rd Street	R, Hospital	55.6	62.1	<u>6.5</u>	No	64	139
Front Street	South of Robertson Blvd	C, R, I	51.3	61.2	<u>9.9</u>	No	55	119
Mariposa Avenue	East of 3rd Street	R, I	51.8	61.0	<u>9.2</u>	No	54	117
Legacy Boulevard	West of 5th Street	V	52.0*	61.9	<u>9.9</u>	No	62	134
Prosperity Boulevard	South of Robertson Blvd	A	52.0*	61.0	<u>9.0</u>	No	55	117
Prosperity Boulevard	North of West Palm Parkway	A	52.0*	53.3	1.3	Yes	17	36
Manzanita Road	North of Sierra View Blvd	A, RR	51.8	62.3	<u>10.5</u>	No	66	143
Manzanita Road	North of Robertson Blvd	A, RR	51.8	63.0	<u>11.2</u>	No	73	158
Pacific View	West of Manzanita Rd	A	52.0*	58.1	<u>6.1</u>	Yes	35	75

Bold Underline = Significant increase in noise.

¹A=Agriculture, C=Commercial, H=Hotel, I=Industrial, R=Residential, RR=Rural Residential, V=Vacant

²Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

³Traffic noise levels are predicted at a standard distance of 100 feet from the roadway centerline and do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding

* Indicates a street that does not currently exist. In this case minimum ambient noise levels were estimated based upon noise monitoring conducted in the absence of significant transportation noise.

Source: FHWA-RD-77-108 with inputs from KD Anderson Transportation Engineers, Caltrans and j.c. brennan & associates, Inc. 2009.

Noise Impact Analysis for Stationary Noise Sources

Implementation of the proposed General Plan could result in the future development of land uses that generate noise levels in excess of applicable City of Chowchilla noise standards for non-transportation noise sources. Such land uses may include commercial area loading docks, industrial uses, HVAC equipment, car washes, daycare facilities, auto repair, as well as recreational uses. While the General Plan does not specifically propose any new noise generating uses, the Conceptual Land Plans include industrial land use designations, which may result in noise sources. Specific land use types that would locate in the City are not known at this time. Additionally, noise from existing stationary noise sources, as identified in background section of this report, will continue to result in noises that may impact noise-sensitive land uses that may be located in their vicinity. In addition, General Plan growth would require the construction of schools and parks that could result in additional stationary noise source impacts that are not regulated by the City (e.g., school stadiums and sports park facilities).

Impact 2: New projects which may include stationary noise sources such as automotive and truck repair facilities, tire installation centers, car washes, loading docks, corporation yards, parks, and play fields may create noise levels in excess of the City's standards. This is a potentially significant impact.

Implementation of the proposed Goals and Policies of the updated General Plan will not sufficiently mitigate noise from stationary noise sources. Implementation of Policy N4.2 would result in noise levels up to 80 dB Ldn at sensitive receptors. This would conflict with Table N-5 of Policy N4.1. Additionally, noise levels of 80 dB Ldn would result in high levels of annoyance to sensitive receptors and does not comply with the State of California recommended noise levels, as contained in the State's "Model Community Noise Ordinance."

Mitigation for Impact 2: Implementation of the following mitigation measures will reduce the impact to a **less-than-significant** level.

Mitigation Measure 2: The City should adopt a policy limiting stationary noise to the limits identifies in the State of California "Model Community Noise Control Ordinance" which suggests that an exterior hourly Leq/L₅₀ noise level of 55 dBA should be used for evaluating stationary noise source impacts during the daytime period (7 am - 10 pm) and 45 dBA during the nighttime period (10 pm - 7 am), within "suburban" areas.

Airport Noise Impacts

Impact 3 Implementation of the proposed General Plan would result in the creation of new noise-sensitive land uses within the 60 dB CNEL noise contours contained within the Madera County Airport Land Use Compatibility Plan (ALUCP). Additionally, the implementation of the General Plan would result in the creation of new noise-sensitive land uses within over-flight areas of the Chowchilla Municipal Airport, thereby presenting the potential for annoyance from single event noise. This is considered a potentially significant impact.

Single-event noise associated with aircraft overflights is also of concern when evaluating aircraft noise effects in terms of land use compatibility. Single-event noise is the maximum sound level produced by an individual approach overflight at a specific location, often described in terms of Lmax, which is the maximum sound level recorded for each event. A different measurement of single-event noise, also commonly used when evaluating aircraft noise, is the SEL. The SEL describes the event's mean energy level over the duration of the noise event. As would be expected, single-event noise levels for aircraft overflights within the Planning Area would be greatest and most frequent near the airport's primary flight paths.

Implementation of the proposed Goals and Policies of the updated General Plan will not sufficiently mitigate noise from airport noise sources. The proposed Policy 2.1 of the Chowchilla General Plan Noise Section states that the noise contours for the Chowchilla Airport should be used "as guides to future planning and development decisions." However, the "Future 2011" noise contours contained in the Madera County ALUCP were adopted December 16, 1993. The current noise contours are insufficient for evaluating future noise impacts as they do not address the future operations of the airport, as required by the California Division of Aeronautics and Title 24 of the California Building Code.

Mitigation for Impact 3: Implementation of the following mitigation measures will reduce the impact to a **less-than-significant** level.

Mitigation for Impact 3:

Mitigation Measure 3a: Implement Policy 2.1 of the City of Chowchilla General Plan Noise Element.

Mitigation Measure 3b: In order to fully implement Policy 2.1 and comply with State law, the City should work with the Madera County Airport Land Use Commission to revise the Chowchilla Municipal Airport ALUCP, and associated noise contours, with a 20-year planning horizon, as required by the California Division of Aeronautics.

Noise Impact Analysis for Construction Activities

New development, maintenance of roadways, installation of public utilities and infrastructure generally require construction activities. These activities include the use of heavy equipment, impact tools. Table 10 provides a list of the types of equipment which may be associated with construction activities, and their associated noise levels.

Table 10 Construction Equipment Noise City of Chowchilla General Plan Noise Element						
Type of Equipment	Predicted Noise Levels, L_{max} dB				Distances to Noise Contours (feet)	
	Noise Level at 50'	Noise Level at 100'	Noise Level at 200'	Noise Level at 400'	70 dB L_{max} contour	65 dB L_{max} contour
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

Source: *Roadway Construction Noise Model User's Guide*. Federal Highway Administration. FHWA-HEP-05-054. January 2006.
j.c. brennan & associates, Inc. 2009.

Impact 4: Activities involved in construction would typically generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet. Construction could result in periods of significant ambient noise level increases and the potential for annoyance. Because construction activities could result in periods of elevated noise levels at existing residences which may result in temporary annoyance, this impact is considered potentially significant.

Mitigation for Impact 4: Implementation of the following mitigation measures will reduce the impact to a less-than-significant level.

Mitigation Measure 4: The proposed Policies and associated Implementation Measures N-4.5 and N-4.6 in the Noise Element chapter of the 2040 General Plan shall be implemented, as outlined.